



University  
of Cyprus

engineering

humanities

pure and applied sciences

economics and management

letters

graduate school

medical school

social sciences and education

POSTGRADUATE  
PROSPECTUS  
2021-2023

Postgraduate Prospectus 2021-2023  
Published by the University of Cyprus, Nicosia, July 2021

**Production:**

The Publications Office, International Relations Sector,  
International Relations Service (IRS)

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# Rector's Message



Dear friends,

Postgraduate studies at the University of Cyprus, come to compliment the basic undergraduate studies, offering a stepping stone to personal development, an important factor in the field of employment. Due to the current intense competition for recognition in the professional arena, postgraduate studies are considered a valuable qualification for academic purposes if one wishes to continue on this trajectory, and a diversification asset for easier "mobility" in the local and international job market.

The University of Cyprus, committed to the principles, ideas and values it has been pursuing since its founding in 1989, continues to be established locally and internationally as an organization with a wide range of programs of studies, internationally recognized academic staff, modern buildings, top distinctions at the international level, by showing a steady growth in teaching and research. Scientific entities for the production of new ideas and the development of specific educational opportunities, among others are the KOIOS Research Center of Excellence and the Research Center of Excellence in Biobanking and Biomedical Research. Developing local, European and international synergies, with the upgraded, ergonomic, modern and expanding building facilities of Faculties and Departments, our university offers postgraduate students the unique opportunity to specialize in various fields and gain practical skills for connecting education with research and innovation. University of Cyprus students are dynamically integrated into the job market, and are trained to be individually responsible as members of the society.

In addition, I must emphasize that the vast majority of graduates of the University of Cyprus (95.4% in 2020), whose social recognition is apparent inside and outside of Cyprus, manage to be absorbed as active working professionals in the local job market, while our higher education institution itself, very often proceeds to hiring alumni in research programs or administrative positions. We consider our university, a university of the future. We train you to always be equipped with essential knowledge and educational experiences in an ever-changing job market. We measure our own success, based on your success. We provide you with a variety of useful theoretical and practical tools to make your dreams come true.

Taking into consideration the needs that arise for specialized instruction, the technological, political, social, economic, cultural or other significant factors, the University of Cyprus takes all necessary measures to enrich and renew its programmes of study. Our institution offers more than 57 postgraduate programmes and more than 43 doctoral programmes, while 30 of them are taught in English. Despite its young age, the University of Cyprus is ranked among the top 84 according to the "Young University Rankings" for 2021 for newly established academic institutions, while it is ranked among the top 600 universities in the world based on the "World University Rankings", something that undoubtedly demonstrates the high quality standards of our institution.

The School of Postgraduate Studies as an integral part of the University of Cyprus plays a crucial role in our strategic planning. In the global intercultural climate that is being formed, our institution always pursues strong international bonds, and aims to attract talented international students. The University of Cyprus has been providing scholarships, namely the "Evagoras" and "Praxandros" scholarships, for financial assistance, but also for personally motivating existing or prospective postgraduate students. The University of Cyprus also participates in the "ERASMUS + Master Student Loan Guarantee Facility" programme, which allows postgraduate students facing financial difficulties to get EU-guaranteed loans with very favourable repayment terms. The programme accommodates postgraduate students residing in any of the countries participating in the "ERASMUS+" Programme with the exception of Cyprus, with the purpose of eliminating "economic discrepancies" and bringing together young people of different cultural background but with the common goal to attend postgraduate programmes at the University of Cyprus.

Since 2020, universities have adapted to the challenges of the new coronavirus pandemic. The University of Cyprus is no exception. From the beginning of the health crisis, it took measures to ensure that uncertainty and psychosocial hardships would turn into opportunities and constructive building of trust. Our main concern is the protection of students, academic, research and administrative staff and the personnel of our collaborating partner institutions. Thus, the circumstances have not stood in the way, neither for the continuation of the learning process, nor the other activities of the University of Cyprus, as the university has operated almost entirely using and taking advantage of the available technological infrastructure.

I invite you to discover and study the postgraduate programmes listed in this publication. There is a place at the University of Cyprus for every one of you to make your dreams come true.

Yours sincerely,

A handwritten signature in black ink, which appears to read "Tasos Christofides". The signature is fluid and cursive, with a long horizontal stroke at the end.

Professor Tasos Christofides  
Rector



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ΚΑΛ  
01

# general information

postgraduate prospectus 2021-2023



# General Information

[www.ucy.ac.cy](http://www.ucy.ac.cy)

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The University of Cyprus (UCY) was founded in 1989 as the first public university of the country, and admitted its first students in 1992.

The University of Cyprus aims to establish itself as a pioneer research institution achieving international scientific recognition in European Higher Education, offering competitive programmes of study, as well as becoming a centre of excellence in the wider Euro-Mediterranean Region. The main objectives of the University are twofold: the promotion of scholarship and education through teaching and research and the enhancement of the cultural, social and economic development of Cyprus.

In this context, the University believes that education must provide more than simple accumulation of knowledge. It must also encourage students' active participation in the process of learning and acquisition of those values necessary for responsible involvement in the community. Research is promoted and funded in all departments, for its contribution to scholarship in general and for its local and international applications.

The University is a vigorous community of scholars engaged in the generation and diffusion of knowledge. Despite its brief history, the University of Cyprus has earned the respect of the international academic community and the appreciation of the Cypriot society.



## Main Objectives

The main objectives of the University of Cyprus are twofold: the promotion of scholarship and education through teaching and research, and the enhancement of the cultural, social and economic development of Cyprus. In this context, the University believes that education must provide more than the simple accumulation of knowledge. It must also encourage students' active participation in the process of learning, as well as the acquisition of those values and life skills necessary for responsible and active involvement in the society. At the same time, the University sets high standards, through the research programmes of its departments, aiming for the foundation and growth of all branches of scholarship and their dynamic utilization both at a local and an international level.

## Research Activity

Original research is one of the primary activities of the academic staff. Undergraduate and postgraduate students, as well as research assistants may be involved in the research process.

The research programmes of the University of Cyprus cover a wide range of topics in accordance to the already existing specializations of the academic departments and research units. Some of these programmes are funded by European frame programmes (such as the HORIZON 2020, incl. ERC and Marie Skłodowska-Curie Actions, ERASMUS+, INTERREG, LIFE, COST, EEA GRANTS) and others by national competitive programmes (for example, the A. G. Leventis Foundation and the Research and Innovation Foundation), which fund the majority of external research programmes. For the success of its academics in research and innovation, the University of Cyprus has been nominated for international awards in various domains and it is placed in extremely honourable positions worldwide.

The University, within the framework of its social contribution, cooperates with various institutions in Cyprus on research projects aiming specifically at the needs of local industry and the economy in general.

## Research Centres/Units

A number of research centres and units operate at the University of Cyprus as independent, non-profit organizations committed to conducting rigorous and innovative research. The research centres and units aim at developing research at a local, European and international level in their specific scientific fields and attract a large number of research projects funded by research and innovation funding organizations locally, at the EU and abroad. Research projects that apply directly to Cyprus are of vital importance, as they make a significant contribution to Cypriot economy and society by enabling the improvement of the economy and by tackling the major societal challenges that Cyprus is facing.

The following research centres/units operate at the University:

- Archaeological Research Unit
- Centre for Applied Neuroscience
- Centre for Banking and Financial Research
- Centre for Gender Studies
- Centre of Excellence in Biobanking and Biomedical Research
- Economics Research Centre
- EMPHASIS Research Centre
- International Water Research Institute "NIREAS"
- KIOS Research and Innovation Centre of Excellence
- Language Centre
- Modern Greek Studies Research Centre
- Oceanography Centre
- Research Centre for Sustainable Energy - FOSS
- The Cyprus Neuroscience Research Unit (CNRU)
- University of Cyprus Centre for Field Studies

## The Academic Staff

The academic staff comprises of Cypriots, Greeks and international scholars that have been distinguished in renowned universities of Europe, the US and other parts of the world.

## Governing Bodies

The University is a public corporate body. It is governed by its Council that takes decisions on strategic matters and is also responsible for the management of the administrative and the financial affairs of the University, as well as the Senate, that is the highest academic body of the University. The Faculties and Departments are administered by Boards; each Faculty is headed by a Dean and each Department is headed by a Chairperson.

## Administrative Services

The Director of Administration and Finance is the head of the following Administrative Services:

- Academic Affairs and Student Welfare Service
- Financial Services
- Human Resources Services
- Information Applications Service
- Internal Audit Service
- International Relations Service
- IT Infrastructure Service
- Library
- Research and Innovation Support Service
- Technical Services
- University Development Service

The Administrative Services provide the infrastructure and support required for the implementation of the University Council's and the Senate's decisions and policies.

The Head of the Administrative Services who is the Director of Administration and Finance is a non-voting member of the University Council and the Senate and carries out their decisions.



## UNIVERSITY BUILDINGS - MAPS

The University of Cyprus building premises are mainly located at the new University Campus in Athalassa and at the old Central Campus (Academia). The University owns or rents other buildings throughout Nicosia in order to cover its housing needs until the full development of the Athalassa Campus. Upon completion, the University Campus will accommodate 10.000 students in total. In the following website [www.ucy.ac.cy/maps-en](http://www.ucy.ac.cy/maps-en) you can find the University Maps/Buildings. These maps enable you to locate each department, faculty, service or any other entity of the University of Cyprus.

## CAMPUS SERVICES

A number of bank branches, shops, a book store, a hairdressing salon, restaurants, canteens and cafeterias operate within the UCY premises, which serve the University community as well as the visitors.

## LIBRARY

The mission of the University of Cyprus Library is to support the University's goals by providing high-quality scientific information in all its pursuits to achieve its strategic objectives in research, teaching, knowledge dissemination and contribution to society.

### Premises

The Library located at the Learning Resource Centre "Stelios Ioannou" in the University Campus. The building houses all Library functions, services and collections, which spread to five levels combining stacks, reading rooms, work stations, study areas, a 24-hour reading area, as well as a Children's Section in a dedicated, specially designed area. The building has more than 900 seats for studying in all levels, including 31 four-seat and six-seat group study rooms.

The 24-hour reading area is located on the ground floor and it is open seven days a week, 365 days a year.

The only Library branch that remains is the non-lending collection of the Archaeological Research Unit, located at 12 Gladstonos Street, Nicosia.

### Information Sources

The Library has information sources in both print or other physical form (e.g. audiovisual material) and electronic form. Access to online resources is provided through paid subscriptions, either through the Library's participation in the Cypriot Libraries Consortium or through individual purchases. The Library also provides access to information sources that are available free on the World Wide Web. All Library material is searchable through its catalogues that are accessible from its website (<http://library.ucy.ac.cy/>), while access to the full-text (e-books, e-journals, databases, etc.) is given to users connected to the University network. More specifically, the Library collection includes:

### Books

More than 380.000 volumes of print books, organized according to the Library of Congress classification system, all searchable through the online Library catalogue.

### Electronic Books

More than 600.000 electronic books, accessible from the Library catalogue or website.

### Databases

More than 320 databases in various fields, including bibliographic databases, databanks, statistical and financial databases, full-text collections, etc., 188 of which are current subscriptions, while the rest are either non-current subscriptions or databases freely available on the Web.

### Print Journals

More than 7.170 titles of print journals, in Greek and in other languages, all current and non-current, searchable through the Library catalogue.

### Electronic Journals

More than 30.000 titles of online journals accessible through the Library website.

### Digital Collections

These collections include digitized archives material (print, audio, photographic, video) and aim to preserve rare material and render it accessible to all academic community members, as well as to the broader society. They are accessible through the Library website.

### Reference Material Collection

Beyond the online reference collections, the Library also provides print reference material (encyclopedias, dictionaries, etc.) for use within the Library. This material is located on the ground floor and is searchable through the Library catalogue.

### Audiovisual Material Collection

The collection includes CDs, DVDs, maps, audio cassettes, microfilm, microfiche, etc. The collection is searchable through the Library catalogue.

### Services to Users

#### Library Use

For most services users can serve themselves utilizing the self-checkout and self-check in stations located in the Library, as well as their library account (My Library), accessible through the online catalogue.

#### Lending Services

Undertakes the availability of print material to users: checkouts, renewals, returns, reservations, recalls, handling of questions regarding circulation, fines management, etc. All University members may borrow material upon presentation of their valid University card. All members of the University of Cyprus (students, academic, research and administration staff), as well as

external members, can use the reading areas and material of the Library. Non-member visitors can only use the Library premises. There are Self-Checkout Stations in all five levels of the Library for students to check out books themselves, as well as a Self-Return System near the Library entrance allowing students to return books on a 24-hour basis.

### **Inter-Library Loan Services**

Undertakes the provision of books, journal articles, conference proceedings, conference presentations, etc. that are needed for research purposes of Library users and which are not included in its collection. For this purpose, the Library collaborates with several international library networks based in Greece, France, the United Kingdom, Germany, etc. In this framework, the Library also sends books and articles to other libraries in Cyprus and abroad.

### **Printing Services**

There are copying machines in all five levels of the Library for students to print, copy and scan documents. For use of this equipment the University Card is required, which can be credited at the credit machine located on the Ground Floor.

### **Lockers**

There are lockers on the Ground Floor of Learning Resource Centre – “Stelios Ioannou” Library in which users can place, for a small fee, personal items. The University Card is required for locker use.

### **Services to Blind and Visually Impaired Users**

As of 2000, the Library operates a dedicated workstation for visually impaired users. In collaboration with teaching staff and the School for the Blind, the Library converts, upon request, class material to digital or large-font form in order to facilitate the study for users who are visually impaired.

As of 2005, the Library is member of DAISY Book Consortium.

### **Research Assistance**

#### **Information Literacy**

The Library holds educational seminars to familiarize users with its collections, resources and services. The seminars aim to help students and academics develop and enhance their information literacy skills so that they can benefit fully from the Library’s resources.

#### **Bibliographic Management Tools (RefWorks, etc.)**

Tools for the management of bibliographic references are available through the Library website. They allow users to directly import to a personal database bibliographic references from online databases and websites, to create and organize their bibliographies, to format their bibliographic references (e.g. MLA, APA, Chicago Manual of Style), etc.

### **Ask a Librarian**

The service is accessible via the Library website and is available to both the academic community of the University of Cyprus and external users.

#### **• AskLive**

Users can use the AskLive Service to ask brief and specific reference questions related to the collections, resources and services of UCY Library. Replies are sent via real-time chat.

#### **• By Appointment**

Users can schedule a research consultation appointment for personal assistance in a variety of areas: to find appropriate print and electronic information sources on a particular topic; to become familiar with the Library catalogue and collections; to learn how to use library resources and tools, including library catalogues, databases, other electronic resources, RefWorks, etc.

The service is available primarily to members of the academic community of the University of Cyprus and, as time permits, to external users.

### **European Documentation Centre (EDC)**

The European Documentation Centre (EDC) of the University of Cyprus was established in 2012, in order to provide information about the European Union’s legislation and institutions. It forms part of a network of 400 documentation centres that were established by the European Commission after 1960.

The EDC of the University of Cyprus is open to members of the Academic and the wider community during the Library’s working hours. Its collection includes printed material and online resources regarding the EU and its policies, such as official publications, annual reports, journals, statistical and economic databases, bibliographies, textbooks and pamphlets, etc. Monographs and print journals are searchable through the Library catalogue.

### **IT INFRASTRUCTURE SERVICE**

#### **Account Services**

All students are entitled to a university account (username/ password), which will facilitate their access to the various University systems such as email, labs, student registration system (Banner), Blackboard, remote access service (VPN), UCY wireless network (ucywifi), European Universities wireless network (eduroam), etc.

Accounts can be set up online at [www.ucy.ac.cy/register](http://www.ucy.ac.cy/register). All accounts include the tools needed for their management (password change, forgotten password change through answering predefined questions, forgotten username recovery).

Users will be authenticated once and can access the rest of the resources, authenticated for the remainder of their use of a service.

## Email Communication & Collaboration Services

For every member of the University community, the University offers a personal electronic mail box and email address, as well as calendar services, contacts, tasks and e-briefcase services, all with sharing capabilities. These services are made available to the community either via the web tool at [www.ucy.ac.cy/itis](http://www.ucy.ac.cy/itis) or via locally installed applications on the users' personal computers. For the faculty and staff, these services are also available on mobile devices.

## Electronic Storage and Tools Services

Individual electronic space is available to students who wish to store data and/or create web pages. Unix tools are also available for teaching purposes.

## Open Access PC Labs

Labs and personal computers as well as printing facilities are available for use by the University community. These are equipped with a wide variety of teaching software and are available for project work and teaching purposes.

## Network Services

High-speed network access to the internet and other network services are provided.

## Telephony Integrated Services

Integrated Services include telephony, electronic fax, softphone and voice mail. An important telephone service is the Call Centre, which provides callers with up-to-date information on the University.

## Wireless Network

Wireless network is available in almost all buildings of the University. It is used to support lectures, conferences, seminars and many different events.

## Residential Halls - Network Services

Network services are available in all rooms of the residential halls.

## Multimedia and Videoconference

Specialized video conference systems are available for communication, tele collaboration and research as well as multimedia systems utilized for teaching and research purposes. Audiovisual material production and management is also provided for e-learning, teaching and research and for audiovisual coverage of events.

## Helpdesk

Phone support is available for all central services of the IT Infrastructure Service. Our goal is to offer efficient and knowledgeable support related to IT systems.

## Remote Access Service (VPN)

This service allows authorized University users secure access to the University's intranet from wherever there are internet facilities. The user, therefore, has access to all University online resources (e.g. the library's electronic journals).

## Data Security and Protection Service

The University network and core systems are monitored in order to detect anomalies and prevent security risks and malicious behavior. It also investigates all security incidents.

## Antivirus Service

Antivirus protection is provided to all University-connected computers and servers (e.g. labs).

## Antispam Service

All emails directed to University addresses are scanned prior to delivery. This is to ensure that the mail service functions efficiently and to protect users from malicious viruses. This service also helps reduce the number of unsolicited messages (SPAM).

## INFORMATION APPLICATIONS SERVICE

### E-Learning

Students who register for courses using the e-learning system are able to access all course material using their personal accounts.

### Educational Services

At the beginning of the academic year the Information Applications Service offers intensive educational seminars on the use of web applications and the e-learning system. Interested students may register online at [www.ucy.ac.cy/issrequests](http://www.ucy.ac.cy/issrequests).

### E-University

E-University aims at providing automated and qualitative services to the University academic community, exterior contracting institutions and the wider society. These services are focused on the qualitative support of research and teaching through the use of information technology in order to establish a functioning Electronic University (e-University). This requires both the design of new processes and the adoption of a new working mentality. Users can access these services via the university portal at <https://portal.ucy.ac.cy>.

## INTERNATIONAL RELATIONS

International relations play a crucial role in the promotion of the University of Cyprus abroad, resulting in its good reputation internationally for the quality of both research and teaching. Realising its importance, the University's Rectorate has placed internationalisation at the top of its strategic goals. Internationalisation at the University of Cyprus is achieved through a range of activities.

The University of Cyprus is an active member in more than 60 university networks/associations worldwide, both at international and departmental levels, including the European University Association (EUA), the Association of Mediterranean Universities (UNIMED), the Network of Universities from the Capitals of Europe (UNICA), the International Association of Universities



(IAU), the Santander Group (SG), the Euro-Mediterranean Universities Network TETHYS, the European Association of Erasmus Coordinators (EAEC), the Global Campus of Human Rights and others.

The University has also signed Bilateral Agreements of Cooperation with more than 110 universities/research institutions in Europe, Australia, the Middle East, Asia, USA, Canada and Africa. These agreements, facilitate student and academic staff exchanges, joint research projects, conferences and exchange of teaching and research material. Additionally, the University offers 5 joint degree programmes (at Masters' and Ph.D. levels) in collaboration with other European institutions (e.g. the University of Athens - Greece, Wageningen University - Netherlands, etc.). Moreover, the University of Cyprus has signed a number of Cotutelle agreements with institutions abroad.

Student and staff mobility is a major tool of the internationalization strategy of the Institution. The University has been participating in the ERASMUS+ Programme since the academic year 1997/1998 and in the ERASMUS+ International since 2015/2016. Exchanges can also take place within the framework of Bilateral Agreements of Cooperation.

Organizing Summer Schools, with student participation from abroad and in collaboration with academics from partner institutions, contributes significantly to the internationalization of the institution. Throughout the year, the University welcomes delegations from institutions/organizations from the international arena, diplomatic delegations of other countries to Cyprus, as well as Cypriot diplomats based abroad and student organizations of the Diaspora.

An important recognition of the impact of the University of Cyprus in the international arena, was the establishment of the the Aula Cervantes on the University's premises in 2011 (as decided by the Headquarters of the Instituto Cervantes in Madrid). In addition to that, the Confucius Institute on the University's premises was also established in 2014, which is the first to be established in Cyprus and the first HSK (Hanyu Shuiping Kaoshi) Centre in Cyprus. Moreover, an important aspect of the University's efforts towards internationalisation, is the recruitment of international students. With a large number of postgraduate programmes offered in English, the University aims to increase its number of international students in the coming years.

Another important development for the University of Cyprus internationally, is its participation in the Young Universities for the Future of Europe (YUFE) Alliance. The Alliance is comprised of eight young universities and six associate partners from the higher education, non-governmental and private sector. Together, the YUFE partners will establish one of the first true European Universities, a single European University with various campuses across Europe offering a European University degree based on a combination of academic, professional and civic skills.

Its international outlook has ranked the University of Cyprus 67 in the Top 200 World Universities under 50 years old Category of the Times Higher Education World University Rankings 2019.

## LECTURES/CULTURAL ACTIVITIES

The University organizes public lectures and other events focussing on scholarly, scientific and cultural issues as well as on topics of wider interest. Furthermore, it organizes exhibitions, concerts, prize awards and other activities open to the general public.

The institution cooperates with many cultural organizations, local authorities, and others to promote culture, both for the benefit of the academic community and the students, as well as for society at large. Examples are the contest of visual arts "Telemachos Kanthos" and the presentation of the artistic creation called "Immigrants" made by students of the High School of St. Luke in Colossi, which projection was made at a European level.

Furthermore, six Free Universities operate in cooperation with municipalities and other parties: The Zenonion Free University in cooperation with Larnaca Municipality, the Free University of Famagusta in Limassol in cooperation with the Municipality of Famagusta, the Ierokipeion Free University in cooperation with the Municipality of Yeroskipou, the Free University of Cypriot Diaspora in London, the Salaminio Free University of Famagusta in cooperation with Diocese of Constantia in Paralimni and the Free University of the Occupied Municipalities of Kerynia.

The University has already made a dynamic impact on the cultural and intellectual life of Cyprus. Its contribution is growing as the programmes of teaching and research are expanded.

## PUBLICATIONS

In order to provide comprehensive information to the public, the students and to prospective students, as well as to the international academic community, the University of Cyprus produces a wide range of publications. For further information on the University's publications, please visit the website at [www.ucy.ac.cy/publications/en](http://www.ucy.ac.cy/publications/en).

The Cyprus University's input in the publishing activity was enhanced with the dynamic contribution of the Cyprus University Press ([www.ucy.ac.cy/pek](http://www.ucy.ac.cy/pek)). The main objective if the Cyprus University Press is to support and promote the writing activity, not only in Cyprus and in Greece, but internationally as well.

## CULTURAL CENTRE

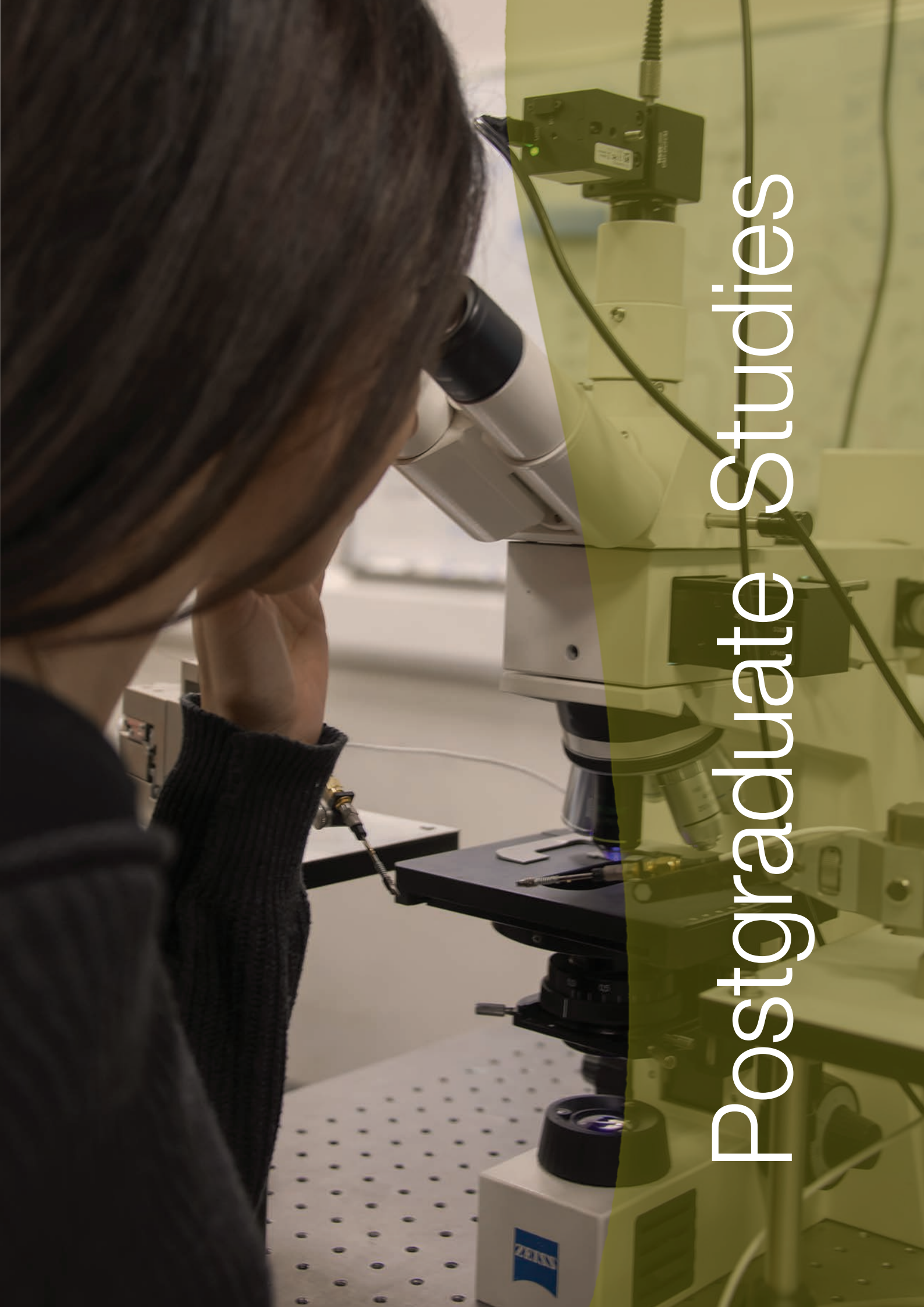
The Cultural Centre of the University of Cyprus is located at the Axiothea Mansion, in the historic centre of Nicosia, is an internationally acknowledged institution that promotes culture and the arts as part of academic education, celebrates cultural diversity, encourages the involvement of students, as well as alumni of the

University, in cultural and artistic activities, cherishes the traditions of Cyprus and the wider Euro-Mediterranean region, and fosters the universal values of European civilization.

With its activities, the Cultural Centre pursues the twofold mission of adding a holistic perspective to traditional academic education, and promoting Euro-Mediterranean culture as a common asset, which has been accumulated through centuries of interaction among nations. The first part of the mission is realised through the Theatrical Workshop of the University of Cyprus (THEPAK), which complements academic education and literary research by involving students in the stage presentation of known or less familiar masterpieces of Greek literature that have as a common denominator the idiomatic language of peripheral Hellenism. By applying interactive approaches to literary research and re-enacting poetry, fiction and non-fiction as drama, THEPAK deepens students' knowledge, understanding and appreciation of literature, while contributing to the general promotion and modern reception of valuable works of Greek literature in Cyprus and abroad.

The publishing activity of THEPAK and the Cultural Centre also fits within this context. A series of ten volumes dedicated to the plays staged by THEPAK and to their authors, have already been published. They contain the full text of each theatrical adaptation, biographical notes on the authors, and a rich selection of the most important research studies on their works. For further information on these publications, please visit the website at: [www.ucy.ac.cy/cucentre/en/publications](http://www.ucy.ac.cy/cucentre/en/publications)

The second part of the Cultural Centre's mission is realized through the annual Cultural Festival of the University of Cyprus, which aims at promoting culture and the arts, and at encouraging the creative endeavours of certain established but primarily emerging non-commercial artists from Cyprus, Europe and the broader Mediterranean region, thus enriching the cultural agenda of Cyprus with high-quality performances that enhance the perception of the Euro-Mediterranean region as a common cultural area.



# Postgraduate Studies



# Postgraduate Studies

The University of Cyprus began accepting postgraduate students in the academic year 1997-98. All academic departments of the University offer postgraduate programmes of study at the Master (M.A., L.L.M., M.Sc. and M.Eng.) and Doctor of Philosophy (Ph.D.) level in a wide range of subjects.

## STUDIES

### ATTENDANCE REGULATIONS

The postgraduate programmes of each department are supervised by a three-member Postgraduate Programmes Committee, chaired by a Postgraduate Programmes Coordinator. The Coordinator may be the chairperson of the department or a member of the academic staff appointed by the chairperson. The other members of the Committee are appointed by the Departmental Board. The Committee is appointed for a two-year term.

For every student in a postgraduate programme, each Department appoints an academic supervisor, whereas at the research stage of the Ph.D. a research supervisor is appointed. Candidate students select a member of the academic staff to act as their research supervisor. The student's choice must be approved by the Postgraduate Programmes Coordinator. The Research Supervisor guides the students in their research and provides the necessary support and guidance.

The programmes of study of the University of Cyprus are based on the European Credit Transfer and Accumulation System (ECTS). An ECTS normally corresponds to a 25-30 hours workload per semester. Full-time status requires a course load of 18 ECTS per semester. Students carrying fewer ECTS are considered part-time.

Postgraduate programmes are taught in one of the official languages of the University of Cyprus (Greek and Turkish), as well as in other international languages.

Postgraduate studies are subject to the Postgraduate Studies Regulations. For more information, students must contact the Graduate School (tel.: +357 22894044) or visit the website: [www.ucy.ac.cy/graduateschool](http://www.ucy.ac.cy/graduateschool).

### Requirements for M.A., LL.M., M.Sc. and M.Eng. Degrees

- Attendance for a minimum of three semesters. The maximum period of study is eight academic semesters.
- Successful completion of 90-120 ECTS at the postgraduate level (or more than 90 or 120 ECTS if the programme includes practical exercise), in accordance with the provisions of the programme of studies of the relevant department.
- Other criteria set by the department, which may include the submission of a dissertation.
- If a dissertation is rejected, the student is allowed to resubmit the dissertation once more. Each department is responsible for defining resubmission procedures.

### Requirements for a Ph.D. Degree

- Attendance for a minimum of six semesters. The maximum period of study is 16 academic semesters.
- Successful completion of 240 ECTS (60 ECTS at the postgraduate level, in accordance with the provisions of the relevant programme of studies of the department: holders of a master's or equivalent degree may be partially or fully exempted from this requirement. The research part of the programme comprises of 120 ECTS; the remaining ECTS are acquired through the comprehensive examination, the presentation of the dissertation proposal, the writing of the dissertation, etc.).
- Success in a comprehensive examination between the third and the seventh semester of studies.
- The presentation of the proposal can take place two to four semesters after the student has succeeded in the comprehensive examination. A committee is proposed by the Research Advisor and the Postgraduate Programmes Committee of the Department. It is chaired by the research advisor and appointed by the Council of the Department.
- Submission of an original dissertation constituting an important contribution to the particular discipline.
- Defence of the dissertation before a five-member examining committee. The committee is appointed by the Council of the Department and is composed of three members of the departmental Academic Staff, one of whom is, in all cases, the student's research supervisor; one member from another university or research centre and a member from another department of the University in a related discipline or from another university or research centre.
- The Chair of the Examining Committee is a member of the academic staff of the relevant department, but not the Research Supervisor.
- If the Examining Committee cannot recommend awarding a degree, the Ph.D. candidate may be allowed to resubmit the dissertation, after due modifications have been made in accordance with the Committee's requirements, and repeat the entire process of defence once more.
- The Ph.D. candidate may not submit a dissertation until he/she has completed six semesters from the day of admission to the postgraduate programme and after the successful completion of the comprehensive examination and the required credit units.

## Application Requirements

Application forms should be submitted electronically to the University of Cyprus by the 31th of March for entry in the fall semester and by the 31st of October for entry in the spring semester. Applicants must have a University degree, awarded by an accredited institution in the country where it operates, or a degree evaluated as equivalent to a university degree by the Cyprus Council for the Recognition of Higher Education Qualifications (KYSATS). Individuals who will be awarded a University degree or Graduation certificate, fulfilling the criteria of the application requirements by the end of the week that precedes the registration week, will also be eligible to submit an application form.

The Applications should include the following:

1. A Curriculum Vitae.
2. Certified copies of University degrees or confirmation of graduation (Admitted candidates will need to submit copies of the certified degrees along with the Registration Form to the University of Cyprus before their registration).
3. Copies of Transcripts for all programmes of study graduate and undergraduate.
4. A brief Personal Statement of goals and research interests (up to 2 pages).
5. The names and contact details of at least two (2) referees (University Professors) familiar with the candidate and his/her academic performance. Candidates are expected to request their evaluators to send letters of recommendation directly to the Coordinator of Postgraduate Studies of the Department, through the online application system. The Department may request additional confidential information from referees. For the Faculty of Engineering and the Department of Psychology, all recommendation letters need to be written on a special form, which can be found on the website: [www.ucy.ac.cy/goto/graduateschool/EN-US/HOME.aspx](http://www.ucy.ac.cy/goto/graduateschool/EN-US/HOME.aspx). Reference letters should be submitted electronically directly by the University Professors using the online application system.

Some departments require three reference letters to be submitted along with the application, so before submitting your application, please visit the web page of the relevant department to verify the number of reference letters required.

The criteria for assessment of candidates are the following: academic background in the appropriate discipline and grade in related bachelor's degrees; a minimum of two or more letters of recommendation, depending on departmental regulations; interview and/or written examination (if stipulated in the department's internal regulations).

## Fees

The fees for postgraduate studies are as follows:

### a. Master's Degree

- Master in Business Administration (MBA): €10.250.
- Master in Petroleum Engineering: €8.000.
- Applied Programme in School Psychology: € 5.125 (The program is offering a clinical practicum for which the fee is 1000 euros. This amount covers the expenses for clinical supervision services provided by Registered Professional Psychologists).
- Master in Business Economics (Technology, Innovation Management Entrepreneurship - TIME MBE): €10.000.
- Master in Human Resource Management: €7.500.
- Master in Intelligent Critical Infrastructure Systems: €6.500.

### b. Doctoral Degree

- Ph.D. students, holders of a Master's degree: Total fees €4.000.
- Ph.D. students, without a Master's degree: Total fees €6.500.

Each year of study beyond the six years, with a maximum duration of eight years (16 semesters) corresponds to tuition fees of €1.250 per year, €625 per semester. Maximum tuition fees for a Ph.D. degree are €9.000.

In addition to graduate tuition, a clinical practicum fee of €1.000 is charged for the Applied Ph.D. Programme in Clinical Psychology, in order to cover expenses for clinical supervision services provided by registered professional psychologists.

If students wish to suspend their studies, they must follow the relevant procedure of the Postgraduate Studies Regulations. For more information, students must contact the Graduate School (tel.: +357 22894044) or visit the website at: [www.ucy.ac.cy/graduateschool](http://www.ucy.ac.cy/graduateschool).

Fees must be paid at the Accounts Office prior to registration. The deposit of fees, which is paid in advance, is not refundable.

## Postgraduate Students Funding

The University of Cyprus offers a number of scholarships to postgraduate students, based on academic merit. They are either full scholarships (i.e. tuition fees and an annual stipend) or partial scholarships (i.e. tuition fees). The scholarships are addressed to newcomers Ph.D. and Master students as well as to enrolled students.

Apart from scholarships offered by the State and the University of Cyprus, the University of Cyprus may subsidize a postgraduate student who offers to work as an assistant in his/her department or other departments. Assistantships may involve assisting in teaching, tutorials, help with assignments, lab supervision, grading, etc. They do not apply to the research activity of the student nor to the research activity of the academic and research staff.

Monthly earnings can amount to €342 or €683 for a maximum period of ten months.

## STUDENT SERVICES

All students are assigned an academic advisor who assists them in academic matters. The Academic Affairs and Student Welfare Service is responsible for registration, documentation, accommodation, financial aid and social support ([www.ucy.ac.cy/graduateschool/en](http://www.ucy.ac.cy/graduateschool/en)).

### Information Office

The Information Office provides information on all student matters including studies, housing, welfare, counselling, career, sports, etc. The information is provided personally, by phone and by e-mail ([fm@ucy.ac.cy](mailto:fm@ucy.ac.cy)).

### International Student and Staff Support Office

The Office ([www.ucy.ac.cy/internationalsupport](http://www.ucy.ac.cy/internationalsupport)) provides (a) information to the foreign students about studies at the University of Cyprus and (b) support to all non-European students and staff seeking to immigration requirements and visa issues such as entry visa, issuing and renewal of residence permits in Cyprus, medical examinations, etc.

### Careers Centre (CC)

The CC is the link between students and graduates with the labour market and the postgraduate studies.

The CC aims at enhancing the professional skills and competences of students and graduates. Seminars and workshops are organized each week to build necessary skills for employment, such as "Time Management", "Presentation Techniques", "Problem Solving", etc. At the same time, seminars are organized to help students enter the labour market, such as "Preparation of Curriculum Vitae and Cover Letter", "Preparation of Personal Statement", "Interview Techniques", "LinkedIn", etc.

The connection with the labour market is mainly achieved through the organization of presentations for employment prospects in a variety of business disciplines, a Business Game competition and a Career Fair, with more than 70 potential employers involved.

The CC also provides guidance for post-graduate programmes offered abroad, information on scholarships, as well as useful links and websites with useful references that help students make an informative decision.

### Employment Opportunities

The University has a limited number of vacancies available for students' employment. The Careers Centre informs students about temporary job vacancies both within and outside the University. Graduate assistantships are sometimes available, depending on individual department needs.

Full-time and part-time vacancies addressed exclusively to students and graduates of our University are announced through the Careers System. Uploading their Curriculum

Vitae onto the system, students and graduates can get informed about available vacancies. Also, the Careers Office informs students of a limited number of positions in the various departments of the University in the form of part-time, hourly work while during the summer period, an internship program for short placements of students in Cypriot enterprises is implemented.

### Psychological Support, Counseling and Personal Development

The University of Cyprus provides free of charge psychological support and counseling services for all its students through the Mental Health Centre. The primary aim of this service is to contribute to the well-being of students, so as to enable them to maximize their experience during the course of their studies and after. Services are offered through individual or group psychotherapy and counseling sessions. Common concerns among students visiting the Centre include anxiety, stress, relationships, mood swings, problems to do with their academic life (difficulties in adjusting to their new way of life, etc.), a loss of a beloved one, as well as personal or career decisions that need to be taken.

The Centre also organizes presentations and workshops on issues relating to students' psychological well-being. It launches prevention and sensitization campaigns on topics related to psychological health and well-being in collaboration with student and youth groups, as well as with stakeholders and organizations in the broader community. Such activities can also be planned upon request by student groups or departments. It also periodically publishes and disseminates relevant informative material in print or through its website.

### Financial Aid

The Social Support Office of the Academic Affairs and Student Welfare Service provides guidance on financial problems. Students with serious financial problems may be subsidized by the Student Welfare Fund. The Fund is supported financially by the University of Cyprus as well as external contributions and donations.

### Services for Students with Disabilities

Students with disabilities are treated as equals to all other students, whilst every effort is made to offer practical solutions to their specific problems, such as access to the University facilities, or assistance on academic issues.

Students with disabilities should contact the Social Support Office of the Academic Affairs and Student Welfare Service.

### Student Accommodation and Catering

The University of Cyprus operates a number of student dormitories (208 bed spaces) on campus. For information regarding the cost and criteria for campus accommodation/other details, students may contact the Housing Office of the Academic Affairs and Student Welfare Service.



Due to the limited number of bed spaces available, the Housing Office maintains a list of flats and houses for rent. This list is available on a weekly basis, during the academic semesters. The Housing Office provides advice on matters related to campus accommodation. A number of informative leaflets are also produced by the Housing Office.

### Accommodation for ERASMUS Students

ERASMUS students attending classes at the University of Cyprus may be accommodated in single rooms in the campus dormitories. ERASMUS students should inform the Housing Office of their accommodation needs by June 15 for the Fall Semester and by November 15 for the Spring Semester.

### Health

#### General Health Scheme (GHS)

The General Health Scheme to Cypriot students Medical Care as long as they are registered in the Beneficiary Portal and have chosen a Personal Doctor. You can find related information at the following link:

[https://www.gesy.org.cy/sites/Sites?d=Desktop&lo-cale=el\\_GR&lookuphost=/el-gr/&lookuppage=home](https://www.gesy.org.cy/sites/Sites?d=Desktop&lo-cale=el_GR&lookuphost=/el-gr/&lookuppage=home)

**All EU Students**, who are holders of the European Health Insurance Card (EHIC), are allowed access to free medical care at all Public Hospitals.

**Non-EU students** are obliged by the Migration Department regulations to obtain private health insurance coverage. The International Student and Staff Support Office may provide guidance and assistance regarding medical insurance companies and their costs.

#### Solidarity Fund Healthcare “Neophytos Chandriotis”

The Solidarity Fund Healthcare «Neophytos Chandriotis» has been in operation from September 2016. Related information can be found on the University’s website at <http://ucyweb.ucy.ac.cy/tamioallilegiis/kanones-teli-dorees/kanones>

## STUDENT LIFE

### Student Union

The Student Union of the University of Cyprus was founded in 1993. Its highest body is the General Assembly and its executive body is the Administrative Council, which has 21 members elected annually by its members. Every student becomes a member of the Student Union upon registration. The Student Union is represented in all Governing Bodies (Council, Senate, Departmental and Faculty Boards).

It has a record of rich and varied activity, guided by the struggle for reunification of Cyprus and its people, peace and democracy, student problems and socio-cultural needs. Activities are directed to both its members and society at large.

### Sports

Sports has very rightly been called the greatest social phenomenon of the 20th century. It is in this spirit that the Sports Centre hopes to make its contribution to Cypriot society at every opportunity available. In order to encourage the University community (students and personnel) to participate in sports activities, a wide variety of activities is offered and the opening hours of the sports facilities have been extended as follows:

- Daily, from 07:30 to 22:00 and on Saturdays from 10:00 to 16:00

The sports programme is divided into the following categories:

#### Recreational Sports

This group of activities is for people who want to improve their overall level of physical fitness. The aim of the University is to make sports an inseparable part of university life.

#### Internal Championships

Internal championships are open to the entire University community (undergraduate and postgraduate students, academic and administrative personnel). Emphasis is placed on participation as much as winning. They offer a way to improve overall physical fitness, they develop skills and techniques in a variety of sports, and they are fun.

International regulations apply to all matches/competitions. The University appends its own, stricter regulations related to discipline, since the Sports Centre respects and enforces Olympic principles.

All games are moderated by referees from official sports associations in Cyprus. The Sports Centre is fully responsible for the organization and supervision of all matches/competitions.

#### Competitive Sports

This programme is designed for those who take sports more seriously and for those who wish to compete as members of the University teams. Experienced coaches oversee the training of these teams. University teams participate in the following competitions:

- Cyprus Association of University Sports Championships
- International Tournaments in Cyprus and abroad
- Pan-Hellenic Championships (EATE)
- European Championships (EUSA)
- World Championships (FISU)

#### Student Sports Clubs

The University of Cyprus offers the following basic student sports clubs:

- Squash
- Futsal
- Table Tennis

- Skiing
- Scuba Diving

### Elective Sports Courses

- Volleyball
- Football
- Tennis
- Basketball
- Judo
- Lifelong Fitness
- Squash

### Student Clubs

There are 23 student clubs at the University of Cyprus, involved in educational, cultural, artistic and entertainment activities. Students wishing to form a club must draft a statute, which must then be approved by the University authorities. The "Club Evening" is a yearly event organized by the clubs' coordination committee at which students have the opportunity to learn about the activities of the various clubs from their representatives and can register in the clubs of their preference.

The Student Life Office of the Academic Affairs and Student Welfare Service offers support in the formation and functioning of the clubs. There are also periodic workshops related to administrative and communication matters which aim to develop leadership abilities and improve communication and administrative skills.

### List of Clubs

- Archaeological Club
- Art
- Cyprus Association for Special Education
- Dance
- Environmental
- International Students Club
- Film
- IEEE
- Journalists
- Orthodox and Hellenic Tradition
- Photoclub
- Psychology
- Sailing
- "Terpsichorian" Music Group
- Theatre
- Fencing
- Sociology
- Chess Club
- Volunteer
- Greek Language and Foreign Civilizations
- Philosophy
- Handball
- Law

## STUDENT MOBILITY

### ERASMUS + programme (2021-2027)

Erasmus+ is the European programme for the support of education, training, youth and sport in Europe. Its budget of 26,2 million Euro for the period 2021-2027 will give the opportunity to more than 10 million Europeans to study, train, cooperate, teach and have an experience abroad. Erasmus+ gives opportunities to a wide range of individuals and organizations.

The institutions, which are holders of the Erasmus Charter for Higher Education (ECHE) for the period 2021-2027, may apply for participation in Mobility in the Higher Education Sector, giving the opportunity to students, young graduates and staff to realize exchange periods abroad in the framework of Key Action 1, between Programme and Partner countries.

Participating countries in the mobility activities are all programme and partner countries.

The following mobility activities can be realized within the framework of this type of mobility projects:

- Student Mobility for studies.
- Student and young graduates' mobility for traineeships.
- Academic staff mobility for teaching.
- Mobility of staff for training.
- Blended Intensive Programmes.

The above mobility activities can be realized between programme countries or form a programme country to a partner country (partner countries are divided in regions)

For more information about the Erasmus+ programme you may contact the Mobility Office of the International Relations Service ([erasmus@ucy.ac.cy](mailto:erasmus@ucy.ac.cy), tel: +357 22894281).

### Other Student Exchanges

Within the framework of bilateral agreements of cooperation, signed between the University of Cyprus and other institutions, students have the opportunity to study abroad at collaborating universities.

For more information on student exchange programmes, please contact the Mobility Support Office of the International Relations Service ([erasmus@ucy.ac.cy](mailto:erasmus@ucy.ac.cy)).

## UNIVERSITY OF CYPRUS RADIO STATION

UCY Voice, the Radio Station of the University of Cyprus, was established in order to promote the work of the Institution, to provide information to the members of the university community and to give voice to the students. It broadcasts at 95,2 fm from the website at [www.ucyvoice.ucy.ac.cy/en](http://www.ucyvoice.ucy.ac.cy/en) and from mobile app.

All members of the university community - students, professors, alumni and administrative staff - can become radio producers at UCY Voice. UCY Voice organizes seminars and workshops for the training and education of radio producers on topics such as media ethics, human

rights, cultural creativity etc.

UCY Voice broadcasts on a 24-hour basis and its programmes cover the spectrum of information and entertainment.

The University's aim is the development of students' creativity, the cultivation of free speech and thought and the establishment of UCY Voice as a means of free expression.

### **SCHOOL OF MODERN GREEK**

The School of Modern Greek (SMG) was established in 1998 having as a main academic purpose the teaching of Modern Greek as a second/foreign language and the Greek culture. The lessons are targeted to adults, non-native speakers of Greek from within or outside the academic community.

Since 2014 the SMG offers the six language levels according to the Common European Framework for the Languages, A1, A2, B1, B2, C1, C2 in intensive (12 hours X 13 weeks), non-intensive (6 hours X 26 weeks) and intensive summer (25 hours X 4 weeks) courses. The SMG offers Greek Language courses tailored to specific needs (Greek and Cypriot expatriates, professional groups, etc.).

Upon successful completion of every programme, students are awarded a certificate. The B2 (old 3rd) and C1 (old 4th) levels are recognized by the Cyprus Government as Advanced and Proficiency respectively. The students of the UCY account for 9 or 12 ECTS depending on the programme. All students enrolled in the SMG are entitled to use the library, the computer laboratories and the sports facilities of the University of Cyprus.

The SMG is located at 75 Kallipoleos Avenue, 1678 Nicosia.

### **PETRONDAS INSTITUTE OF MODERN GREEK STUDIES**

Since 2012 the Modern Greek Studies Research Centre - Petrondas Institute, at the University of Cyprus has been actively engaged in the promotion of Modern Greek scholarship. The Centre's main goal is the organization and implementation of research projects connected to the study of the Greek culture and the promotion of its research findings through events, talks, conferences, open lectures, film screenings and theatrical performances. Through its collaborations with other research centers, it has established itself as an academic space for the creative synergy between academics, students, researchers and writers. The Modern Greek Studies Research Centre is housed in an apartment donated by Christos and Eugenia Petrondas and is located at 30 Nikodimou Mylona Street (3rd floor).



# Faculties and Departments





# Faculties and Departments

The University consists of eight faculties:

- **The Faculty of Economics and Management**

with three departments, the Economics Research Centre and the Centre for Banking and Financial Research.

- **The Faculty of Engineering**

with four departments, the International Water Research Institute "NIREAS", KIOS Research Centre for Intelligent Systems and Networks, Research Centre for Sustainable Energy and the EMPHASIS Research Centre.

- **The Graduate School**

- **The Faculty of Humanities**

with three departments and the Language Centre.

- **The Faculty of Letters**

with three departments, the School of Modern Greek, the Archaeological Research Unit and the Petrondas Institute of Modern Greek Studies.

- **Medical School**

with the Center of Excellence in Biobanking and Biomedical Research.

- **The Faculty of Pure and Applied Sciences**

with five departments, the Molecular Medicine Research Centre and the Oceanography Centre.

- **The Faculty of Social Sciences and Education**

with four departments, the Centre for Applied Neuroscience and the Centre for Gender Studies.

# Postgraduate Programmes/Degree/Programme

## FACULTY OF ECONOMICS AND MANAGEMENT

### DEPARTMENT OF ACCOUNTING AND FINANCE

MBA	Business Administration (MBA Part and Full Time - Interdepartmental)
M.Sc./Ph.D.	Finance
M.Sc.	Financial Economics (Interdepartmental)

### DEPARTMENT OF BUSINESS AND PUBLIC ADMINISTRATION

Ph.D.	Business Administration
MBA	Business Administration (MBA Part and Full Time) ( Interdepartmental)
M.Sc.	Human Resource Management
M.Sc.	Data Science (MDS) (Interdepartmental)(in English)

### DEPARTMENT OF ECONOMICS

M.Sc.	Business Economics (Technology Innovation Management and Entrepreneurship - TIME MBE) (Joint with University of Crete and Wageningen University the Netherlands)
M.Sc.	Economic Analysis
Ph.D.	Economics
M.Sc.	Financial Economics (Interdepartmental)
M.Sc.	Monetary and Financial Economics

## FACULTY OF ENGINEERING

### DEPARTMENT OF ARCHITECTURE

Ph.D.	Architecture
M.Eng./M.Sc.	Energy Technologies and Sustainable Design (Interdepartmental)
M.Sc.	Conservation and Restoration of Historic Buildings and Sites (Interdepartmental) (Joint with History and Archaeology Department and Civil and Environmental Engineering Department of the University of Cyprus)

### DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

M.Eng./M.Sc./Ph.D.	Civil Engineering
M.Eng./M.Sc.	Civil Engineering/Construction and Transport Infrastructure Management
M.Eng./M.Sc.	Civil Engineering/Earthquake Engineering
M.Eng./M.Sc.	Civil Engineering/Geotechnical Engineering
M.Eng./M.Sc.	Civil Engineering/Novel and Traditional Building Materials
M.Eng./M.Sc.	Civil Engineering/Structural Analysis
M.Sc.	Conservation and Restoration of Historic Buildings and Sites (Interdepartmental) (Joint with Architecture Department and History and Archaeology Department of the University of Cyprus)
M.Eng./M.Sc.	Energy Technologies and Sustainable Design (Interdepartmental)
M.Eng./M.Sc./Ph.D.	Environmental Engineering
M.Eng.	Petroleum Engineering

### DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

M.Eng./M.Sc./Ph.D.	Computer Engineering
M.Eng./M.Sc./Ph.D.	Electrical Engineering
M.Eng./M.Sc.	Energy Technologies and Sustainable Design (Interdepartmental)
M.Sc.	Intelligent Critical Infrastructure Systems (in collaboration with "KIOS" Research and Innovation Center of Excellence and Imperial College London) (in english language)

### DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

M.Sc./Ph.D.	Advnaced Materials and Nanotechnology
M.Eng./M.Sc.	Energy Technologies and Sustainable Design
M.Sc./Ph.D.	Mechanical and Manufacturing Engineering

## FACULTY OF HUMANITIES

### DEPARTMENT OF ENGLISH STUDIES

- Ph.D. English Literature and Comparative Cultural Studies
- Ph.D. Linguistics
- M.A. Teaching English as a Foreign Language
- M.A. Theoretical and Applied Linguistics
- Ph.D. Translation Studies

### DEPARTMENT OF FRENCH AND EUROPEAN STUDIES

- Ph.D. French Studies
- M.A. Teaching French as a Foreign Language
- M.A./Ph.D. European Studies

### DEPARTMENT OF TURKISH AND MIDDLE EASTERN STUDIES

- M.A./Ph.D. Turkish Studies

## FACULTY OF LETTERS

### DEPARTMENT OF BYZANTINE AND MODERN GREEK STUDIES

- M.A./Ph.D. Byzantine Studies and the Latin East (Interdepartmental)
- M.A./Ph.D. Modern Greek Studies

### DEPARTMENT OF CLASSICS AND PHILOSOPHY

- M.A./Ph.D. Classical Studies
- M.A. European Master in Classical Cultures (Joint with Universities of Greece, Austria, Germany, France, Italy, Spain, Polonia and Turkey)

### DEPARTMENT OF HISTORY AND ARCHAEOLOGY

- M.A./Ph.D. Ancient History
- M.A./Ph.D. Byzantine Studies and the Latin East (Interdepartmental)
- M.Sc. Conservation and Restoration of Historic Buildings and Sites (Interdepartmental) (Joint with Architecture Department and Civil and Environmental Engineering Department of the University of Cyprus)
- M.A. Field Archaeology on Land and Under the Sea
- M.A./Ph.D. Mediterranean Archaeology from Prehistory to Late Antiquity
- M.A./Ph.D. Modern and Contemporary History (19th-20th Century)
- Ph.D. Traditional Culture (16th-20th Century)

## FACULTY OF PURE AND APPLIED SCIENCES

### DEPARTMENT OF BIOLOGICAL SCIENCES

- M.Sc./Ph.D. Biodevistry and Ecology
- M.Sc./Ph.D. Biomedical Sciences
- M.Sc. Molecular Biology and Biomedicine

### DEPARTMENT OF CHEMISTRY

- M.Sc./Ph.D. Chemistry

### DEPARTMENT OF COMPUTER SCIENCE

- M.Sc. Advanced Information Technologies (Professional Programme)
- M.Sc. Cognitive Systems (Joint with Psychology Department and Open University of Cyprus)
- M.Sc./Ph.D. Computer Science
- M.Sc. Data Science (MDS) (Interdepartmental) (in English)

## DEPARTMENT OF MATHEMATICS AND STATISTICS

M.Sc.	Applied Statistics
M.Sc.	Mathematical Sciences
Ph.D.	Mathematics (Applied or Pure)
Ph.D.	Statistics
M.Sc.	Data Science (MDS) (Interdepartmental) (in English)

## DEPARTMENT OF PHYSICS

M.Sc./Ph.D.	Physics
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## FACULTY OF SOCIAL SCIENCES AND EDUCATION

### DEPARTMENT OF EDUCATION

M.A./Ph.D.	Curriculum Studies, Teaching and Comparative Education
M.A./Ph.D.	Educational Administration and Evaluation
M.A./Ph.D.	Gender Studies (Joint with the Centre of Gender Studies Equality and Empowerment)
M.A.	Language Pedagogy
Ph.D.	Learning in Natural Sciences and Environment
M.A.	Learning in Natural Sciences and Environment/Learning in Natural Sciences
M.A.	Learning in Natural Sciences and Environment/Environmental and Sustainability Education
M.A./Ph.D.	Mathematics Education
M.A./Ph.D.	Pedagogical Sciences -Multiculturalism, Migration and Decolonial Education
M.A./Ph.D.	Pedagogical Sciences - Educational Technology
Ph.D.	Language and Education
M.A./Ph.D.	Pedagogical Sciences - Preschool Education
Ph.D.	Pedagogical Sciences - Religious Education
Ph.D.	Pedagogical Sciences - Sociology of Education
M.A./Ph.D.	Pedagogical Sciences - Sports Pedagogy
Ph.D.	Pedagogical Sciences - Theory and Philosophy of Education
M.A./Ph.D.	Special and Inclusive Education

### DEPARTMENT OF LAW

LL.M./Ph.D.	Law
LL.M.	Law - Criminal Justice and Human Rights
LL.M.	Law - European Commercial Law
LL.M.	Law - European Public Law

### DEPARTMENT OF PSYCHOLOGY

M.Sc.	Cognitive Systems (Joint with Computer Science Department, and Open University of Cyprus)
Ph.D.	Clinical Psychology
M.A.	Cognitive - Educational Psychology
Ph.D.	Psychology
M.A.	School Counseling and Guidance (Joint with University of Athens)
M.A.	School Psychology (Applied Programme)
M.A.	Social Developmental Psychology

### DEPARTMENT OF SOCIAL AND POLITICAL SCIENCES

M.A.	Political Sciences - European Politics
M.A.	Political Sciences - International Relations
Ph.D.	Political Sciences
Ph.D.	Sociology
M.A.	European Master in Human Rights and Modernization (Interdepartmental) (in English language) (Joint with 41 European Universities from EU Member States)

**Note:** The content of the Table of Postgraduate Programmes was submitted by the UCY Graduate School.



# Deans/Deputy Deans/Chairpersons of Departments

## FACULTY OF ECONOMICS AND MANAGEMENT

**Dean: Andreas Charitou**  
**Deputy Dean: Costas Hadjiyiannis**

### CHAIRPERSONS

ACCOUNTING AND FINANCE	George C. Hadjinicolas
BUSINESS AND PUBLIC ADMINISTRATION	Andreas Soteriou
ECONOMICS	Sofronis Clerides

## FACULTY OF LETTERS

**Dean: Martin Hinterberger**  
**Deputy Dean: Spiridonas Tzounakas**

### CHAIRPERSONS

BYZANTINE AND MODERN GREEK STUDIES	Marinos Pourgouris
CLASSICS AND PHILOSOPHY	Georgios Xenis
HISTORY AND ARCHAEOLOGY	Angel Nicolaou-Konnari

## FACULTY OF ENGINEERING

**Dean: Charalambos D. Charalambous**  
**Deputy Dean: Loucas Louca**

### CHAIRPERSONS

ARCHITECTURE	Nadia Charalambous
CIVIL AND ENVIRONMENTAL ENGINEERING	Dimitrios Loukidis
ELECTRICAL AND COMPUTER ENGINEERING	Chrysostomos Nicopoulos
MECHANICAL AND MANUFACTURING ENGINEERING	Theodora Kyratsi

## MEDICAL SCHOOL

**Dean: Ioannis Giapintzakis**  
**Deputy Dean: Georgios Hadjigeorgiou**

## FACULTY OF PURE AND APPLIED SCIENCES

**Dean: Epameinondas Leontidis**  
**Deputy Dean: Leontios C. Kostrikis**

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Faculty of  
**ECONOMICS  
AND MANAGEMENT**



## DEPARTMENTS

Accounting and Finance

Business and Public  
Administration

Economics



# Department of Accounting and Finance

[www.ucy.ac.cy/afn](http://www.ucy.ac.cy/afn)

The Department of Accounting and Finance offers a comprehensive curriculum, which, on the one hand, provides students with a broad knowledge in the diverse area of business administration and, on the other hand, specialized in-depth knowledge in the disciplines of Accounting and Finance.

## Introduction

The business environment is rapidly changing. World markets are becoming increasingly global, organizations are merging, restrictions on trading transactions are being lifted and competition is ever more intense. Information technology creates an innovative environment that facilitates the delivery of a new range of services, the direct exchange of information, and the execution of transactions and agreements. In recent decades, developed countries have shifted their business focus from manufacturing to services, while less developed economies are also changing, as they attempt to fill in the resulting gap in the manufacturing industry. The recent economic crisis, which has affected the services sector and more severely so the financial services industry, is now rapidly changing the legal, business and economic environments of all affected countries.

In these challenging times, only those managers who can anticipate, understand and effectively adapt to the challenges and demands of today's business environment will be able to lead their organizations to success. Those who fail to act on or respond to these changes will expose their organizations to risk, including their very survival. The ongoing economic crisis of the last decade has revealed the importance of redefining business values and adhering to strict ethical codes in order to regain investor confidence.

In response to the challenging environment facing organizations today, the Department of Accounting and Finance (AFN) offers programmes that will arm its graduate students with the skills and knowledge necessary to advance in their careers and eventually lead their organizations to financial success. The Department offers programmes that lead to Master (M.Sc.) and doctoral (Ph.D.) degrees in Finance. In addition, in cooperation with the Department of Business and Public Administration, the Department offers a Master degree in Business Administration (MBA); and jointly with the Department of Economics a Master degree in Financial Economics. The curricula for the above degree programmes are similar to those offered in top universities in Europe and North America. The Department is currently preparing and will soon offer a new Master degree programme in Accounting.

## Graduate Programmes

### 1. M.Sc. Programme in Finance

In this one-and-a-half-year programme, students are offered an education in finance that is both theoretically anchored and practically oriented. They obtain rigorous skills and applied training in quantitative and empirical methods in finance in the following areas: corporate finance and capital investment analysis; capital and derivative markets and risk management; and investment management and security analysis. The programme, which is outlined below, requires the completion of 90 ECTS.

	ECTS
<b>First Year</b>	
<b>Fall Semester</b>	
AFN 515 Basic Accounting*	2
AFN 521 Financial Theory	7
AFN 522 Investments	7
AFN 525 Options and Futures	7
AFN 626 Financial Analysis and Capital Market Research	7
<b>Total:</b>	<b>30</b>
<b>Spring Semester</b>	
18 ECTS from the following list of courses**:	
AFN 520 Managerial Economics or another advanced course	6
AFN 523 Advanced Quantitative Business Methods	6
AFN 528 Advanced Capital Budgeting	6
At least 12 ECTS from the following list of courses:	
AFN 524 Financial Modeling	6
AFN 627 Theory and Methodology in Finance & Accounting	6
AFN 529 Applications of Neural Networks in Business	6
AFN 530 Seminar on Cyprus Economy, Banking & Financial Markets	6
AFN 531 International Financial Management	6
AFN 532 Financial Optimization and Decision Analysis	6
AFN 533 Bank Financial Management	6
AFN 534 Financial Risk Management	6
AFN 535 Seminar on the Theory of Derivatives	6
AFN 536 Business Valuation	6
AFN 537 Theoretical Topics in Finance	6
AFN 538 Applied Topics in Finance	6
Other electives/advanced courses***	
<b>Total:</b>	<b>30</b>
<b>First Year: Total:</b>	<b>60</b>



## Second Year

### Fall Semester

Other elective/advanced course***	6
Thesis	24
<b>Second Year: Total:</b>	<b>30</b>

#### Notes:

- \* Students with no background in accounting must take AFN 515 Basic Accounting (2 ECTS). AFN 541-542 Advanced Topics (3 ECTS) is mandatory and helps students prepare their thesis.
- \*\* A maximum of one course may be waived depending on the student's prior experience/education.
- \*\*\* Other elective courses are subject to approval by the Director of Postgraduate Studies. Elective courses are not offered unless at least five students have pre-registered.

## Research Thesis

During the third semester of the M.Sc. Programme, students must complete a 24 ECTS thesis. The following regulations and timeframe apply:

- Students select an Academic Thesis Advisor, who must be approved by the Departmental Board before the end of the first academic year, by 15 June.
- By 15 September the Departmental Board will approve a two-member Committee for the evaluation of the thesis. The Committee may include one academic member from outside the Department or the University.
- By 15 September, students must submit an extended thesis research proposal (5-10 pages) for the signed approval of the Committee.
- By 10 December, the thesis must be submitted to the two-member Committee Head, who will schedule a date for the thesis defense. Under special circumstances, the Postgraduate Studies Committee may grant an extension.

## Coordinators of M.Sc. Programme in Finance

**S. Martzoukos, Associate Professor**

**G. Nishiotis, Associate Professor**

### 2. Master Of Business Administration (MBA)

(full-time and part-time study) (Interdepartmental)

The programme curriculum is described on page 56.

### 3. Doctoral Programme in Finance

At present, the doctoral programme offers specialization in Finance. Students, who wish to combine research interests in Finance with Accounting, should consult with the Ph.D. Programme Coordinators. The following description refers to the programme in Finance.

Students are expected to complete at least 90 ECTS of coursework as part of the doctoral programme. Admittance to doctoral candidacy requires:

- Completion of coursework

- Successful completion of the comprehensive exams
- Preparation of a research study

Doctoral students are expected to complete the above three requirements by the end of the fifth semester. Under special circumstances, the Departmental Board may approve extension to the end of the sixth semester, but the comprehensive exams must be successfully completed by the end of the fifth semester. The Ph.D. degree is granted upon the successful defense of a doctoral dissertation, which must be a new and substantial contribution to the relevant academic literature. The dissertation must be defended orally before a 5-member faculty Committee. The minimum time required for the completion of a Ph.D. is three years, and the minimum time required for the completion of the doctoral dissertation is two years.

## Doctoral Student Advising

After a student is admitted to the Ph.D. programme, the Graduate Studies Committee and the Directors of the Ph.D. programme provide guidance to the student regarding course requirements and preparation for the comprehensive exams. Each student's programme is individually tailored to meet the student's specific profile and area of concentration. Upon completion of the coursework (or most of it), the student may take the comprehensive exams. Following successful taking of these exams, the student must then select the thesis advisor.

## Coursework

The first 2 semesters of the doctoral programme are similar to those of the M.Sc. programme. The courses AFN 521 (Financial Theory), AFN 522 (Investments), AFN 525 (Options and Futures), AFN 626 (Financial Analysis and Capital Market Research), AFN 627 (Theory and Methodology in Accounting and Finance), AFN 661 (Advanced Corporate Finance), AFN 662 (Advanced Asset Pricing), AFN 663 (Advanced Methods in Empirical Finance) are required (55 ECTS). The Ph.D. student will also select 36 ECTS from other master courses (of the department, or after approval of the economics, mathematics or statistics department, etc.), according to his interests and research endeavors. It is expected that all students during their first and second year acquire knowledge in mathematics, in modelling, in optimization and mathematical programming, in probability theory and statistics (a graduate or two undergraduate courses), in stochastic processes and in econometrics (two econometric theory courses). It is also expected that all students will have sufficient knowledge of computer programming (like in C/C++).

Holders of a master degree in a field relevant to the doctoral programme, may waive some coursework after the approval of the Department Council. It is expected that all doctoral students, according to their previous graduate studies, complete a minimum of 45-60 ECTS of coursework at the University of Cyprus.

## Pre-Dissertation Research

During the first summer of studies, students are expected to prepare a research project under the supervision of a Faculty Advisor. The Department will appoint an advisor suited to the student's research interests. The research project must be written up and must include a report of the original contribution of the student's work. The student must complete the project by the third semester of studies, when he will submit it for approval to a three-member faculty Committee, one member of which is the Faculty Advisor. The Department Chairperson, in consultation with the Advisor, will appoint the other two committee members. This project may count as fulfilling requirements of another course, or may count as an independent study course. This requirement is waived for students who have completed a Master's thesis.

## Comprehensive Exam

Before entering doctoral candidacy, students must demonstrate adequate knowledge of their main and related fields, as well as the relevant academic literature. To this end, students must take the comprehensive exam.

This exam (completed at the latest by the end of the sixth semester in the doctoral programme) must cover the field of studies and methodology. In line with international practice, this requirement is fulfilled by 3-hour exams in each of the following topics:

- Financial Theory and Investments
- Financial Analysis and Capital Market Research
- Futures and Options
- Econometrics

The Committee of Postgraduate Studies appoints an Academic Committee (that must be approved by the Department Council), that will administer the written exams. Each topic is graded by two faculty members; and faculty members may grade no more than two topics for any student. Students must pass all the comprehensive exams to continue to doctoral candidacy. Students who fail more than one topic must retake the entire exam, i.e., all four topics. Doctoral students may sit for the exams a maximum of two times. Students who fail one topic only may retake the relevant exam on that topic alone.

The comprehensive exam is graded as Pass or Fail, based on the recommendation of the Academic Committee. Students, who (on their comprehensive exams) fail to demonstrate ability for successful doctoral research, may be granted a Master's degree following the Department recommendation.

## Doctoral Candidacy and Dissertation Requirements

After formal entrance to doctoral candidacy, students are expected to devote their efforts completely towards their dissertation research, which will initially result in a dissertation proposal in coordination with their Research Advisor (students wishing to change Research Advisor

after the successful completion of their pre-dissertation research may apply to the Director of Postgraduate Programmes).

Doctoral students typically remain in candidacy for a period of two additional years. At the start of this period, they must submit and defend their dissertation proposal, and at the end they submit and defend their completed dissertation before an approved academic committee.

## The Dissertation Proposal

The dissertation proposal must be defended before a three-member academic Committee, which is appointed by the Department Chairperson in consultation with the Research Advisor. The Research Advisor will chair the Committee. The proposal must contain: a complete and detailed definition of the problem under investigation; a comprehensive synopsis of the relevant literature and the unanswered research questions; an explanation of the relationship between the existing literature and the thesis topic as well as the expected new contribution. It should also provide evidence that the proposed project is feasible within a reasonable timeframe; this can be demonstrated through partial completion of the proposed research and fulfilment of some intermediate goals.

## The Dissertation

The completed dissertation must be original research that makes a significant contribution to the academic literature. The dissertation will be defended before a five-member academic Committee, appointed by the Committee of Postgraduate Studies in consultation with the Research Advisor. Three of the Committee members (the Research Advisor included) will be faculty of the Department. Two of the Committee members may belong to other departments of the University of Cyprus, and one may belong to the faculty of another university.

## Doctoral Candidates/Requirements

Students preparing for the comprehensive exam must register for the course AFN 890 (15 ECTS) and, at a later stage, for the AFN 891 Dissertation Proposal Defense (15 ECTS). Doctoral candidates working on their dissertation research must earn at least 120 ECTS covering four research stages (AFN 895, AFN 896, AFN 897, AFN 898 - each course represents 30 ECTS). There are also 15 ECTS partial research stage courses (AFN 881, AFN 882, AFN 883, AFN 884, AFN 885, AFN 886, AFN 887, and AFN 888), should the student wish to take extra courses (beyond the required ones) during the dissertation stages, or take AFN 890 (comprehensive exams) during the first dissertation stage. If, after having taken 120 ECTS of dissertation stages the doctoral dissertation is not finished, the student may enrol in additional writing stages; for this reason there are writing courses credited with 30 ECTS (AFN 791, AFN 792, AFN 793, AFN 794), and writing courses credited with 15 ECTS (AFN 781, AFN 782, AFN 783, AFN 784, AFN 785, AFN 786, AFN 787, AFN 788).

## Suggested Ph.D. Programme

	ECTS
<b>First Year</b>	
<b>Fall Semester</b>	
Same as for the Master's programme	30
<b>Total (ECTS)</b>	<b>30</b>
<b>Spring Semester</b>	
Same as for the Master's programme	30
<b>Total (ECTS):</b>	<b>30</b>
<b>First Year: Total (ECTS):</b>	<b>60</b>
<b>Second Year</b>	
<b>Fall Semester</b>	
Elective/Advanced and Methodology Courses (from the Department as well as other University departments)	30
<b>Total (ECTS):</b>	<b>30</b>
<b>Spring Semester</b>	
AFN 890 Comprehensive Exams	15
AFN 881 Research Stage	15
<b>Total (ECTS):</b>	<b>30</b>
<b>Second Year: Total (ECTS):</b>	<b>60</b>
<b>Third Year</b>	
<b>Fall Semester</b>	
AFN 882 Research Stage	15
AFN 883 Research Stage	15
<b>Total (ECTS):</b>	<b>30</b>
<b>Spring Semester</b>	
AFN 884 Research Stage	15
AFN 885 Research Stage	15
<b>Total (ECTS):</b>	<b>30</b>
<b>Third Year: Total (ECTS):</b>	<b>60</b>
<b>Fourth Year</b>	
<b>Fall Semester</b>	
AFN 886 Research Stage	15
AFN 887 Research Stage	15
<b>Total (ECTS):</b>	<b>30</b>
<b>Spring Semester</b>	
AFN 888 Research Stage	15
AFN 781 Writing Stage	15
<b>Total (ECTS):</b>	<b>30</b>
<b>Fourth Year: Total (ECTS):</b>	<b>60</b>

## Coordinators of Doctoral Programme

Andreas Charitou, Professor  
Lenos Trigeorgis, Professor

## Courses Description

### AFN 515 Basic Accounting (2 ECTS)

The course will show students the uses of accounting in a business environment. It covers topics on the accounting cycle of the enterprise, preparation and presentation of the three basic financial statements. It is graded with Pass/Fail.

### AFN 516 Use of Software in Finance (3 ECTS)

The course presents the databases and software packages most useful to the financial manager/analyst of a private or public enterprise/organization. The course is directed towards new Master students. It covers databases (like Compustat / Global Vantage, Datastream, CRSP, IDES) and software (like Matlab, SAS). It is graded with Pass/Fail.

### AFN 520 Managerial Economics (6 ECTS)

The course covers a wide variety of topics to explain and illustrate the wider economic environment of the corporation, examining it from the perspective of the neoclassical economic theory, the theory of the firm, and industrial organization. Topics include: the utility theory, indifference curves, income and substitution effects, demand functions and price elasticity of demand, cross elasticity and income elasticity, production functions and cost functions, returns to scale and returns to scope, general equilibrium, pareto efficiency, basic principles of industrial organization, elements of game theory, trigger pricing strategies, etc.

### AFN 521 Financial Theory (7 ECTS)

The course presents the theory underlying financial decisions and corporate policy. It covers discounted cash flow and contemporary methods of capital budgeting, risk and uncertainty, mean-variance portfolio choice, capital asset pricing models and arbitrage pricing theory, efficient markets, capital structure and dividend policy, basic option pricing, corporate restructuring and mergers and acquisitions.

### AFN 522 Investments (7 ECTS)

The course covers the basic principles of investment analysis and valuation, with emphasis on security analysis and portfolio management in a risk-return framework. Security analysis focuses on whether an individual security is correctly valued in the market (i.e., it looks for mispriced securities). Portfolio management deals with efficiently combining securities in a portfolio tailored to the investor's preferences and monitoring/evaluating the portfolio. The course covers both the theory and practical aspects of investments.

### AFN 523 Advanced Quantitative Business Methods (6 ECTS)

The course introduces business students to various statistical topics useful in Business, such as Linear Regression, Probit and Logit, Discriminant analysis, Factor analysis, and Structural Equation modeling. In addition to the theoretical coverage of these topics, students work with practical applications in business (Finance, Accounting, Management Science, etc.) and use software like SPSS and SAS. During the course students are required to complete a final project, in which they perform a statistical analysis with real data.

### AFN 524 Financial Modeling (6 ECTS)

The course covers financial models for Hedging and risk management, asset allocation, multi-period portfolio planning, option pricing, swaps, and bonds and mortgage-backed securities. emphasis is on the use of statistics, optimization, and simulation for the solution of financial planning problems, with



wide implementation of spreadsheets and high-level modeling languages (like GAMS), and spreadsheets.

#### **AFN 525 Options and Futures (7 ECTS)**

The course studies the pricing and use of derivatives such as options and futures contracts. The no-arbitrage principle and its use in pricing futures contracts and option restrictions are explained first, followed by the binomial-tree approach and the Black-Scholes model. Various extensions and applications are discussed, including (1) pricing options on stock indices, currencies and futures; (2) risk management; (3) pricing options embedded in corporate securities (e.g. equity, callable bonds, warrants and convertibles); (4) fixed-income (interest-rate) derivatives.

#### **AFN 626 Financial Analysis and Capital Market Research (7 ECTS)**

The course provides a comprehensive analysis of financial information as an aid to decision making (e.g. in investing, lending and managerial decisions). The course covers (1) business analysis tools such as business strategy analysis, accounting and financial analysis, prospective analysis (forecasting and valuation); (2) applications in credit analysis and bankruptcy prediction, security analysis, corporate financing decisions, such as dividend policy, capital structure, M&A and management communication; (3) international financial analysis and contemporary issues in financial analysis.

#### **AFN 627 Theory and Methodology in Finance and Accounting (6 ECTS)**

The course covers contemporary methodologies for empirical research in Finance and Accounting. Through the study and analysis of contemporary research, it highlights the role of financial and other information in setting equity prices. In addition, it covers topics such as: the role of financial analysts in equity markets, the relation between accounting rules and equity markets, the effect of income manipulation on investors and managers, and the measurement of risk.

#### **AFN 528 Advanced Methods of Capital Budgeting (6 ECTS)**

The course reviews traditional methods of capital budgeting and their deficiencies, and introduces modern investment valuation thinking and tools involving flexibility and optimal exercise of options under uncertainty. It places emphasis on the use of the real options methodology in both operating and strategic decisions, applied through the use of binomial trees and Monte Carlo simulation in the context of real-life problems and cases.

#### **AFN 529 Applications of Neural Networks to Business (6 ECTS)**

This course offers a broad treatment of the subject of Artificial Neural Networks. The material includes: introduction to neural networks, the backpropagation training algorithm and its variants, the RBF training algorithm, probabilistic neural networks, Kohonen's SOFM, LVQ's training algorithms, support vector machines. The wide applicability of the material developed in this course is demonstrated through applications to a number of problems drawn from various business areas. Students put the theory into practice through a research project in finance or accounting.

#### **AFN 530 Seminar on the Economy, the Banking System, and the Financial Markets of Cyprus (6 ECTS)**

In the seminar a wide range of topics related to the economy, the banking system, and the financial markets of Cyprus are analyzed from the perspective of two significant events currently under development: the globalization of economies and international markets, and the accession of Cyprus to the European Union. These developments prescribe the prospects and challenges of the economy and the financial system of Cyprus.

#### **AFN 532 Financial Optimization and Decision Analysis (6 ECTS)**

The course covers topics of mathematical programming and financial optimization and decision theory that constitute basic research tools in finance and economics. From the perspective of theory and model building, it covers Linear programming, duality theory, unconstrained and constrained non-linear programming, stochastic programming, and large-scale programming. There is particular emphasis on the use of computers for problem solving.

#### **AFN 533 Bank Financial Management (6 ECTS)**

The continuously changing environment – increased competition, liberalization, globalization of markets, new capital market products – demands that banks revise their traditional financial management. The course presents financial principles, strategies, and techniques that help banks succeed in this financial environment. After examination of the existing banking environment, bank structure and problems, the course focuses on the measurement and management of interest rate, credit, and currency risks. Students will learn about the measurement and evaluation of bank performance, basic instruments and techniques, asset/liability management, new financial strategies, and integrated decisions for bank management.

#### **AFN 534 Financial Risk Management (6 ECTS)**

This course illustrates the use of financial theory and applied statistics for measuring and managing the risks currently facing multinational corporations and financial institutions. It will discuss: Basel I & II, volatility and value-at-risk, coherent risk measures; simulation of Profit & Loss distributions using Gaussian assumption for equity portfolios and bonds, market risk capital adequacy, linear and non-linear risks; time-varying volatility of market-risk factors, EWMA and GARCH process; extreme financial risks with non-Gaussian distributions, extreme value models; credit risk and rating systems; probability of default, recovery rates, credit risk capital adequacy; methods of Credit Metrics (JP Morgan), distance to default - KMV (Moody's), actuarial approach (Credit Suisse, First Boston); types of operational risk, measurements using Loss Distribution Approach, capital adequacy; mitigating and managing financial risks, capital for unexpected losses, risk transfer/hedging.

#### **AFN 535 Seminar on Derivatives (6 ECTS)**

The course covers advanced topics in Financial Theory, emphasizing contemporary theories of contingent claims pricing, continuous time finance, alternative stochastic processes (geometric Brownian motion, Poisson processes and jump-diffusion, stochastic volatility, stochastic interest rates); numerical methods for option pricing problems with high dimensionality, alternative stochastic process assumptions, and path-dependencies; pricing options on foreign assets with currency risk, Guaranteed Investment Contracts with embedded options; option replication without and with transaction costs.

#### **AFN 537 Advanced Topics in Finance (6 ECTS)**

The course covers advanced theoretical topics in Financial Theory. The specific topic will depend on the interests of the instructor.

#### **AFN 538 Applied Topics in Finance (6 ECTS)**

The course covers special and applied topics in Finance. The specific topic will depend on the interests of the instructor.

#### **AFN 541-2 Advanced Topics (3 ECTS)**

This series introduces graduate students to contemporary research topics. It requires students' attendance and active

participation in presentations of original research by visiting researchers, as well as presentations of critique and analysis of selected research and students' projects. It is graded with Pass/Fail.

**AFN 661: Advanced Corporate Finance (7 ECTS)**

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The aim of the course is to give insights into important topics of corporate finance, overview theories and models and understand issues of asymmetric information, adverse selection, moral hazard and agency problems in the study of optimal capital structure, payout policy and stock repurchases, financial contracting and capital restructuring.

**AFN 662: Advanced Asset Pricing (7 ECTS)**

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The aim of the course is to provide knowledge into choice under uncertainty, discount factors and absence of arbitrage, and overview theories and models of contemporary equilibrium asset pricing, factor pricing and intertemporal decisions from the perspective of both discrete and continuous time.

**AFN 663: Advanced Methods in Empirical Finance (7 ECTS)**

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The aim of the course is to provide understanding of the empirical techniques used most often in the analysis of financial markets and in empirical corporate finance with focus in the study of the statistical properties of asset returns and the efficient markets hypotheses, empirical tests of asset pricing models (CAPM, APT), tests of conditional asset pricing models, event studies and market microstructure econometrics.

## Research Interests of the Academic Staff

• **Andreas Charitou, Professor**

Capital markets research, International financial analysis, Corporate finance & investments, Credit analysis, Governance & executive compensation.

• **Irene Karamanou, Associate Professor**

The relation between capital markets and firm valuation with accounting disclosures, Investment banking, Financial analysts, Institutional ownership and regulation.

• **Spyros Martzoukos, Associate Professor**

Real options, R&D, Capital structure, Portfolio theory, Financial engineering.

• **Andreas Milidonis, Associate Professor**

Credit risk, Executive compensation, Public policy and regulatory issues, Catastrophe risk, Mortality risk.

• **George Nishiotis, Associate Professor**

Empirical asset pricing, International finance, Information disclosure, Corporate governance, Emerging markets.

• **Lenos Trigeorgis, Professor**

Capital budgeting/Real options, Options and futures, Volatility and capital structure, Innovation, strategy and competitiveness.

• **Nikos Vafeas, Professor**

Corporate governance, Corporate social responsibility, Executive remuneration, Executive replacement.

• **Stavros Zenios, Professor**

Financial risk management, the Eurozone banking crisis, Social and financial Reflexivity, Leadership theory and practice under uncertainty, Efficiency of state owned enterprises.

• **Adamos Vlittis, Lecturer**

The role of voluntary and mandatory financial disclosures in the capital markets, and the effect of corporate governance mechanisms and transparency in various business decisions.

• **Marios Panayides, Associate Professor**

Market microstructure, Market efficiency, Econometric techniques, and Industrial organization.

• **Stylianos Papageorgiou, Lecturer**

Banking theory, Institutional design, Political economy.

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### DEPARTMENT SECRETARIAT

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# Department of Business and Public Administration

[www.ucy.ac.cy/bpa](http://www.ucy.ac.cy/bpa)

The Department of Business and Public Administration (BPA) aims to develop competent business executives through its postgraduate programmes of Master in Business Administration (MBA), M.Sc. in Human Resource Management, and the newly launched interdepartmental M.Sc. in Data Science. It also aspires to educate world-class researchers through its Ph.D. programme. Through the training and the abilities they will acquire, Master students will be able to successfully manage their organizations using the latest knowledge and techniques, while Doctoral students will be able to conduct cutting-edge research of an international impact. The Department offers postgraduate studies that emphasize both an understanding of the contemporary business environment and in-depth knowledge of the various functional business areas. Based on the latest curricula of prominent European and North American academic institutions, its postgraduate programmes of studies integrate state-of-the-art principles in Business Administration, with sensitivity to the realities and priorities of the local and regional industries.

The modern business environment is being transformed. Markets are becoming global and intensely competitive, organizations are merging, and regulatory barriers are falling. Information technology has created a virtual business environment where services are rendered, transactions take place, and deals are concluded more effectively and efficiently. The only constant in today's environment is change itself. Astute managers, who anticipate, comprehend, adapt, and act proactively in a timely fashion in this dynamic environment, will lead their enterprises to success. Those who are unable to cope with this change face real threats to the survival of their organizations. The adage "lead, follow or get out of the way" has become particularly relevant for the managers today. In light of these realities, the Department's goal is to provide local and regional leadership in all aspects of business and public administration and to achieve international recognition as a center of excellence in business education and research.

## Research Mission and Research Areas

The faculty of the Department is committed to state-of-the-art research of local and international impact and maintains close contacts with researchers at prominent universities in Europe, North America, and the region. Projects by Department faculty have frequently attracted substantial funds from external sources, with the major ones being various European Union Agencies, the Research Promotion Foundation, and various financial institutions. Research by faculty members focuses on three major areas, namely Management, Operations Management, and Marketing.

Research in **Management** covers various conceptual, methodological, and empirical issues related to the management of modern-day organizations. These issues include traditional areas such as strategy and human resource management, corporate social responsibility, and entrepreneurship, as well as more contemporary areas such as feminist analyses and knowledge-based perspectives of organizations. Social networks, and industrial ecology.

Research in **Operations Management** has both methodological and problem-oriented goals. On the methodological side, projects focus on the development of large-scale computing techniques for the solution of problems in optimization, production and operations planning, logistics and distribution. Particular emphasis is placed on the solution of models for financial planning under uncertainty. Research is also conducted in such areas as service quality, efficiency and effectiveness of financial and banking institutions, and applications of neural networks to business problems.

Research in **Marketing** covers various conceptual, methodological, and empirical issues revolving around the internationalization process of the firm, export stimulation and obstruction, organizational and managerial effects on the firm's export behavior, the exporter-importer working relationship, the design of an environmental marketing strategy, the importance of sales management in successful exporting, the trade-off of standardization versus adaptation of international marketing strategy, the



examination of ethical aspects of marketing, and business performance measurement.

## Study and Research Facilities for Students

Students have access to the computer laboratories of the University for their assignments and research projects. A modern microcomputer laboratory has recently been installed for the students of the Faculty of Economics and Management. Lectures are often supplemented with the use of specialized software.

The University Library receives and is continually enriched with all major international journals and business magazines and books. In addition, the Library maintains databases on international financial information (e.g. Datastream, Compustat, Global Vantage, CRSP, IBES, and the Wall Street Journal Index), all of which are available to students.

## Postgraduate Programmes at the Master's Level

The Department of Business and Public Administration offers postgraduate programmes at the Master's level:

- Master of Business Administration (MBA) (full-time study) (Joint programme)
- Master of Business Administration (MBA) (part-time study) (Joint programme)
- Master's in Human Resource Management (M.Sc. in HRM)
- Master in Data Science (M.Sc. in Data Science)

The Master's Programme in Human Resource Management (M.Sc. in HRM) is offered in the English language and, at a later stage it will also be offered in the Greek language. The programme can be completed in three academic semesters (minimum attendance) or in eight academic semesters (maximum attendance). The programme of study requires completion of at least 96 ECTS. The programme has been designed according to international standards adopted by similar programmes in leading universities abroad. For more information, you can visit the web page <http://www.ucy.ac.cy/mschrm/en/>

The admission criteria for the M.Sc. in Human Resource Management are the following:

- Undergraduate Degree in any field of study – min GPA 7/10 or 2:1 (UK System). Subject of Degree is irrelevant.
- Proof of proficiency in the English language, equivalent at least to level C1 of the Common European Framework of Reference for Languages (CEFR), e.g. through one of the following exams:
  - IELTS Academic 7.0
  - Aptis Advanced C1
  - TOEFL iBT Grade 95
  - IGCSE / GCE Grade B
- Two recommendation letters from academics and/or work supervisors.

- A CV and a Statement of Purpose (max 500 words)
- A personal interview (in Greek and English), to assess the applicant's potential to contribute to the program.

## Programme Curricula

### 1. Master of Business Administration (MBA) (full-time study) (Interdepartmental)

The programme curriculum is described on page 57.

### 2. M.Sc. in Human Resource Management (M.Sc. in HRM)

The Master's Programme in HRM has been designed to offer state-of-the-art knowledge to students concerning the management and development of individuals, teams and organizations. Its main aim is to offer students a challenging, supporting and constructive learning environment, where theoretical perspectives and research insights are critically debated to understand how HR can contribute to the development of organizations of excellence. The programme's defining characteristic is its dual focus on the theory and practice of HRM. Through this focus, the programme will give students a strong background to either go on to study for a Ph.D. in the field or become effective HR practitioners in different organizational settings.

In addition, the programme is well connected within the human resource management industry. In this respect, students will have the opportunity to enrich their knowledge and skills through internships and other activities. Finally, the programme has evening classes to fit the needs of those with other responsibilities. The programme (96 ECTS in total) can normally be completed in three academic semesters. The course requirements consist of 17 courses (total of 75 ECTS with courses ranging from 3-9 ECTS), 6 tool-oriented workshops (total 6 ECTS with workshops carrying 1 ECTS each), and a 15 ECTS Master's thesis. The allocation of courses of this programme during the study period is the following:

	ECTS
<b>September-October</b>	
HRM 530 Principles of Management and Work	3 (14 hours)
HRM 531 Advanced Organization Behavior	6 (28 hours)
HRM 532 Human Resource Management	6 (28 hours)
HRM 565 Leading People	3 (14 hours)
<b>November-December</b>	
HRM 533 Strategic and International Human Resource Management	6 (28 hours)
HRM 534 Employee Selection and Succession Planning	6 (28 hours)
HRM 537 Compensation and Rewards Management	3 (14 hours)
HRM 563 Strategic Management	3 (14 hours)



<b>January-February</b>		
HRM 535	Employee Training and Development	6 (28 hours)
HRM 536	Performance Management	3 (14 hours)
HRM 538	Managing Change	3 (14 hours)
HRM 574	Workshop on Structures, Job Design and Workforce Planning	1 (12 hours)
HRM 576	Workshop on Psychometric Measurements	1 (12 hours)
<b>March-April</b>		
HRM 539	Entrepreneurship, Creativity and Innovation	3 (14 hours)
HRM 540	Quantitative and Qualitative Research Methods	9 (42 hours)
HRM 573	Workshop on Human Resource Information Systems	1 (12 hours)
HRM 575	Workshop on "HR Analytics" and "Evidence-Based" HRM	1 (8 hours)
<b>May-June</b>		
HRM 560	MNCs Employment Systems and Institutions	3 (14 hours)
HRM 561	The Regulatory Framework of HRM	3 (14 hours)
HRM 577	Workshop on Negotiations and Conflict Resolution	1 (12 hours)
HRM 562	Managing Workforce Diversity, Theory and Practice	6 (28 hours)
<b>July-August</b>		
HRM 595	Master Thesis I	5
<b>September-October</b>		
HRM 578	Workshop on HR Business Partnering	1 (8 hours)
HRM 564	Business Ethics and CSR	3 (14 hours)
HRM 596	Master Thesis II	5
<b>November-December</b>		
HRM 597	Master Thesis III	5
<b>TOTAL</b>		<b>96</b>

## Courses Description

### 1. MBA Programme (full-time and part-time)

The courses of the interdepartmental programme are described on page 58.

### 2. M.Sc. in Human Resource Management

#### **HRM 530 Principles of Management and Work (3 ECTS)**

The purpose of this course is to provide an understanding of the nature and role of management and work in various types of organization, as well as to develop the corresponding individual managerial skills. It provides an introduction into how individual, group and organizational factors influence employee behavior, work and in turn the performance of an organization. It is designed to give students a framework for understanding the way organizations function and the behavior of individuals and work groups within them. It also focuses on developing the business skills of students in this context.

#### **HRM 531 Advanced Organizational Behavior and Work (6 ECTS)**

In this course, students will study individual and group processes within organizations in depth. The course adopts an interactive and critical approach to these issues through cases and examples that students will study to understand the multiple factors affecting behavior at the individual, group and organizational levels. Topics covered include psychological contract, employee engagement, commitment, job satisfaction and designing effective organizations.

#### **HRM 532 Human Resource Management (6 ECTS)**

This course introduces students to the theory and practice of Human Resource Management (HRM) in a variety of organizational settings. Issues that will be examined include: the strategic importance of HRM, the role of managers and employees in HRM issues, recruitment, selection, performance appraisal, HR planning, compensation and benefits and training and development. The course aims to provide an overview of the issues related to HRM, their study and their application.

#### **HRM 533 Strategic and International Human Resource Management (6 ECTS)**

This course helps students to think systematically and strategically about managing people and implementing relevant policies to achieve competitive advantage. It addresses human resource topics from a strategic perspective. These key issues are illustrated with case study examples from differing organizational situations. Further, the course emphasizes an international and comparative perspective to the management of human resources. HR topics are discussed within the diverse and changing international business context. Against this context, the course also considers the implications and complexity involved in managing the workforce of multinational companies strategically.

#### **HRM 534 Employee Selection and Succession Planning (6 ECTS)**

This course provides students with necessary knowledge and skills associated with recruiting and selecting the right people in the right jobs at the right time. It covers processes and practices that ensure the most effective selection and utilization of talent, external and internal forces that affect the hiring process, as well as the process of identifying and placing talent and succession management. Emphasis is placed on successfully conducting a job analysis, which identifies the competencies (knowledge, skills, and abilities) necessary for effective job-related selection criteria. Then, the course provides participants

with an understanding of a variety of assessment instruments to select the right persons for the right job.

#### **HRM 535 Employee Training and Development (6 ECTS)**

This course is designed to provide students with the knowledge and skills required to design and deliver programs that ensure the requisite training and development of individuals and groups within organizations, ultimately contributing to the enhanced performance of organizations. Topics covered include the assessment of learning needs at the individual, group and organizational levels; the design of training methodologies appropriate for different types of employees within different organizational contexts; and the evaluation of the effectiveness of training programs. Other issues addressed in this course include critical perspectives in labor utilization, the changing nature of training in organizations and the importance and extent of training investment in the modern global economy.

#### **HRM 536 Performance Management (3 ECTS)**

This course approaches performance management (PM) as a strategic issue in managing the human resources of organizations. It promotes the notion that PM is not a one-off exercise, but a continuous process of identifying, measuring and developing the performance of individuals and groups in ways that promote the implementation of the organization's strategic goals. The course, first discusses the links between PM and strategic planning as well as the advantages and disadvantages of implementing PM systems. Getting into the specifics of designing and implementing effective PM systems, the course then looks at the PM process and discusses issues such as defining performance and choosing a measurement approach; measuring results and behaviors; implementing a PM system; linking PM with employee development and skills; and managing team performance.

#### **HRM 537 Compensation and Rewards Management (3 ECTS)**

This course approaches compensation and rewards as a strategic human resource tool that organizations can leverage as a competitive advantage. It aims at examining compensation and rewards in an organizational and international context to provide students with the knowledge and understanding of environments in which professionals plan, implement and evaluate employee reward policies to support strategic organizational goals. Issues discussed include the diverse approaches to reward management; strategically selecting a competitive reward policy and developing internal pay and structures. The course also discusses the social, legal, ethical and union considerations in managing compensation and rewards, as well as the relevant trends affecting contemporary organizations.

#### **HRM 538 Managing Change (3 ECTS)**

This course aims to provide an introduction to the basic concepts, theories and frameworks relating to organizational change management and to explain how these are relevant for human resource managers. Most organizations operate in environments that change rapidly and their ability to flexibly respond to such changes is defining to their survival and competitiveness. Human resource management therefore needs to adopt a proactive and strategic approach to change management in order to ensure the people's effective transition to the new state of affairs. Topics covered relate to managing the human aspects of change; the leadership of change; managing resistance to change; and political and institutional perspectives on change management. Attention is given to critical issues that should be considered when designing and implementing plans for change, including communication, motivation and involvement, stakeholder

management, sequencing of interventions and preserving change.

#### **HRM 539 Entrepreneurship, Creativity & Innovation (3 ECTS)**

This course uses theories and concepts of entrepreneurship and innovation to explore how effective organizations engage in these two strongly integrated processes. Its purpose is to explain the dimensions of new venture creation and growth and to engage students in an understanding of the process of idea generation and new venture/product development. The course discusses why entrepreneurship is important for individuals, groups and organizations and the role of HRM in promoting it. Then, through the critical analysis of examples, it explores ways in which HRM policies and practices can foster an intra/entrepreneurial culture within different forms of organization.

#### **HRM 540 Quantitative and Qualitative Research Methods (9 ECTS)**

This course aims to provide students with an understanding of the main methods, processes and tools of business research. Its primary aim is to emphasize the diversity of 'research' by discussing the concepts of original vs. applied and quantitative vs. qualitative research in order to highlight the significance of appropriate research methods, instead of 'best' methods. Basic knowledge of methodological approaches is critical to the comprehension of scientific knowledge, the evaluation of empirical studies and the design of research projects. The course is organized in three parts. Part A critically discusses the notion of research and research philosophies; links between theory, hypotheses and variables; research design, sampling and ethical issues. Part B focuses on qualitative research methods and Part C on quantitative research methods. Alternative methods of sampling, collecting and analyzing data are also discussed.

#### **HRM 560 MNCs, Employment Systems and Institutions (3 ECTS)**

This course is designed to discuss how supra-organizational systems and social institutions affect the implementation and effectiveness of organizational HRM policies and practices in local and multinational enterprises. The course aims to provide students with knowledge on the theories, concepts and frameworks used to understand and analyze the role of social agencies and institutions in shaping the potential performance of firms and economies. Issues addressed include operating models and forms of ownership, local responsiveness and global integration as well as employment policies and culture in context.

#### **HRM 561 The Regulatory Framework of HRM (3 ECTS)**

This course aims to give students an understanding of the way in which the employment relationship is regulated around the world, including an understanding of the influence of regulation in organizations. It covers key issues and tensions which can arise in employment relations, as well as the nature, objectives and methods adopted by the various parties seeking to influence the nature of those relations (e.g. government, employers, management, trade unions and employees). Specific topics discussed include theoretical perspectives on work and employment relations; trade unions and collective bargaining; trends in unionization; influence of the financial crisis on employment relations and institutions; links between employment relations, skills, pay and economic performance; and employment relations in the public sector. Emphasis will be given on the Cypriot context as well.

#### **HRM 562 Managing Workforce Diversity, Theory and Practice (6 ECTS)**

This course aims at providing students with an understanding of the individual, societal and organizational dynamics related

to managing, and being part of, a diverse workforce in contemporary organizations. It covers the main concepts and frameworks to familiarize students with the variety of human difference and the criticality of managing this difference to create inclusive workplaces. The topics covered include the definition and importance of diversity in HRM and social policy; the social, cultural and legal context for the development of HRM diversity policies and practices in organizations; the business case for managing diversity; the various dimensions of diversity. Students will receive practical training in understanding, being sensitive about and adapting to various needs, concerns and characteristics of different people. This should enhance their interpersonal relationships with members of their team and help them grow into sensitive, responsible and ethical managers and leaders.

#### **HRM 563 Strategic Management (3 ECTS)**

This course focuses on some of the important current issues in strategic management and highlights the significant emerging trends in the field. It aims at providing students with a pragmatic approach to understanding, formulating and implementing corporate, business and functional strategies. Towards this purpose, the course relies on the analysis of examples from organizations that operate in complex and rapidly changing environments to understand how globalization, new business models, disruptive technologies and changes in societal aspirations challenge managerial decision-making. Topics covered include the changing nature of strategic management, strategy and the strategic context; analysis of organizational aims, environment, resources and capabilities; strategy formulation and implementation; assessment of corporate and business strategies; competitive advantage; and the links between organizational strategy, structure, leadership, culture and HRM systems.

#### **HRM 564 Business Ethics and CSR (3 ECTS)**

This course provides a general overview of ethical performance in business, their CSR activities and the role of HRM in it. Students will learn to examine standards and priorities through ethics and moral reasoning and achieve a balance between business and economic responsibility on one hand, and social and public responsibility on the other. Topics include: ethical HR policies and practices, ways to promote and institutionalize ethical and responsible behavior in organizations, and differences in ethical standards and corporate social responsibility approaches in different countries. Cases and problems illustrating relevant dilemmas will be used extensively.

#### **HRM 565 Leading People (3 ECTS)**

This course introduces students to the major issue of leadership and its connection to HRM, on the basis that leadership is dynamic and not static. Major theories on leadership as well as the process of leadership are analyzed and the relationship between leader, followers and situations is explored. Emphasis is given to the role of social gender and culture in leadership, to the characteristics and values of leaders as well as charismatic leadership and follower roles. This aims to develop students' skills and competencies to be effective leaders in organizations. Students are expected to understand their own skills and competencies related to a display of effective leadership and to use the opportunities provided to acquire and build these skills.

#### **HRM 573 Workshop on Human Resource Information Systems (1 ECTS)**

During this workshop, participants will learn how to select, setup and use a human resource management information system

(HRIS) for optimum performance. The session will focus on providing participants with the skills and knowledge necessary to get the most out of an HRIS, including an understanding of how it can enhance decisions relating to all HR functions.

#### **HRM 574 Workshop on Structures, Job Design and Workforce Planning (1 ECTS)**

The objective of this workshop is to help students become good analysts of organization structure and process, learning effective tools of design and implementation. The workshop provides the tools needed to analyze an organization's structure and its workforce, develop a strategy to match demand for staff with the right people at the right time and create a plan for talent management and retention. Attention is placed on the process of organizational and job design, emphasizing their links with strategic goals, motivation and performance.

#### **HRM 575 Workshop on HR Analytics and Evidence-Based HRM (1 ECTS)**

This workshop aims to provide students with the skills to act in a consultancy capacity for both external and internal clients as HR professionals in an organizational context. The value-added of the HRM function is often questioned, considered more of a rhetoric than a reality. Through the use of HR data, metrics and analytics, however, the HRM department of the organization can measure and assess the impact of specific practices and policies on measurable outcomes for the organization. This workshop provides an introduction to evidence based management through HR analytics and enables participants to initiate a human capital metrics journey that will help to improve the quality and credibility of HR decision-making.

#### **HRM 576 Workshop on Psychometric Measurements (1 ECTS)**

This workshop will help participants understand how assessments using psychometric tests are developed, used effectively and interpreted correctly. Psychometric tests are a standard and scientific method used to measure individuals' mental capabilities and behavioral style. They are designed to measure a candidates' suitability for a role based on the required personality characteristics and aptitude (or cognitive abilities). Employers use the information collected from the psychometric test to identify the hidden aspects of candidates that are difficult to extract from a face-to-face interview or other employee selection methods that are typically used.

#### **HRM 577 Workshop on Negotiations and Conflict Resolution (1 ECTS)**

Negotiations are an integral part of our professional and personal life. Therefore, business executives should have highly developed negotiation skills and to be aware of the necessary procedures for a successful negotiation. With these skills they should be able to deal with business situations with individuals or teams as well as with suppliers and customers. This workshop examines the theory, procedures and practical aspect of negotiations within the business environment. It gives special emphasis on the different types of negotiation, the strategy of negotiations, the appropriate communication between parties, sources of power in negotiations, ethics, multiparty negotiations and others. It also covers conflict resolution during the negotiation process.

#### **HRM 578 Workshop on HR Business Partnering (1 ECTS)**

This workshop aims to discuss the importance of the HR function in becoming a business partner in the organization, therefore having a say in strategic decisions. More importantly, it aims at critically analyzing the factors that may facilitate or impede the HR function from becoming a business partner, whether they relate to the organizational culture, the skills and experiences of



HR specialists or the alignment of talent management with business objectives. These issues are analyzed and good practices are presented and discussed.

### 3. Master in Data Science (MDS)

The Programme is offered jointly by the Department of Business and Public Administration, the Department of Computer Science, and the Department of Mathematics and Statistics. It is expected to start in September 2021 and will be offered in English. Data Science is an inter-disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from Big Data. Data Science is quickly becoming a field of central importance to the strategy of modern organizations. There is an increasing need for highly trained employees, who can think across disciplines to transform data into actionable insights. The objective of the Programme is to provide students with a strong understanding of basic and advanced methods in statistical inference, machine learning, data visualization, and data mining, which are the essential skills a modern data scientist needs to possess. The completion of the Programme requires 90 ECTS and the duration is 1,5-year. The Programme offers 3 tracks (Computer Science Track / Statistics Track / Business Analytics Track). The first two semesters will be dedicated to core courses, while students will select a track at the end of the second semester.

## THE DOCTORAL PROGRAMME

The Department offers a Ph.D. in Business Administration programme, which is intended for students (Cypriots and non-Cypriots) from accredited universities with postgraduate qualifications at the Master's level. The programme is offered in Greek and in English language. Graduates of the programme will be qualified to: pursue an academic career in government and/or private universities in Cyprus or abroad; be employed in public or private organizations; engage in activities of an advisory/consultant nature.

Financial support for doctoral students in the Department is the same as that for all doctoral programmes at the University. Scholarships (i.e. reduction of/exemption from tuition fees and/or financial support towards research/teaching project) are granted based on available resources (e.g. funded research programmes, donations from other sources, etc.), always in accordance with applicable regulations of the University.

### Admission Criteria

The specific admission criteria to the Ph.D. in Business Administration Programme are the following:

- Very good academic performance in previous studies.
- Hold a postgraduate, Master-level qualification in a relevant subject from a recognized university (or submit a certificate confirming that the Master level qualification will be obtained before the beginning of the doctoral programme.)
- Prepare and submit a preliminary research proposal that outlines the proposed research topic. Specifically, the proposal must include: a) The research question (s) and its significance, b) The research method (s) - how the

question (s) will be approached, c) The essential literature on the specific question (s), and d) Schedule for completion of the Ph.D.

- Students must also provide complete degree transcripts for their Master's level and undergraduate study.
- Request that at least two academic references in support of their application are sent to University of Cyprus (applicants should note the names and contact details of their academic references on their application).
- Submit certificates and other relevant documents, e.g. samples of prior academic and/or professional experience (publications, surveys, digital work, etc.).
- Submit evidence of very good knowledge of the English language.

### Structure

To obtain a Ph.D. degree in Business Administration, it is required to complete a total of 240 ECTS. The programme of studies consists of four parts:

- *Part I*-It includes courses representing 60 ECTS (i.e. 6-10 courses). Three of these courses are foundation courses in the specific field the student has decided to focus on. Depending on previous academic preparation (e.g. successful completion of relevant postgraduate courses in another academic institution), the student may be partially or fully exempted from the above courses.
- *Part II*-It relates to the preparation and the successful completion of the Comprehensive Exams, which refers to three basic modules and represents 10 ECTS.
- *Part III*-It relates to the manner of conducting the research, focusing on issues related to Management (this part represents 120 ECTS).
- *Part IV*-It is the writing stage of the dissertation, which is credited with 50 ECTS. This could take the form of a comprehensive study (thesis) or a series of essays on a specific research area. The thesis must be an original work that makes a significant contribution to the field. The aim is to produce research results that are publishable in refereed international journals.

### Type of Courses

The programme includes courses of quantitative and qualitative content, which touch on matters of epistemology, methodology, methods of quantitative analysis and qualitative research, finance, management, management science, operations management and marketing. The curriculum for each student is adjusted according to the student's chosen field of concentration. The courses offered are the following:

### (a) Common Core Courses

- Science Philosophy in Business Administration
- Research Methods in Business Administration I (Quantitative Methods) or Education Statistics with Applications of Statistical Packages
- Research Methods in Business Administration II (Qualitative Methods) or Qualitative Research in Education
- Operations Management
- Strategic Management
- Marketing Management

### (b) Advanced Courses

- Organizational Theory
- Entrepreneurship & Innovation
- Human Resource Management
- Supply Chain Management
- Service Management
- Applied Optimization Modeling
- Planning under Uncertainty
- Consumer Behavior
- Marketing Models
- International Marketing
- Advanced Topics in Marketing
- Sales Management
- Applied Financial Econometrics

Instruction will be in the two languages, Greek and English. The courses will be taught provided a sufficient number of students register for them. In the cases where the number of students registered for a course is small, this course will follow the structure of a seminar or independent study under the supervision of departmental faculty. The majority of courses will be offered by the Department, while useful and relevant courses from other departments of the University of Cyprus, are shown below:

- Social Influence and Social Representations
- Qualitative Research Methods in Psychology
- Experimental Psychology
- Advanced Research Methods II
- Using Basic and Advanced Multilevel Modelling in Educational Research

## Courses Description

### (a) Core Courses

#### **BPA 630 Science Philosophy in Business Administration (7.5 ECTS)**

The course provides tools for generating ideas and translating them into formal theories in the various fields of business administration. The aim is to offer students clear guidance for defining constructs, thinking through relationships and processes that link constructs, and deriving new theoretical models (or building on existing ones) based on those relationships. It will illustrate how to use causal analysis as well as grounded and emergent approaches to theory construction. Students will learn to distinguish between moderation and mediation as well as how to develop ideas at theoretical and analytical levels. The explicit aim of the course is to provide students with a deeper appreciation for theory building.

#### **BPA 640 Research Methods in Business Administration I (Quantitative Methods) (7.5 ECTS)**

The overall aim of the course is to provide econometric analytical tools to Ph.D. students to help identify the appropriate econometric technique given their research question and the available data. Students will be able to distinguish between different econometric models and understand their various strengths, limitations and pitfalls. Upon the completion of this course, students will acquire a thorough knowledge and understanding of the basic and advanced methods used in the business literature, become familiar with the different observational and experimental approaches to management and marketing, identify recent developments, and acknowledge the methodological requirements for publishing in top-tier journals.

#### **BPA 631 Research Methods in Business Administration II (Qualitative Methods) (7.5 ECTS)**

The course comprises three main components: a) It gives students hands-on knowledge on how to conduct a qualitative research project with a particular interest in how to make a research topic workable, how to collect and analyze qualitative-type data (e.g., visual methods, narratives, questionnaires, ethnography, biography, interviews) and how to select cases, b) It discusses qualitative research methods in relation to dominant theoretical perspectives and the quality criteria of research projects today, and c) By actively participating in an intensive supervisory process, the course provides students with a good platform for developing their own research methods and projects.

#### **BPA 635 Strategic Management (7.5 ECTS)**

The course offers a broad, multi-disciplinary introduction to the study of business strategy, with a particular emphasis on its behavioral and economic foundations. Different schools of thought and their evolution will be analyzed, discussed and compared.

#### **BPA 641 Operations Management (7.5 ECTS)**

This course provides more theoretical and methodological concepts/tools for the management of operations and the decision-making process within the scope of the supply chain. Competitive advantage driven by supply chain strategy has been a common practice in the business environment for the past few years. Most strategies involve improving operational efficiency either through cost reduction or increased capital efficiency. Decision-making about operational issues is one of the most

common tasks in organizations. This course will enhance students' ability to perform the quantitative analysis necessary and understand the management issues in order to make good operational decisions within the supply chain. Coverage is topical and will include supply chains issues and strategy, operations management framework, the Six Sigma approach, quality management, demand and supply planning, inventory deployment/control, and transportation networks optimization. Other topics will be added as the course progresses. Where appropriate, concepts are introduced using case studies.

#### **BPA656 Marketing Management (7.5 ECTS)**

The course focuses on issues relating to the analysis, planning, implementation, and control of the marketing activity. It particularly examines concepts, tools, and techniques, which are essential in making effective strategic marketing decisions. It also provides a comprehensive analysis of the firm's resources and capabilities, as well as of the customers, the competition, and the environment, in building effective marketing strategies and achieving a sustainable competitive advantage. It also examines various theoretical frameworks, analytical methods, and best practices relating to the development of marketing strategies.

### **(b) Advance Courses**

#### **BPA 633 Organizational Theory (7.5 ECTS)**

This course is an introduction to the major theoretical approaches and debates in Organizational Theory, which draws primarily on Sociology and secondarily on Economics, Psychology, and Political Science. This course will provide students with a roadmap to guide them through organizational theory. For this reason the classic theories are presented first and then the newer theories, as these have evolved throughout history to the present.

#### **BPA 634 Entrepreneurship & Innovation (7.5 ECTS)**

The course uses theories of innovation and entrepreneurship to explore how effective organizations engage in these two strongly integrated processes. The course examines product, service and process innovation and demonstrates the role of innovation as a driver of organizational growth and competitiveness.

#### **BPA 636 Human Resource Management (7.5 ECTS)**

This course introduces students to the theory and practice of Human Resource Management (HRM) in organizations. Issues that will be examined include: the strategic importance of HRM, the role of managers and employees of the organization in HRM issues, recruitment, selection, performance appraisal, HR planning, compensation and benefits and training and development. Students will have the opportunity to analyze a variety of practical situations where the theories behind the practice of HRM are applied.

#### **BPA 642 Supply Chain Management (7.5 ECTS)**

This course examines the major challenges involved in managing efficient supply chains. It illustrates various strategic and tactical supply chain issues such as product design, virtual integration, information-sharing strategy, outsourcing, procurement, distribution strategy, and risk management. Students are given the chance to explore emerging supply chain issues, and case studies are used to examine issues related to supply chain management.

#### **BPA 643 Service Management (7.5 ECTS)**

The service sector is today one of the largest and fastest-growing components of most developed and developing economies. Most manufacturing firms also encompass extensive service functions in addition to production operations. This course focuses on the unique aspects involved in the design and delivery of service operations, both within "pure" service organizations (banking, retailing, transportation, travel, hospitality, etc.) as well as within the service functions of manufacturing. The course further examines important design and operation issues related to electronic and consulting services. The course takes a theoretical and methodological viewpoint with a bias towards operations, while further considering marketing, IT and human resource management, all of which need to be integrated in order for the service firm to gain a competitive advantage. Students will be exposed to the basic theoretical and methodological approaches related to such issues as service delivery design and management, service quality and customer satisfaction, yield management and waiting line systems. Students will gain an appreciation of the complexities involved in managing service encounters and implementing changes, and further appreciate entrepreneurial opportunities in services.

#### **BPA 644 Applied Optimization Modeling (7.5 ECTS)**

Optimization models provide an effective framework for analyzing diverse quantitative problems to support operational and tactical business decisions. This course looks at different model forms to ascertain their capabilities and limitations in addressing various practical business problems. Students develop modeling skills that involve: ability to formulate different classes of optimization models; familiarization with suitable software tools to numerically solve models; application of models in diverse business problems drawn from operations, financial planning, marketing, etc; ability to derive economic interpretations and insights from the results.

#### **BPA 645 Planning under Uncertainty (7.5 ECTS)**

Uncertainty is prevalent in all business endeavors (e.g., due to randomness in economic factors/agents, market volatility, changing customer preferences, and even unpredictable catastrophic events). Ignoring impacts of uncertainty on operational, tactical and, most importantly, on strategic decisions can be perilous for businesses. Prudent planning requires an understanding of sources of uncertainty and means to quantify and mitigate the potential consequences. The focus of this course is on risk measurement and risk management. The course examines various sources of risk, presents metrics for measuring risks and develops quantitative models that appropriately incorporate risk mitigation measures in order to support decisions in the face of uncertainties and ambiguities. Stochastic programming and robust optimization models, as risk management tools, are examined through practical examples for various business problems.

#### **BPA 651 Consumer Behavior (7.5 ECTS)**

This course examines fundamental principles, concepts and theories of Consumer Behavior, emphasizing both the psychological and the sociocultural factors that influence the consumer decision-making process. The course will familiarize students with research in the field of consumer behavior as it presents current theoretical and methodological approaches to various aspects of consumer behavior. Upon completion of this course, students will be able to analyze and critically assess the



extant research, develop innovative research ideas, form testable research hypotheses, and specify rigorous empirical approaches.

#### **BPA 652 Marketing Models (7.5 ECTS)**

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The objective of this course is to introduce students to the quantitative models used to investigate marketing-related research problems and improve marketing decisions. Upon completion of this course students will be able to build their own models and explore research questions.

#### **BPA 653 International Marketing (7.5 ECTS)**

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This course will present the distinctive characteristics of International Marketing, and identify the main challenges firms face when they expand their operations in overseas markets. The course analyzes the complex environmental forces that influence international marketing strategies and programmes e.g., the economic, social, political, cultural and legal dimensions. It also presents the strategic planning process necessary for developing international marketing programs that will satisfy customers across different country-markets. Drawing on the relevant academic literature, the course will examine international trade theories, the internationalization process of the firm, multinational firms and foreign direct investments, and other research paradigms that have influenced the evolution of international marketing as a distinct academic discipline. By the end of the course, students should be familiar with the key international marketing theories and concepts, recognize the main research streams in the field of International Marketing, understand the alternative methodological approaches that are commonly employed in order to investigate international marketing phenomena, and develop innovative research ideas for advancing the existing body of knowledge.

#### **BPA 654 Advanced Topics in Marketing (7.5 ECTS)**

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This course introduces students to topical marketing problems and research challenges. Students will be encouraged to make a critical analysis of recent developments in the general social and economic environment and assess the influence of such changes on contemporary marketing theory and practice. The main topics include environmental and green marketing, corporate social responsibility, the role of digital interactive media and social networks, the diffusion of technological innovations, and health care marketing.

#### **BPA 655 Sales Management (7.5 ECTS)**

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Present the key topics that concern academic researchers in the area of Sales Management and provide an in-depth analysis of relevant theories, and present recent conceptual and methodological advancements. Upon the completion of this course, students will acquire a thorough knowledge and understanding of the sales management literature, become familiar with the different research streams in this field, comprehend the main research approaches and methodologies that can be employed to investigate sales management-related phenomena, identify recent developments, and acknowledge the requirements for publishing in top-tier journals.

## Research Interests of the Academic Staff

### **Angelos Georghiou, Assistant Professor**

The development of tractable computational methods for the solution of stochastic and robust optimization problems, as well as applications in operations management, healthcare and energy.

### **George Hadjinicolas, Professor**

The production-marketing interface, International manufacturing/operations management, Serial production systems, Product positioning methods.

### **Christiana Ierodiakonou, Assistant Professor**

Work and employment inequalities; Transitions between employment and family; Flexible work arrangements; Inclusion and diversity at work; Institutions and employment; Job insecurity and precarity.

### **George Kassinis, Associate Professor**

Strategy, Environmental issues in business, CSR, Stakeholders and value co-creation, Social networks, Industrial ecology and regional development.

### **Leonidas C. Leonidou, Professor**

International marketing/purchasing, Relationship marketing, Socially responsible marketing, Marketing in emerging economies, and Strategic marketing.

### **Panos Markopoulos, Assistant Professor**

Management information systems, Economics and electronic markets, Product information online: Mechanisms and market operation, Game theory.

### **Christos Nicolaides, Lecturer**

Data science, Business analytics, Social networks, Digital marketing, Peer effects, Policy implementation, Public health, Computational social science.

### **Alexia Panayiotou, Associate Professor**

Organizational storytelling, Popular culture, Gender and organizations, Management/organizational control, Power and resistance, Organizational paradoxes, Space and symbolism, critical management education.

### **Andreas Soteriou, Professor**

Management of service operations, Production and operations management, Quality and productivity in services and manufacturing, Empirical research methods.

### **Eleni Stavrou-Costea, Professor**

Strategic Human resource management in a comparative international context, Flexible work arrangements, Work-life balance and intergenerational transitions in family firms.

### **Marios Theodosiou, Associate Professor**

Standardization versus adaptation of marketing strategy in international markets, Marketing strategy-performance relationship in the context of international business ventures, Sales management/export sales management, Marketing strategy/export marketing strategy, Work outcomes and performance of frontline customer-contact employees.

### **Haridimos Tsoukas, Professor**

Knowledge-based perspectives on organizations, Management of organizational change and social reforms, Organizations, change and routines, Practical reason—the epistemology of practice, Phenomenological-neoaristotelian perspectives on organizations and organization theory, Meta-theoretical issues in organization theory and management studies.

### **Hercules Vladimirou, Professor**

Stochastic programming (models, applications and algorithms), Financial modelling/optimization, Computational finance, Risk management, Models for planning under uncertainty (with applications in finance and operations planning/management problems), Data science, Business analytics (predictive & prescriptive analysis).

## Communication

### **GRADUATE STUDIES COMMITTEE**

**Andreas Soteriou, Professor**

**Haridimos Tsoukas, Professor**

**Leonidas C. Leonidou, Professor**

### **MBA PROGRAMME OFFICE**

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### **DOCTORAL PROGRAMME OFFICE**

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### **DEPARTMENT SECRETARIAT**

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# Department of Economics

[www.ucy.ac.cy/econ](http://www.ucy.ac.cy/econ)

The Department aims to produce scientific knowledge of an international standard and to transfer this knowledge to its students. It offer a range of postgraduate programmes that cover the needs of both the students that are interested in entering the job market upon completion of their studies and of those who are interested in continuing with a research career. Specifically, the Department offers the following postgraduate degrees:

- Master Degree in Economic Analysis (MECA)
- Master Degree in Monetary and Financial Economics (MMFE)
- Master in Business Economics TIME MBE (Technology Innovation Management and Entrepreneurship, jointly offered by a consortium of three universities: the University of Crete, the University of Cyprus and Wageningen University in the Netherlands).
- Ph.D. in Economics

## Introduction

The science of Economics studies human behaviour and the organization of human societies. As individuals we continuously make decisions with economic repercussions. Some are minor, such as our daily transactions and our weekly groceries; whether to go out for dinner or coffee; if we are going to drive or take the bus to work. Others have important consequences in our lives: whether to go to college and what subject to study; how much to save and how; and if we are going to accept an offer for a new job or stay with our current employer. Firms also have to make a lot of decisions such as what goods and services to produce; how much to invest; how many employees to hire and how much to pay them; and how much to invest in marketing and advertising. The third important party is the state, which makes decisions that affect our everyday lives as well as the long-term evolution of the economy. All these decisions by individuals, the firms and the state form our social and economic environment which determines our living standards.

Understanding the economic behaviour of the individual and the basic principles that govern the functioning of a modern economy allow economists to evaluate economic data and information correctly and to make rational decisions. With this knowledge the economics graduate can pursue a career in the civil service, regulatory bodies, banking, accountancy or consulting services. One can also choose to specialize in economic research and advance to an academic or research career. We strive to offer modern high quality graduate programmes that teach the state of the art in economics in order to allow graduates to successfully compete with the graduates of the best universities in the world.

## Research

The Department of Economics covers a broad spectrum of research areas such as international trade, employment and migration, econometric theory, international finance, industrial organization, productivity, economic growth, experimental economics, political economy and micro-economic theory. Our staff members have links to some of the best research centers and universities in the world and participate in important international research networks. Our key goal is the production of high quality research for publication in the best international scientific journals.

## Resources and Facilities

The University Library offers students access to all the important scientific journals as well as a large number of books. Student also have access to the computer labs of the Faculty of Economics and Management which are equipped with state of the art hardware and software, including statistical packages. The Faculty also provides access to several international databases as well as data on the cyriot economy, that can be used by students in their research projects or theses. In this environment, graduate students can study and acquire all the necessary skills needed for a successful career.

## Admission Requirements

In addition to the requirements described in the relevant Admission and Attendance Regulations, candidates for the graduate studies programme are required to have a grade of 550 in the TOEFL examinations, or 213 in the TOEFL computer-based format exam, or B in the GCE O-Level examinations, or an equivalent qualification demonstrating sufficient knowledge of the English



language (by previously obtaining a degree from an accredited U.K. or U.S. academic institution, for instance).

In addition to the requirements described in the relevant Admission and Attendance Regulations, candidates for the graduate studies programme, whose first language is not English, are required to provide proof of proficiency in English in one of the following ways:

1. G.C.E. O-Level English with a minimum grade "C"
2. I.G.C.S.E. English with a minimum grade "C"
3. I.E.L.T.S. minimum average score 6.5
4. T.O.E.F.L. with a minimum score of 550 (Paper-based) or T.O.E.F.L. with a minimum score 213 (Computer-based) or T.O.E.F.L. (Internet based) with a minimum score 92
5. Cambridge English First (FCE), with a minimum score 176
6. Cambridge English Advanced (CAE), with a minimum score 176
7. Cambridge English Proficiency (CPE), with a minimum score 176
8. Certificate of Proficiency in English (ECPE), with a minimum score 650
9. Anglia Examinations–Proficiency (C1)
10. IB diploma (International Baccalaureate)
11. Certificate of success in the exams conducted by the Ministry of Education, Culture, Sport and Youth
12. Certificate of success in year 6th final exams, of the Cyprus State Institutes of Further Education
13. Any other equivalent exam that will prove proficiency in English language
14. Candidates who hold a degree from a recognized university programme taught in English are considered to have proficiency in English

For more information on applications to join the graduate programme of Economics, please refer to the Admission and Attendance Regulations–Application Procedures.

Our programmes are open to students without an undergraduate degree in economics. All programmes have been designed to accommodate students of diverse backgrounds, particularly students in technical fields such as mathematics, statistics and mechanics.

## Master's Programmes

### 1. Master in Economic Analysis (MECA)

Provides rigorous training in economic theory and econometric methods. It is suitable for students interested in working as economic analysts or in continuing their studies for a Ph.D. The language of instruction is English.

### 2. Master in Monetary and Financial Economics (MMFE)

Provides a broad background in economic theory and specialized courses in monetary and financial economics. It is suitable for students who are interested in a career in

the financial sector, such as banks, investment companies, etc. The language of instruction is English.

### 3. Master in Business Economics (TIME MBE)

The TIME (Technology Innovation Management and Entrepreneurship) Masters in Business Economics (MBE) is a full-time inter-University 15 month Master's programme in Business Economics (MBE). It offers a novel inter-university Masters of Business Economics curriculum, that combines targeted classroom and practical training to provide students with the knowledge and the entrepreneurial skills, needed to successfully manage innovative organizations in an ever changing environment, by offering an integrated curriculum.

## Structure

The normal duration of all programmes for full-time students is three semesters. The maximum time allowed for completion of a degree is eight semesters.

The language of instruction is English for all programmes.

All Master Degrees are awarded upon successful completion of at least 90 ECTS in graduate courses, with the exception of the TIME MBE programme which requires 120 ECTS. For the Master Degree in Monetary and Financial Economics programmes, the completion of nine courses and a Master's thesis is required. For the Master Degree in Economic Analysis programme, the requirement is twelve courses or eight courses plus a Master's thesis. Courses are separated into two categories: required and elective courses. Required courses give essential background in microeconomics, macroeconomics and econometrics. Elective courses give students the opportunity to specialize in their area of interest. Required courses for each Master's programme are described below.

## Master's Thesis

(ECO 698 – 24 ECTS, MMFE)

(ECO 699 – 30 ECTS, MECA)

The thesis should demonstrate in-depth knowledge of a particular topic and should contain original research elements. The thesis is presented to students and faculty and is marked independently by the student's advisor and a member of staff with similar research interests appointed by the Departmental Committee of Graduate Studies. If work on the thesis extends beyond one semester, students can register in ECO 600 Master's Thesis (1 ECTS) for at most two subsequent semesters.

## MASTER IN ECONOMIC ANALYSIS (MECA)

For the Master Degree in Economic Analysis, the requirement is twelve courses or eight courses plus a Master's thesis. It provides rigorous training in economic theory and econometric methods. It is suitable for students interested in working as economic analysts or in continuing their studies for a Ph.D. The language of instruction is English.

	ECTS
<b>First Semester</b>	
ECO 601 Microeconomic Analysis I	7.5
ECO 602 Macroeconomic Analysis I	7.5
ECO 603 Statistics and Econometrics I	7.5
ECO 604 Analytical Methods in Economics	7.5
<b>Second Semester</b>	
ECO 651 Microeconomic Analysis II (ECO 601)	7.5
ECO 652 Macroeconomic Analysis II (ECO 602)	7.5
ECO 653 Statistics and Econometrics II (ECO 603)	7.5
<i>Note: The courses in brackets are prerequisites</i>	
One of the following:	
ECO 605 International Trade	7.5
ECO 606 International Finance	7.5
ECO 610 Money, Banking and Financial Economics	7.5
ECO 611 Labour Economics	7.5
ECO 612 Industrial Organisation and Policy	7.5
ECO 613 Public Economics	7.5
ECO 644 The Economics of Firm Financing	7.5
ECO 664 Analysis of Economic and Financial Data	7.5
ECO 673 Applied Microeconometrics	7.5
ECO 680 Applied Financial Econometrics	7.5
ECO688 Current Topics in Economic Research I	7.5
ECO788 Current Topics in Economic Research II	7.5
<b>Third Semester</b>	
ECO 699 Master's Thesis or four courses from the above list (4 courses X 7.5 ects)	
<b>Notes:</b>	
1. Students may replace an Elective Course with a graduate course offered by other University Departments, following approval from the Departmental Board.	
2. Students may replace an Elective Course with an undergraduate course offered by other University Departments, following approval from the Departmental Board.	

## MASTER IN MONETARY AND FINANCIAL ECONOMICS (MMFE)

For the Master Degree in Monetary and Financial Economics, the requirement is nine courses plus a Master's thesis. It provides a broad background in economic theory and specialized courses in monetary and financial economics. It is suitable for students who are interested in a career in the financial sector, such as banks, investment companies, etc. The language of instruction is English.

	ECTS
<b>Required Courses</b>	<b>52.5</b>
<b>First Semester</b>	
ECO 610 Money, Banking and Financial Economics	7.5
ECO 661 Microeconomics	7.5
ECO 662 Macroeconomics	7.5
ECO 663 Econometrics	7.5

	ECTS
<b>Second Semester</b>	
ECO 606 International Finance	7.5
ECO 644 The Economics of Firm Financing	7.5
ECO 680 Applied Financial Econometrics	7.5
One Elective Course	6-7.5
<b>Third Semester</b>	
One Elective Course	6-7.5
ECO 698 Master's Thesis*	24
<b>Elective Courses</b>	
	<b>13.5-15</b>
Two of the following:	
AFN 521 Financial Theory	7
AFN 522 Investments	7
AFN 525 Options and Futures	7
AFN 526 Financial Analysis and Capital Market Research	7
AFN 528 Advanced Capital Budgeting	6
AFN 530 Seminar on Cyprus Economy, Banking and Financial Markets	6
AFN 534 Financial Risk Management	6
AFN 538 Applied Topics in Finance	6
ECO 605 International Trade	7.5
ECO 611 Labour Economics	7.5
ECO 612 Industrial Organisation and Policy	7.5
ECO 613 Public Economics	7.5
ECO 664 Analysis of Economic and Financial Data	7.5
* <i>Master's Thesis: The thesis must be related to the specific programme and must satisfy the criteria specified above (General Programme Structure – Master's Thesis)</i>	
<i>If the nine courses chosen by a student total under 66 ECTS then that student may enroll in ECO 695 (Seminar of Economic Research, 1.5 ECTS) to fulfill their Master degree requirements.</i>	

## MASTER IN BUSINESS ECONOMICS TIME-MBE (Technology Innovation Management and Entrepreneurship)

The TIME (Technology Innovation Management and Entrepreneurship) Masters in Business Economics (MBE) is a full-time inter-university 15 month Master's programme in Business Economics (MBE), which offers a novel inter-university Masters of Business Economics curriculum that combines targeted classroom and practical training, to provide students with the knowledge and the entrepreneurial skills needed to successfully manage innovative organizations in an ever changing environment, by offering an integrated curriculum.

TIME MBE is a full-time 15th month programme with 120 ECTS needed for a successful completion. All courses are compulsory.

The programme consists of three different components:

1. The *Academic Modules* (September – May, 60 ECTS)
2. The *Summer Practicum* (May – July, 30 ECTS)  
A Supervised Summer Internship
3. The *Master Thesis* (May – December, 30 ECTS)

	ECTS
<b>First Semester</b>	
MBE5101 Business Economics	4.0
MBE5102 Economics of Innovation and R&D Spending	4.0
MBE5103 Data Analytics and Quantitative Methods	4.0
MBE5104 Behavioral Economics	4.0
MBE5204 Financial Management for Innovative Firms	3.0
MBE5206 Firm Performance Evaluation	4.0
MBE5306 New Technology Ventures	3.0
<b>Second Semester</b>	
MBE5201 Finance & Accounting for Decision Making	4.0
MBE5202 Marketing & Management for Innovative Firms	4.0
MBE5203 Competitive Decision Making and Negotiations	3.0
MBE5205 Global Economic Challenges	4.0
MBE5301 Strategy for R&D Intensive Firms	4.0
MBE5302 Decision Making for Innovative Ventures	4.0
MBE5303 Intellectual Property Rights and Technology Transfer	4.0
MBE5304 Use of Innovation and Knowledge in R & D Intensive Firms	4.0
MBE5305 Skills for Small Firm Development	3.0
<b>Summer Semester</b>	
MBE5400 Internship	30
<b>Third Semester</b>	
MBE5500 Master Thesis	30

## Doctoral Programme

The goal of the Ph.D. Programme in Economics is to provide training to individuals to become high quality researchers in line with international standards. Our aim is for our graduates to be able to successfully compete for employment at research institutions, public policy organizations, and the private sector. The creation of a dynamic research community at the University of Cyprus will raise the level of economic research in Cyprus and will infuse public debate on economic policy with scientific methods and rigorous analysis.

## Admission Requirements

Minimum requirements for admission to the Ph.D. programme are:

1. Research-oriented Master Degree in Economics. There are such programmes in many universities abroad. At

the University of Cyprus, the relevant programme is the Master in Economic Analysis. To be admitted into the Ph.D. programme, students must have very good academic standing in the core courses (Microeconomics, Macroeconomics and Econometrics). Other academic or research criteria will also be considered. In exceptional cases, the Graduate Committee can request that the Department Council waive the minimum grade requirements mentioned above.

2. Very good command of the English language. This can be certified in one of the following ways:

1. G.C.E. O-Level English with a minimum grade "C"
2. I.G.C.S.E. English with a minimum grade "C"
3. I.E.L.T.S. minimum average score 6.5
4. T.O.E.F.L. with a minimum score of 550 (Paper-based) or T.O.E.F.L. with a minimum score 213 (Computer-based) or T.O.E.F.L. (Internet based) with a minimum score 92
5. Cambridge English First (FCE), with a minimum score 176
6. Cambridge English Advanced (CAE), with a minimum score 176
7. Cambridge English Proficiency (CPE), with a minimum score 176
8. Certificate of Proficiency in English (ECPE), with a minimum score 650
9. Anglia Examinations – Proficiency (C1)
10. IB diploma (International Baccalaureate)
11. Certificate of success in the exams conducted by the Ministry of Education and Culture
12. Certificate of success in year 6th final exams, of the Cyprus State Institutes of Further Education
13. Any other equivalent exam that will prove proficiency in English language
14. Candidates, who hold a degree from a recognized university programme taught in English, are considered to have proficiency in English

The Graduate Committee will prepare individual curriculums for each student accepted. This will ensure that all students have the necessary skills and knowledge to proceed to the research stage of their degree.

## Structure

The Ph.D. programme is a four-year programme (eight semesters, 240 ECTS). Three semesters are taken up by coursework and a minimum of five semesters are required for the research phase.

### A. Coursework - Comprehensive Examinations (CE)

During the first year, students need to take required courses in Microeconomics, Macroeconomics and Econometrics. Students can take the exam only if they



have a grade of at least 6.5/10 in the 6 Core Courses (Microeconomics, Macroeconomics and Econometrics), without failing any class. Students cannot repeat classes in order to improve their grades. However, the Graduate Committee may, in exceptional circumstances, allow students who have failed one class to repeat it.

During the second year of studies, students take four Field Courses, which give them the opportunity to acquire expertise in their area of interest. At this stage, students are expected to discuss their research interests with faculty members, a process that will lead to a mutual agreement between the student and a faculty member, who will become the student's main advisor.

The CE is administered by a Committee of three academics and will be based on the research interests of each student. The Committee is also responsible for the timing of the exam, which has to take place no later than the end of the second year of studies. The Committee is appointed by the Department Board, after a suggestion from the Graduate Committee and the student's Research Advisor.

If the student fails the exam, he/she will have to repeat it the following semester (and no later than the end of the third year of studies), as specified by the University Postgraduate Studies Regulations.

## B. Specialization-Submission of Research Proposal

By the end of the 6th semester, students are required to have prepared and successfully defended their research proposal. The committee examining the thesis proposal consists of three members proposed by the Student's Advisor and appointed by the Department Board, after a suggestion from the Graduate Committee and the student's Research Advisor. The Committee is chaired by the Student's Advisor. One of the members of the Committee could be an academic from another department of the University of Cyprus, or an academic from another university or research center.

The student is expected to demonstrate the ability to study a new subject in an original way, as well as his/her knowledge of the appropriate research methods. She/he is also expected to present some supportive preliminary results.

## C. Research-Submission of Dissertation and Thesis Defense

The student will conduct his research under the guidance of his Advisor. In their Thesis Defense, candidates give a brief oral summary and answer questions on the content and results of the Ph.D. thesis. Candidates are expected to defend the thesis, demonstrate its originality and justify deviations from previous results in the literature.

For more information on Attendance Regulations of Postgraduate Studies, please refer to the Admission and Attendance Regulations – Application Procedures or please consult the Graduate School (tel.: 22894021/44).

## Credit for Previous Coursework

Credit may be given for up to one year's graduate level coursework (60 ECTS) taken at other universities. Students cannot be exempted from the comprehensive examinations. Completion of the Ph.D. requires that students study at least three years at the University of Cyprus. Students must also take at least 30 ECTS from the elective courses.

	ECTS
<b>Compulsory Courses</b>	
ECO 601 Microeconomic Analysis I	7.5
ECO 602 Macroeconomic Analysis I	7.5
ECO 603 Statistics and Econometrics I	7.5
ECO 604 Analytical Methods in Economics	7.5
ECO 651 Microeconomic Analysis II (Prerequisite ECO 651 - 7.5 ECTS)	7.5
ECO 652 Macroeconomic Analysis II (Prerequisite ECO 652 - 7.5 ECTS)	7.5
ECO 653 Statistics and Econometrics II (Prerequisite ECO 653 - 7.5 ECTS)	7.5
ECO 688 Current Topics in Economic Research I	7.5
ECO 788 Current Topics in Economic Research II	7.5
<b>Elective Courses</b>	
ECO 605 International Trade	7.5
ECO 606 International Finance	7.5
ECO 610 Money, Banking and Financial Economics	7.5
ECO 611 Labour Economics	7.5
ECO 612 Industrial Organisation and Policy	7.5
ECO 613 Public Economics	7.5
ECO 644 The Economics of Firm Financing	7.5
ECO 664 Analysis of Economic and Financial Data	7.5
ECO 673 Applied Micro Econometrics	7.5
ECO 680 Applied Financial Econometrics	7.5

Any course considered by the Department Board to have low attendance can be taught as a Reading Course or as an Independent Study (ECO 693 and ECO 696). Students cannot select more than two Reading Courses.

Students may replace up to two elective courses with undergraduate courses offered by other University Departments, upon approval from the Department Board.

## Research Stage

Students who pass their comprehensive examinations have the following additional responsibilities in each semester of their research and writing stages:

- They must attend the Departmental seminar series (at least 80%)
- They must present their research in this Departmental seminar series. (students signed up for 15 ECTS research stage are exempt from this requirement).

The Director of Graduate Studies will be responsible for overseeing doctoral students' completion of these requirements.

## Additional Remarks

### Financial Support for Doctoral Students

The Department makes every effort to ensure that doctoral students have enough income to allow them to live independently. This is accomplished mainly through their employment as research assistants. The Department also awards some grants, while students can also secure employment as research assistants.

## Courses Description

### **ECO 601 Microeconomic Analysis I (7.5 ECTS)**

Rigorous study of market structures (perfect competition, monopoly, monopolistic competition and oligopoly), theory of distribution under perfect and imperfect competition, capital theory and introduction on general equilibrium and welfare economics. Depending on the course duration, the course will proceed with a rigorous treatment of production functions, cost functions and duality.

### **ECO 602 Macroeconomic Analysis I (7.5 ECTS)**

The course will introduce students to the foundations and methodology of dynamic macroeconomic theory and main classes of macroeconomic models, with a review of useful mathematical tools such as dynamic programming and optimal control, as well as relevant empirical methods. The objective is to deepen the understanding of aggregate fluctuations, as well as the role of economic policy.

### **ECO 603 Statistics and Econometrics I (7.5 ECTS)**

Probability theory. Random sample. Regression, prediction and related notions. The linear (normal) regression model: Estimation, hypothesis testing, misspecification testing. Generalized linear regression. Elements of time-series. Heteroskedasticity and autocorrelation. Dynamic linear regression. Nonlinear regression. Multivariate regression systems. The simultaneous-equation model. Generalized method of moments. Limited dependent variables. Panel data models.

### **ECO 605 International Trade (7.5 ECTS)**

The course analyzes the traditional trade theory, as well as the "new trade theory." The first part of the course covers absolute and comparative advantage, as well as the Heckscher-Ohlin model. The second part examines optimal tariffs in situations, where countries have market power and strategically interact with each other. These methods are used to examine economic integration at both the regional and global levels.

### **ECO 606 International Finance (7.5 ECTS)**

Introduction to the main open questions of International Macroeconomics. Introduction to basic open economy inter-temporal models and the determinants of the current account. Review of the properties of the international business cycle with the goal of understanding international co-movement of macroeconomic variables. A look at international relative prices, with the goal of understanding the degree of segmentation of markets across countries. A review of the main factors and mechanisms driving economic crises, with a focus on the role of and inter-relation between international capital flows, credit expansions, real estate bubbles, overconsumption and the sovereign, and a look at macro-prudential and other policies that can be used to limit the frequency and consequences of such crises.

### **ECO 610 Money, Banking and Financial Economics (7.5 ECTS)**

This course examines financial markets and institutions. We analyze recent research developments in financial markets (such as bonds, stocks and foreign exchange) and financial institutions (banks, insurance companies, mutual funds, etc.). Topics to be covered will be chosen from the following: financial markets, financial institutions, the financial system, prices and exchange rates, money and bond markets, interest rates, inflation, stocks, bonds, portfolio choice, European economic convergence, and others.

### **ECO 611 Labour Economics (7.5 ECTS)**

This course begins by examining static and dynamic theories of the demand for and supply of labour, as well as their interaction in the context of the competitive paradigm. Emphasis is placed on econometric methods for the empirical implementation of these models. Studies of wage outcomes and apparent deviations from the competitive norm are then considered. A number of non-competitive labour market models are reviewed as well as empirical attempts to discriminate amongst them. The course ends with an examination of issues relating to possible failure of the labour market to clear, e.g., wage rigidity and unemployment.

### **ECO 612 Industrial Organization and Policy (7.5 ECTS)**

Industrial Organization is concerned with the study of imperfectly competitive markets. The course aims to develop an understanding of competitive interaction in such markets; to introduce the empirical methods used to analyze them; and to outline the basic policy principles that govern their operation. Indicative topics include estimation of supply and demand, estimation of cost and production functions, monopoly regulation, oligopoly models, collusion and cartels, mergers, product differentiation, barriers to entry.

### **ECO 613 Public Economics (7.5 ECTS)**

This course examines the effects of fiscal policy on the economy through taxation and public expenditure from both positive and normative points of view. Both positive and normative aspects of public policy are examined in relation to issues like the role of the state, the taxation of goods and services, the effect of taxation on labour supply and savings, the taxation of company profits and its effects on corporate finance and investment and the incidence of taxes. Also examined from the public expenditure point of view are topics on market imperfection such as public goods, externalities and social insurance. In several topics reference is made to the public sector in Cyprus and conclusions drawn from empirical analysis are presented.

### **ECO 644 The Economics of Firm Financing (7.5 ECTS)**

The course examines among other topics the valuation of a firm's financial condition, bond, stock and option valuation, the trade-off between risk and return, valuation of investment projects, creating value for shareholders, global financial markets and their impact on raising long-term capital, establishing a target capital structure and dividend policy.

### **ECO 651 Microeconomic Analysis II (7.5 ECTS)**

This course continues the analysis of the principles of Microeconomic Theory and is divided into two parts. The first part will develop the basic principles of game theory under conditions of both complete and incomplete information and will apply these to the analysis of problems such as collusion, bargaining, auctions, moral hazard, and adverse selection. The second part will serve as an introduction to general equilibrium theory and its extensions, and will discuss the general theorems of welfare economics.

### **ECO 652 Macroeconomic Analysis II (7.5 ECTS)**

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Analytical approach to basic macroeconomic models with finite and infinite horizons in discrete and continuous time. Introduction to real business cycle and international real business cycle models. Endogenous growth theory with emphasis on R & D-based models and international technology diffusion.

### **ECO 653 Statistics and Econometrics II (7.5 ECTS)**

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Basics of Probability and Statistics, the bootstrap, generalized method of moments, endogeneity, Simultaneous equation models, limited dependent variables, panel data models, nonparametric density estimation, nonparametric regression estimation.

### **ECO 661 Microeconomic Analysis (7.5 ECTS)**

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The course will begin with a review of the classic theories of consumer and producer behavior and proceed to the description of basic market structures and the analysis of factor markets. It will then lay out the basic principles of game theory under conditions of both complete and incomplete information. These will be the tools for the analysis of topics in modern microeconomic theory such as bargaining auctions, moral hazard and adverse selection.

### **ECO 662 Macroeconomic Analysis (7.5 ECTS)**

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The primary objective of this course is to help students understand the functioning of the macroeconomy as the aggregate outcome of the actions of heterogeneous agents. The course presents and analyzes macroeconomic models, that can help us understand the behaviour of macroeconomic variables and their responses to policy shocks. The course includes an in-depth discussion of a number of concepts and topics in the area of macroeconomics, including economic expectations and monetary policy.

### **ECO 663 Econometrics (7.5 ECTS)**

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Probability theory. Random sample. Regression, prediction and related notions. The linear (normal) regression model: Estimation, hypothesis testing, misspecification testing. Generalized linear regression. Elements of time-series. Heteroskedasticity and autocorrelation. Dynamic linear regression. Nonlinear regression. Multivariate regression systems. The simultaneous-equation model. Generalized method of moments. Limited dependent variables. Panel data models.

### **ECO 664 Analysis of Economic and Financial Data (7.5 ECTS)**

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The purpose of this course is enabling students to collect economic data from databases and subsequently be able to analyze them with aid of specialized statistical and econometric software.

### **ECO 673 Applied Microeconometrics (7.5 ECTS)**

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Brief review of the classical linear regression model. Econometric models for cross-section data and time-series data. Economic applications and the use of specialized econometric software are emphasized. Topics will be drawn from: 1) models of multiple equations, 2) models of limited dependent variables, 3) elements of time-series analysis and models for macro and financial data.

### **ECO 680 Applied Financial Econometrics (7.5 ECTS)**

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Financial time series and their characteristics; Conditional heteroskedastic models; Nonlinear models and their applications; Continuous-time models and their applications; Risk management, extreme values, quantile estimation and value at risk; Estimation and tests of asset pricing models, multivariate volatility models; High-frequency data analysis and market microstructure.

### **ECO688 Current Topics in Economic Research I (7.5 ECTS)**

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The class is divided into two parts. In the first part the most important topics in current economic research will be presented and analyzed. In the second part students will choose a field to focus on and present and systematically analyze the relevant literature and produce the relevant reports.

### **ECO788 Current Topics in Economic Research II (7.5 ECTS)**

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The class is divided into two parts. In the first part the most important topics in current economic research will be presented and analyzed. In the second part students will choose a field to focus on and present and systematically analyze the relevant literature and produce the relevant reports.



## Research Interests of the Academic Staff

• **Elena Andreou, Professor**

Financialeconometrics, Time series econometrics.

• **Eleni Aristodemou, Lecturer**

Theoretical and Applied Econometrics, Applied Industrial Organization.

• **Andri Chassamboulli, Assistant Professor**

Search and matching, Immigration, Macroeconomics, Labor economics.

• **Louis Christofides, Emeritus Professor**

Labour economics, Macroeconomics, Applied econometrics.

• **Sofronis Clerides, Professor**

Industrial organisation, Applied microeconomics and international trade.

• **Panayiota Flori – Lyssioutou, Associate Professor**

Public economics, Labour economics, Applied microeconomics and microeconometrics, Interhousehold and intrahousehold behavior.

• **Costas Hadjiyiannis, Associate Professor**

International trade, Game theory, Industrial organisation, Microeconomics.

• **Christis Hassapis, Associate Professor**

Macroeconomics and banking international finance.

• **Ioannis Kasparis, Associate Professor**

Time series econometrics, Specification testing, Asymptotic statistical theory.

• **Andros Kourtellos, Associate Professor**

Econometrics, Socioeconomic inequality and mobility, Economic growth, Macroeconomics, Forecasting.

• **Philippos Louis, Lecturer**

Game theory, Experimental economics, Institutional and market design, Organisational economics.

• **Theofanis P. Mamuneas, Professor**

Applied microeconomics and econometrics and public economics, Infrastructures, R&D spillovers and productivity, Growth.

• **Michael S. Michael, Professor**

International trade, Environmental economics, Public economics.

• **Marios Michaelides, Assistant Professor**

Labour economics, Unemployment, Labour market policy, Compensating differences, Migration.

• **Christoforos Pissarides, Professor**

Macroeconomics, Especially search theory, Unemployment, growth and Structural change.

• **Nicos Theodoropoulos, Assistant Professor**

Labour economics, Econometrics.

• **Andreas Tryphonides, Lecturer**

Applied and quantitative macroeconomics, Econometrics.

• **Nikolaos Tsakas, Assistant Professor**

Microeconomics, Social and economics networks, Experimental economics, Game theory, Industrial organization.

• **Dimitrios Xefferis, Assistant Professor**

Political economics, Social choice, Applied game theory, Microeconomic theory.

• **Marios Zachariadis, Professor**

Macroeconomics, Open economy macroeconomics, Economic growth.

• **Nicholas Ziros, Associate Professor**

Microeconomic theory, General equilibrium theory

## Contact Details

### DEPARTMENT SECRETARIAT

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## ECONOMICS RESEARCH CENTRE

The Economics Research Centre (CypERC) produces rigorous analyses on issues of the Cyprus economy using novel and state-of-the-art methodologies and building upon the in-depth institutional knowledge of the local economy the Centre has acquired over the years. The analyses produced at the Centre are communicated to a wide range of audiences, including the academic and business community, governmental organisations, NGOs, trade unions and the media. While emphasis is placed on subjects concerning the Cyprus economy, research at the ERC has a broad perspective and aims at results of high academic standard with wide international interest.

The modern economy is said to be 'the economy of knowledge and information' to emphasize the importance of investment in human capital for economic growth and prosperity. This relates to globalization and deregulation and the resulting increase in the intensity of competition in international and local markets. European orientation is leading the Cyprus economy to this increased competition and this renders economic research a high priority.

The ERC studies issues of the Cyprus economy on a continuous basis. It aims to encourage economists of high caliber to become involved in research on subjects of interest to the Cyprus economy. It also aims to serve as a channel for directing local and European research funds to economic research. Among the objectives of the ERC are to study topics of wider economic interest and publish articles in international academic journals.

In conclusion, the ERC aims to fill the gap resulting from the absence of adequate economic research in Cyprus and aspires to make a distinct contribution to the prosperity of the Cypriot people.

### Research Activities

The ERC has the required research infrastructure (suitably trained researchers, computer software and hardware, constantly updated databases, etc.) to respond in a timely and effective manner to research needs in a rapidly changing economy. The Centre also benefits from the expertise offered by established Academics in Cyprus and abroad participating in the research effort as Research Associates and Fellows. The research activities at the ERC are divided into sectors as follows:

#### Microeconomic and Welfare Analysis

The sector analyses topics regarding the economic welfare of households, the role of the state and productivity. Topical issues which are currently on the research agenda of the sector include the impact of social policy, the public-private pay gap in Europe, competitiveness and the construction of productivity indices for the Cypriot economy. The responsibilities of the sector include the coordination of the field research conducted for the collection of data for individuals aged 50 and over in Cyprus, as part of the European research project SHARE - Survey of Health, Ageing and Retirement in Europe.

#### Macroeconomic Forecasts and Analysis

The sector focuses on the development of models/tools for macroeconomic analysis of the Cypriot economy and forecasting economic indicators.

GDP growth and inflation forecasts are published quarterly along with an analysis of the outlook for the Cypriot economy. The sector analyses the Business and Consumer Survey data for Cyprus, which records business and consumer assessments regarding the current economic conditions as well as their expectations for various economic variables. The Surveys are published on a monthly basis.

#### Other Research Projects

This sector undertakes research on specialised topics such as the study of employment and unemployment in Europe, the development and applications of Mixed Data Sampling (MIDAS) models, the study of dynamic consumer behavior in car ownership, the development of a Composite Leading Indicator index for the Cyprus economy, intergenerational mobility of well-being and energy policy.

#### Operation

The ERC operates as an autonomous unit in the Economics Department of the University of Cyprus. Its Director is elected from among the senior staff of the Economics Department and has overall responsibility for administration and research supervision.

The ERC is managed by the Academic Council and the Advisory Council.

The Academic Council oversees the organisation and execution of research and consists of the project coordinators and the research fellows of the ERC.

The Council is composed by five to nine members from both the academic community and outside the academia; it advises the Director of the ERC on selecting research topics that will be of interest to Cyprus.

#### Director

**Elena Andreou, Professor**

#### Contact Details

##### SECRETARIAT

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# JOINT DEGREE PROGRAMMES

## I. MASTER IN BUSINESS ADMINISTRATION, MBA

The Accounting and Finance and the Business and Public Administration Departments jointly offer a Master in Business Administration (MBA) programme on both a full- and part-time basis. The aim of the programme is to develop students' management skills and decision-making abilities in a rapidly changing business environment.

### 1. The Professional MBA Programme (part-time study)

The Professional MBA Programme is a two-year, evening programme that meets the needs of professionals who are currently working and who wish to enhance their leadership abilities and effectiveness in their organizations, as well as acquire the tools for further professional development.

### 2. The MBA Programme (full-time study)

The duration of the programme is twelve months. In order to qualify for the MBA degree, students must complete a total of at least 90 ECTS.

## II. MASTER IN DATA SCIENCE (MDS)

The Programme is offered jointly by the Department of Business and Public Administration, the Department of Computer Science, and the Department of Mathematics and Statistics. It is expected to start in September 2021 and will be offered in English. Data Science is an inter-disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from Big Data. Data Science is quickly becoming a field of central importance to the strategy of modern organizations. There is an increasing need for highly trained employees, who can think across disciplines to transform data into actionable insights. The objective of the Programme is to provide students with a strong understanding of basic and advanced methods in statistical inference, machine learning, data visualization, and data mining, which are the essential skills a modern data scientist needs to possess. The completion of the Programme requires 90 ECTS and the duration is 1,5-year. The Programme offers 3 tracks (Computer Science Track / Statistics Track / Business Analytics Track). The first two semesters will be dedicated to core courses, while students will select a track at the end of the second semester.

## MASTER IN BUSINESS ADMINISTRATION, MBA

### 1. The Professional MBA Programme (part-time study)

The Professional MBA Programme is a two-year, evening programme that meets the needs of professionals who are currently working and who wish to enhance their leadership abilities and effectiveness in their organizations, as well as acquire the tools for further professional development.

To qualify for the MBA degree, students must complete a total of 90 ECTS. A total of 57 ECTS constitute the core curriculum, the intent of which is to introduce students to the fundamentals of the business disciplines. Students can customize their programme according to their professional needs and interests through elective courses (maximum 12 ECTS). A list of courses is available from the Department. Finally, the Applied Business Project (21 ECTS), which takes place during the last three terms, focuses on a real-life case within a corporate or government environment, and brings together teams of students with sponsor companies.

## Structure

	ECTS
<b>First Year</b>	
<b>Preparation Period</b>	
<b>August</b>	
MBA 502 Introduction to Accounting*	1
MBA 503 Business Mathematics and Statistics*	1
<b>First Term</b>	
<b>September - October</b>	
MBA 531 Business Economics	3.5
MBA 561 Leading and Managing Organisations	4
<b>Second Term</b>	
<b>November - December</b>	
MBA 511 Financial Accounting and Reporting	4
MBA 544 Business Statistics	3.5
<b>Third Term</b>	
<b>January - February</b>	
MBA 521 Financial Management	4
MBA 542 Managing Operations	3.5

<b>Fourth Term</b>	
<b>March - April</b>	
MBA 541 Methods for Management Decisions	3.5
MBA 522 Capital Markets and Investments	4
MBA 504 Corporate Learning**	1
<b>Fifth Term</b>	
<b>May - June</b>	
MBA 551 Marketing Management	4
MBA 543 Managing Information Systems	4
<b>Sixth Term</b>	
<b>September - October</b>	
MBA 512 Managerial Accounting	3.5
MBA 574 Principles of Communication	2
<b>Seventh Term</b>	
<b>November - December</b>	
MBA 562 Corporate Social Responsibility and Ethics	2
MBA 566 Leadership	4
<b>Eighth Term</b>	
<b>January - February</b>	
MBA 563 Entrepreneurship	4
<b>Ninth Term</b>	
<b>March - April</b>	
MBA 564 Strategic Management	3.5
Elective Courses	4
<b>Tenth Term</b>	
<b>May - June</b>	
Elective Courses	8
<b>Eleventh Term</b>	
<b>July - October</b>	
MBA 590 Applied Business Project	21
<b>Total</b>	<b>90-93</b>
* Preparatory course	
** Optional course	

## 2. The MBA Programme (full-time study)

The duration of the programme is twelve months. In order to qualify for the MBA degree, students must complete a total of at least 90 ECTS.

Courses equivalent to 57 ECTS constitute the core curriculum, which will introduce students to all areas of business administration. The courses also enable students to improve their analytical thinking and decision-making skills. The core courses are offered during the first four terms.

Programme participants must choose elective courses equivalent to 12 ECTS from a list of courses available from the Department. The elective courses cover all fields of business administration and are offered during terms four to six.

The Applied Business Project (21 ECTS) takes place during the last three terms, and enables students to apply the

knowledge acquired during the programme to an organization. The Applied Business Project reflects one of the central themes of the programme, which is teamwork. The complexity of the business environment forces managers to seek the integration of knowledge through collaboration.

## Structure

	ECTS
<b>First Year</b>	
<b>Preparation Period</b>	
<b>August</b>	
MBA 502 Introduction to Accounting*	1
MBA 503 Business Mathematics and Statistics*	1
<b>First Term</b>	
<b>September - October</b>	
MBA 531 Business Economics	3.5
MBA 551 Marketing Management	4
MBA 561 Leading and Managing Organisations	4
MBA 574 Principles of Communication	2
<b>Second Term</b>	
<b>November - December</b>	
MBA 511 Financial Accounting for Management Decisions	4
MBA 544 Business Statistics	3.5
MBA 562 Corporate Social Responsibility and Ethics	2
MBA 566 Leadership	4
<b>Third Term</b>	
<b>January-February</b>	
MBA 512 Managerial Accounting	3.5
MBA 521 Financial Management	4
MBA 542 Managing Operations	3.5
MBA 563 Entrepreneurship	4
<b>Fourth Term</b>	
<b>March-April</b>	
MBA 541 Methods for Management Decisions	3.5
MBA 564 Strategic Management	3.5
MBA 522 Capital Markets and Investments	4
MBA 504 Corporate Learning**	1
Elective Courses	4
<b>Fifth Term</b>	
<b>May-June</b>	
MBA 543 Managing Information Systems	4
Elective Courses	8
<b>Sixth Term</b>	
<b>July-October</b>	
MBA 590 Applied Business Project	21
<b>Total</b>	<b>90-93</b>
* Preparatory course	
** Optional course	

## Elective Courses for the MBA Programmes (part and full-time)

	ECTS
<b>Accounting</b>	
MBA 513 Corporations and Capital Markets	4
MBA 516 Corporate Governance	2
<b>Finance</b>	
MBA 524 Bank Financial Management	4
MBA 527 Enterprise Risk Management	4
MBA 801 Microeconomics of Competitiveness	5
<b>Management</b>	
MBA 530 From Theory to Practice	2
MBA 535 Machine Learning in Management	2
MBA 536 Technology and Business Transformation	2
MBA 565 Human Resource Management	4
MBA 567 Managing Change	2
MBA 568 Negotiations	2
MBA 569 Crisis Management	2
MBA 570 Creativity and Innovation	2
MBA 573 Emotional Intelligence	2
MBA 575 Recent Topics in Business and Public Administration	2
MBA 576 Managing Diversity	2
MBA 577 Creativity and Organisations	2
<b>Marketing</b>	
MBA 552 Digital Marketing	2
MBA 557 Sales Management	2
MBA 558 Consumer Behavior	2
MBA 803 International Marketing	4
<b>Operations</b>	
MBA 545 Service Management	4

## Courses Description for the MBA Programmes (part and full-time)

### **MBA 502 Introduction to Accounting (1 ECTS)**

This course is designed to familiarize students with basic accounting concepts. The course will introduce students to basic accounts, the accounting equation and the financial statements. We will then look at how numerous transactions affect different accounts, and examine the advantages and limitations of the accrual basis of accounting and the resulting year-end adjusting entries. The course will then explain how to apply the above information to merchandising companies.

### **MBA 503 Business Mathematics and Statistics (1 ECTS)**

The course reviews the fundamental mathematical concepts that will be required for subsequent MBA courses. Topics covered include Basic Calculus (functions, differentiation, and integration) and Linear Algebra (systems of equations and inequalities). The course also examines basic topics in statistics, such as elements of probability theory, probability distributions, measures of central tendency and dispersion.

### **MBA 511 Financial Accounting for Management Decisions (4 ECTS)**

The major objective of this course is to provide a framework for understanding the role and usefulness of financial information provided by: a) organizations through their annual reports or through other means of communication, b) other capital market participants, such as financial analysts, credit analysts, or managers, and c) the financial press. This course is designed to enable students to understand financial statements intelligently, and make well-informed business decisions based on the financial information incorporated in the major financial statements. Throughout the course, students are expected to always undertake the role of the decision maker or the role of any other major capital market participant (e.g., credit analyst or banker, manager, financial analyst) and make decisions based on the relevant financial information. All the aforementioned issues will be applied extensively to the Cypriot and international capital markets.

### **MBA 512 Managerial Accounting (3.5 ECTS)**

This course concentrates on the use of accounting information for costing, decision making and control in the firm. The first part introduces the principles of management accounting pertaining to cost behaviour, costing products and services, and using cost data in decision making. The second part addresses accounting as a vehicle for exercising control in the firm, and focuses on understanding the budgetary process, divisional performance measurement, compensation incentive systems, and the role of management accounting information in corporate governance.

### **MBA 521 Financial Management (4 ECTS)**

The course provides an introduction to Corporate Financial Management. It is designed to introduce students to the concepts and techniques necessary to analyze and implement optimal investment and financing decisions by firms. The course emphasizes the effects of time and uncertainty on decision-making. Topics include basic discounting techniques, stock and bond valuation, capital budgeting, asset pricing models, efficient markets, corporate governance, and debt policies.

### **MBA 522 Capital Markets and Investments (4 ECTS)**

This course focuses on the functioning of capital markets, the pricing of various financial instruments, and selecting and evaluating investment strategies in terms of their risk/return characteristics. The course emphasizes the fundamental principles of asset valuation and financing in competitive markets. Topics covered include capital markets, passive and active portfolio management, the CAPM and APT pricing models, basic option pricing, portfolio construction and performance evaluation.

### **MBA 531 Business Economics (3.5 ECTS)**

This course focuses on the application of economic principles and methodologies to business decision problems by introducing the microeconomic and macroeconomic tools used in the analysis of business problems. In this course students will deepen their understanding of economics and learn a variety of techniques that will allow them to solve business problems relating, among other things, to costs, prices, revenues, profits, and market structure. Students will also use computer simulation exercises to examine how the macro economy works (inflation, unemployment, deficits, etc.) and the difficulties confronting economic policy makers using monetary and fiscal policies.



#### **MBA 541 Methods for Management Decisions (4 ECTS)**

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The course focuses on scientific and systematic approaches to decision making and presents techniques for formulating and solving models for quantitative business problems. Tools and techniques presented include: decision trees, mathematical programming (optimization), network flow models, elements of queuing theory and simulation, time series analysis and forecasting. These are then applied to practical problems in resource allocation, production, inventory control, operations planning, finance and marketing.

#### **MBA 542 Managing Operations (3.5 ECTS)**

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The course examines all activities related to the management of the resources required to produce the goods and services provided by the organization. Topics examined include: introduction to operations management, operations strategy, process analysis, product design and process selection in manufacturing and services, strategic capacity, facility location, facility layout, Just-In-Time systems, introduction to supply chain management, production planning, quality management, and inventory systems.

#### **MBA 543 Management Information Systems (4 ECTS)**

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Information systems (IS) are pervasive in all business functions. The course examines the various types of IS encountered in modern businesses, their roles in supporting operations, managerial functions and competitive needs, challenges from the proliferation of IS and their strategic prospects. Technical issues related to IS infrastructure, hardware, software, networks and organization of data resources are examined with an emphasis on managerial issues related to the development, effective deployment, management and strategic business uses of IS resources.

#### **MBA 544 Business Statistics (3.5 ECTS)**

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The course presents the use of descriptive and inferential statistics in decision making. Topics covered include: describing and summarizing data, measures of central tendency and dispersion, probability distributions, the normal probability distribution, sampling methods and the central limit theorem, estimation and confidence intervals, hypothesis testing, analysis of variance, regression and correlation analysis. Emphasis is placed on practical applications using statistical analysis software.

#### **MBA 551 Marketing Management (4 ECTS)**

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This course provides an overall view of marketing's role in contemporary organizations and explores its relationship to other business functions. It presents the marketing planning process and shows that effective decision making builds on a thorough analysis and understanding of the marketing environment. It emphasizes how to determine the organization's marketing mix, including product, pricing, promotion, and distribution strategies. It discusses the main challenges currently faced by marketing managers and presents recent developments in marketing theory and practice.

#### **MBA 561 Leading and Managing Organizations (4 ECTS)**

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This course is designed to teach students how to be more effective managers in any organizational context, by giving them a framework for understanding how organizations function and how their individual staff members and work groups behave. Diversity, continuous application of new technologies and ever-greater interdependence – between individuals, work groups, and organizations – drastically challenge the skills and creativity of modern managers.

#### **MBA 562 Corporate Social Responsibility and Ethics (2 ECTS)**

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This course examines the foundations of moral reasoning and analyses the ethical issues that arise in a wide range of contemporary business practices. The central aim of the course is to enable students to develop a framework through which to recognize, critically analyze, and appropriately respond to the social, ethical, and political challenges and dilemmas as they arise in their careers.

#### **MBA 563 Entrepreneurship (4 ECTS)**

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The purpose of this course is to explore the many dimensions of new venture creation and growth. While most examples will be drawn from new venture formation, we will also examine cases in entrepreneurship, social and non-profit entrepreneurship. The class sessions will be devoted to conceptualizing, developing, and managing successful new ventures, ideas or products with the goal of creating a business plan.

#### **MBA 564 Strategic Management (3.5 ECTS)**

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The course explores a wide range of strategic issues facing businesses, focusing particularly on the sources of sustainable competitive advantage and the interaction between industry structure and organisational capabilities. It introduces a variety of modern strategy frameworks and methodologies and builds on core topics such as economics, organisational processes, operations and marketing.

#### **MBA 566 Leadership (4 ECTS)**

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This course discusses the fundamental aspects of Leadership, starting from the premise that Leadership is a process, not a position. The course focuses on the interaction among the leaders, the followers and the situation as a model for studying the leadership process, and it examines the traits and values of leaders, charismatic leadership, the problems encountered by current leaders and the role of emotional intelligence in dealing with these problems. Special emphasis is placed on "surviving leadership."

#### **MBA 574 Principles of Business Communication (2 ECTS)**

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Effective communication is an important skill in business. This course develops an awareness of the complexity involved in the communication process so that current and prospective Managers learn to communicate effectively both verbally and nonverbally within a business setting. Emphasis is placed on: developing a business communication plan; correctly identifying one's audience; the importance of communication in regards to company image. The elements of successful internal and within-group communication are also examined.

#### **MBA 590 Applied Business Project (21 ECTS)**

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The applied business project is the highlight of the program, as students must combine the knowledge and tools acquired during the MBA Program with practice. During the first part of the project, students will develop their research questions, as identified through an exploratory study. Upon completion of the first part of the project, students will have developed a course of action to examine the issues that need to be resolved (in the collaborating organization). The project will first be designed as a team effort supervised by a faculty member, and then will be implemented by the student teams. Teams collect and analyze information from the organization and propose applicable solutions. During this part, teams complete the writing of their applied business project and present their results to a committee.



# Faculty of ENGINEERING







# Department of Architecture

[www.ucy.ac.cy/arch](http://www.ucy.ac.cy/arch)

The aim of the Ph.D. Programme in Architecture is to promote scholarly research leading to learning and innovation according to international standards of excellence, in the broader discipline of Architecture and within multidisciplinary and interdisciplinary fields. The Ph.D. degree is research oriented; this allows identification of relevant international architectural issues while promoting opportunities for local architectural development. The thematic contents of the specific courses offered each semester are based on the educational and research interests of the faculty.

## Introduction

Architecture has many aspects, as aesthetic, technological, social, cultural, economic and political issues define the human environment. The Department of Architecture consequently has an important role to play in producing architectural skills and knowledge through research, in providing high quality education to students and practitioners of architecture alike. It will also enhance the much-needed dialogue among the parties directly or indirectly involved in its production.

The aim of the Department of Architecture is the education of architects who can successfully perform worldwide, but who also have the knowledge and sensitivity to respond and influence positively the built environment of Europe. In support of this, the Department of Architecture provides high quality degree programmes at both undergraduate and postgraduate levels. These programmes emphasize fundamental principles, that prepare architects concerned with the challenges of meeting society's needs in a rapidly changing environment. Students participate in research, planning and design in an academic environment, in cooperation with the faculty, research and professional organisations.

The Department of Architecture admits graduate students each year at the doctoral level (Ph.D. in Architecture).

## Research Areas

Research in the Ph.D. Programme in Architecture focuses on the following areas:

- Architectural Theory and History
- Architectural Communication Media
- Architectural Technology
- Urban Design
- Digital Architectural Design and Fabrication
- Energy and Environmental Design of Buildings
- Research by Design
- Architectural Conservation

For more details on the research part of the programme, please refer to the website of the faculty at: [www.ucy.ac.cy/arch/el/staff/academic](http://www.ucy.ac.cy/arch/el/staff/academic)

## Financial Support

The University of Cyprus supports many graduate students through teaching assistantships, the number of which fluctuates according to the needs of each year's programme of studies. There are also additional funding opportunities, information on which is available through the Student Welfare Service. Additionally, a number of students can be financially supported through research programmes.

## DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)

Graduate students are awarded a doctoral degree by the Department of Architecture, after successfully completing the required course of study and successfully defending and writing their Ph.D. thesis. The minimum duration of the Ph.D. Programme in Architecture for full-time students is 6 semesters.

## Admission Requirements

Applicants to the Ph.D. programme must possess a Diploma in Architecture (5-year course of study), or the equivalent of a Master (M.A. or M.Sc. in an area of philosophy, social sciences, fine arts, applied arts, civil engineering, environmental engineering, electrical engineering, mechanical engineering, informatics, administration or economic sciences), from an accredited university.

Candidates must submit an application form to the Department of Architecture, within the announced time limits.

For more information on the application and registration procedures, please refer to the Admission and Attendance Regulations– Application Requirements, or please consult the Graduate School or the Department Secretariat.

In addition to the general requirements, candidates are requested to state their intended focus area and expectations from their doctoral studies in their statement of purpose when applying. They are also requested to submit any other supportive documentation as evidence of their qualifications.

Applications are evaluated by the Graduate Admissions Committee of the Department of Architecture, which makes suggestions to the Council of the Department for final approval of the selected candidates for doctoral studies. The applicants to the Ph.D. programme are selected according to the following criteria:

- Quality of the applicant's background in breadth and depth, and past performance in his/her undergraduate and graduate studies.
- Indications of ability for original and innovative research in the proposed area of study.
- Relevance of the proposed field of research to the interests of the department, the university and society.
- Availability of graduate positions in the doctoral programme and the necessary infrastructure and resources to support the proposed doctoral work.
- Excellent knowledge of the English language is required for admission to the doctoral programme.

### Programme of Study

The programme of study leading to the Ph.D. Degree in Architecture requires the completion of a minimum of 240 ECTS in graduate level courses and research work, as follows:

#### • Graduate Courses (a total of 80 ECTS)

Graduate courses related to the Ph.D. thesis (students with a Diploma degree in Architecture are credited up to 24 ECTS of the required 80 ECTS and students with a Master's degree are credited up to 56 ECTS of the required 80 ECTS).

#### • Ph.D. Thesis Research (160 ECTS)

Students should select, in consultation with their advisors, the courses that will help them in the completion of their Ph.D. thesis. Any undergraduate courses and/or courses outside the programme of Architecture are recognised only after prior approval by the Graduate Committee of the Department of Architecture, following a justified petition by the student, signed by his Academic Advisor. In order to comply with the Ph.D. programme requirements, the Graduate Committee of the Department of Architecture must approve the petition before the student registers for the respective course.

### Ph.D. Thesis

#### Comprehensive Examination (CE)

Admission to candidacy for the Ph.D. programme is granted, when the student has satisfactorily passed a CE (written and oral), intended to evaluate fundamental ability and knowledge in Architecture, as well as specialized knowledge and understanding of the intended research area.

The CE covers three relevant subject areas from the main areas in architectural theory and history, architectural communication media, architectural technology and

urban design. For the written examination, a grade of at least 50% in all three areas is required. The oral examination should be taken within six weeks after the written examination.

### Doctoral Dissertation

The doctoral dissertation must address current and valid theoretical, scientific and/or technical issue(s) primarily by fundamental research, leading to the creation of new architecturally specific knowledge. Applied research and development aspects, leading to a prototype or an application of this basic research, may also be included as a secondary component of the dissertation. The research must be novel and original, and of the highest scholarly standards, qualifying it as acceptable for publication in international academic journals.

The intellectual merit of the dissertation must be based on significant research findings by the doctoral candidate, distinguished clearly from the work of others, testifying to the candidate's personal contribution and scholarship, and acknowledging support by others in or outside the University. In addition, the broader impacts of the research must be highlighted in the dissertation, in terms of opening new related areas or issues, and generating new theoretical, and/or technical applications and innovations.

### Dissertation Defence

Each doctoral candidate is required to defend the research during an oral dissertation defence before a five-member Examining Committee.

For more information on the comprehensive examination, the dissertation proposal, the doctoral dissertation and the dissertation defence, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department Secretariat.

### Categories of Graduate Courses

Students must successfully take a number of courses that are related to their graduate programme of studies in Architecture, that will credit them with the required number of ECTS according to their programme requirements. The following list shows the courses that may be offered from the programme of graduate studies in Architecture depending on the availability, and the educational and research interests of the faculty.

## List of Courses

<b>Constrained Elective Courses</b>	
ARH 500	Research Methodologies
ARH 502	Design Based Research
ARH 504	Independent Studies
ARH 602-609	Ph.D. Research
<b>Architectural Theory and History</b>	
ARH 510	Theories of Architecture
ARH 511	Architecture and the Critical History of Ecology
ARH 512	Architecture in Philosophy
ARH 514	Design Applications in Architectural History
ARH 516	Buildings in History
ARH 517	History and Critical Analysis of Conservation
ARH 518	Theory, History and Criticism
ARH 519	Advanced Topics in Architectural Theory and History
<b>Architectural Communication Media</b>	
ARH 520	Theoretical Investigations in Visual Communications
ARH 522	Advanced Computer Aided Design Topics
ARH 524	Virtual Reality and the Built Environment
ARH 526	Perception and Cognition in Architecture
ARH 528	Synergy between Visual Arts and Architecture for the Public Sphere
ARH 529	Advanced Topics in Architectural Communication Media
<b>Architectural Technology</b>	
ARH 530	Advanced Building Technology
ARH 532	Construction Design
ARH 534	Structural Building Design
ARH 536	Advanced Construction Materials Technology
ARH 538	Environmental Building Design
ARH 539	Advanced Topics in Architectural Technology
ARH 550	Special Topics on Recording and Documenting Buildings and Sites
<b>Urban Design</b>	
ARH 540	Mediterranean Cities and Social Phenomena
ARH 542	Space Syntax
ARH 544	Urbanism in History
ARH 546	Urban Design and Planning
ARH 548	Landscape Architecture and the Urban
ARH 549	Advanced Topics in Urban Planning
<b>Research Courses</b>	
ARH 610-611	Writing Stage
ARH 613	Dissertation Proposal ARH
ARH 700	Comprehensive Examination

## Courses Description

Each course description stipulates any necessary prerequisites and the number of ECTS. The ECTS are followed by three numbers that indicate the hours required for lectures including exercises, labs or studio work and homework (preparation and problem sets), respectively.

### Constrained Elective Courses

#### **ARH 510 Theories of Architecture (8 ECTS: 3-0-12)**

Investigation of written architectural theory through specifically architectural works, as well as through a wider framework. Interpretation of selected texts from Vitruvius to the twenty-first century. The relationship between theory and the larger social and practiced context of each age. Architectural theories and their implications in relation to tradition, change, innovation and revolution.

#### **ARH 511 Architecture and the Critical History of Ecology (8 ECTS: 3-0-12)**

How have concepts of "Nature" and "Environment" influenced architectural thought and practice? This history-theory of architecture course situates the development of ecological awareness, debate and practice in architecture within the larger historical and theoretical context of modern architecture. It covers topics from 19th C back-to-nature movements, to early 20th century community experiments, to mid-twentieth century debates on science, technology, urbanization, postcolonial modernization, and international development, all of which resonate with today's debates on environmental responsibility, and shaped current notions of eco-development, green architecture, sustainability, etc. The course requires basic knowledge of modern architectural history.

#### **ARH 512 Architecture in Philosophy (8 ECTS: 3-0-12)**

Consideration of the reciprocal relation between Architecture and Philosophy, throughout the historical and geographic spectrum of the western tradition. Discussion of thought from the Pre-Socratics to Husserl, Heidegger, Baudrillard, Merleau-Ponty, Foucault, Ricoeur, Derrida, Deleuze and others in conjunction with developments in Architecture. Architectural theories and their influences on the intellectual advances of various ages.

#### **ARH 514 Design Applications in Architectural History (8 ECTS: 3-0-12)**

Study of theoretical approaches to Architectural design from the early modern world to the twenty-first century. Comparative studies between the architectural and intellectual bodies of work and the designed and constructed environment of each epoch. Topics include theories of light, of infinity and of taxonomical and analytical systems, and design ideologies of the sign, of chaos, and of a-formity in the postmodern era.

#### **ARH 516 Buildings in History (8 ECTS: 3-0-12)**

In-depth research, analysis and documentation of individual buildings or groups of structures and spaces in local and regional contexts for conservation purposes. Development of critical observation and interpretative skills in the study of past Architectures.

#### **ARH 517 History and Critical Analysis of Conservation (8 ECTS: 3-0-12)**

The course includes a diachronic overview of the history of conservation and an in-depth critical analysis on the most recent trends on the conservation of historic buildings. The course employs a critical analysis of international charters and declarations regarding conservation and a systematic analysis on remarkable conservation works of historic buildings and works



of the modern movement. The course aims to develop a critical analysis of contemporary trends and theories on conservation through the investigation of various criteria, bringing forth the general principles of and an interdisciplinary methodology for the comprehensive protection of outstanding buildings of various periods.

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**ARH 518 Theory, History and Criticism (8 ECTS: 3-0-12)**

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Investigation of the variations of contemplative thought on the concept of history from an architectural perspective. Presentation and comparison of historical contexts and their theoretical and practiced approaches to that which preceded them. Discussion of alternative truths and development of critical attitudes towards the subjective nature of history.

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**ARH 519 Advanced Topics in Architectural Theory and History (8 ECTS: 3-0-12)**

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Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

## Architectural Communication Media

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**ARH 520 Theoretical Investigations in Visual Communications (8 ECTS: 3-0-12)**

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Theory and examination of the role that the visual occupies in art, architecture, cinema and related fields. Search for and discussion of common threads of development and common practices of dissemination in these related but distinct disciplines of cultural production.

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**ARH 522 Advanced Computer Aided Design Topics (8 ECTS: 3-0-12)**

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Review of computer aided design and programming techniques. Modelling, visualization and computerized production of architectures. Discussion and presentation of examples such as traditional building structures, large area systems, experimental web environments, and emerging hybrid typologies. Integrated project models including seamless information linkages between designers and manufacturers (CAD/CAM).

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**ARH 524 Virtual Reality and the Built Environment (8 ECTS: 3-0-12)**

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Examination of the concept of the virtual within contemporary urban experience. Theoretical engagement of the competition of visual clues with spatial and other signs in the city in the conception and construction of present and future visions of the built. Urban totalities as unavoidably part material and part virtual environments.

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**ARH 526 Perception and Cognition in Architecture (8 ECTS: 3-0-12)**

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Investigation of the perceptual and cognitive horizons within the experience of Architecture. Discussion and criticism of binary thought commencing with perception/cognition and engaging wider dualities such as nature/culture, structure/ornament, beauty/taste, etc.

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**ARH 528 Synergies between Visual Arts and Architecture for the Public Sphere (8 ECTS: 3-0-12)**

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Examination of synergies between contemporary visual arts and architectural practices advocating for the public sphere. The seminar focuses on collaborative structures between various disciplines that become agents for public engagement emphasizing the political dimension of the urban environment. The students are exposed to best practices both in Cyprus and on an international level and they are invited to redefine their relation to the public domain through such practices and their tools.

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**ARH 529 Advanced Topics in Architectural Communication Media (8 ECTS: 3-0-12)**

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Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

## Architectural Technology

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**ARH 530 Advanced Building Technology (8 ECTS: 3-0-12)**

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Case studies and architectural design analysis derived mainly from structural engineering issues. Introduction to architectural works with emphasis on structural, construction and environmental design aspects. A design project emphasizing structural and construction design is required from each student. Integrated course with CEE graduate Programme.

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**ARH 532 Construction Design (8 ECTS: 3-0-12)**

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Integration of architectural technology with the process of design and its objectives through construction design. Technology transfer in search of appropriate prototype applications in design projects. Construction detailing.

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**ARH 534 Structural Building Design (8 ECTS: 3-0-12)**

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Structural systems for special loading cases such as earthquakes and/or long-span structures and tall buildings. Architectural integration and investigation of the structural properties and systems behaviour and efficiency. Case studies analysis and individual design projects.

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**ARH 536 Advanced Construction Materials Technology (8 ECTS: 3-0-12)**

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Advanced studies in metals, adhesives, glasses, plastics, etc. and their effects on the present and future building industry and environment. Case studies in advanced materials applications and innovative building systems, addressing leading technologies, processes and applications.

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**ARH 538 Environmental Building Design (8 ECTS: 3-0-12)**

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This course aims to deepen the theoretical and applied knowledge of students on the Environmental Design of Buildings and to highlight the role of the architectural design, construction and appropriate technical support in order to ensure proper living conditions for the users of a building; minimizing energy consumption and reducing adverse environmental impacts.

The course covers issues concerning the bioclimatic architecture, which aims to improve the comfort conditions of users – thermal, visual, acoustic comfort, air quality – in the indoor built environment; issues that have to do with energy design aiming to the minimization of energy consumption of the building envelope as well as issues of ecological construction regarding the minimization of the ecological footprint.

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**ARH 539 Advanced Topics in Architectural Technology (8 ECTS: 3-0-12)**

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Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

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**ARH 550 Special Topics on Recording and Documenting Buildings and Sites (8 ECTS: 3-0-12)**

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The course provides basic and advanced knowledge on recording and documenting buildings and sites using conventional and contemporary digital techniques. It aims at introducing research tools and methodological approaches of in-situ recording of buildings, sites and individual building elements, while it includes methodologies for the evaluation and processing of monitoring data. Moreover, the course refers to the recording and analysis of the indoor comfort and energy

efficiency of buildings. Among others, it refers to the documenting of functional particularities and to specific comfort requirements of buildings, while it includes quantitative recordings and analysis of the parameters defining comfort conditions.

## Urban Planning

### **ARH 540 Mediterranean Cities and Social Phenomena (8 ECTS: 3-0-12)**

The course focuses on the understanding of the ways in which urban social phenomena both influence and are influenced by the morphology and planning of the city. Emphasis will be given on the formulation of novel readings, methodologies and interpretations of the multiple and complex cultural practices in Mediterranean urban space in an attempt to enrich and broaden knowledge and urban design processes.

### **ARH 542 Space Syntax (8 ECTS: 3-0-12)**

Analysis of the spatial characteristics of internal and external space through the use of qualitative and quantitative tools. Case studies in the form of post-occupancy evaluations, comparing the intended with the actual use of different spatial configurations. Subject matter ranges from houses to complex buildings, and from small public squares to large urban entities.

### **ARH 544 Urbanism in History (8 ECTS: 3-0-12)**

Examination of specific topics in the history of Urbanism through the study of its intellectual and social context. Focus oscillates between utopian and theoretical to religious and political manifestations of Urban Design. Content and methodology emphasize as well as rely on an inter-disciplinary approach to the subject, and are inclusive, but not exhaustive of, literature, poetry, painting, music, and cinema.

### **ARH 546 Urban Design and Planning (8 ECTS: 3-0-12)**

Investigation of planning principles necessary for the communication between architects, urban designers and urban planners when dealing with contemporary urban complexity. Discussion of the complementary nature of Architecture, Urban Design and Urban Planning. Reports and projects of theoretical and applicable proposed models of cooperation in specific cities in Cyprus and surrounding countries and regions.

### **ARH 548 Landscape Architecture and the Urban (8 ECTS: 3-0-12)**

The nature of Nature. Engagement and study of various natural and constructed landscapes. Theory, site analysis and landscape design both in the local as well as the regional urban context. Consideration of themes such as climate, water shortage, topography, geology, natural vegetation and culture in Cyprus and surrounding countries and regions.

### **ARH 549 Advanced Topics in Urban Planning (8 ECTS: 3-0-12)**

Subjects in this course will vary according to emerging students' needs or requests and the faculty's educational and research interests. The coursework consists of a workshop and a survey course based on best practices in sustainable urban design and development, with a particular focus on the challenges facing the Eastern Mediterranean region. The coursework is organized in the form of a workshop and includes thematic presentations, the analysis of cases studies, role playing and visioning exercises and a final master-planning exercise in a location to be specified by the instructor.

## Research Courses

### **ARH 610-611 Writing Stage**

(ECTS units assigned by the Thesis Advisor)

Writing stage of the dissertation.

### **ARH 613 Dissertation Proposal (0 ECTS)**

Comprehensive oral presentation on the proposed work before the Dissertation Committee.

### **ARH 700 Comprehensive Examination (0 ECTS)**

Comprehensive Examination (written and oral), intended to evaluate fundamental ability and knowledge in Architecture, as well as specialized knowledge and understanding of the intended research area.

## Research Interests of the Academic Staff

### • Konstantinos Avraamides, Lecturer

Research by design; Architectural design; Architectural communication; Art and/in urban space; Visual culture; Cultural landscapes.

### • Nadia Charalambous, Associate Professor

Theories on space and society, Urban segregation, Architectural pedagogy.

### • Christos Hadjichristos, Associate Professor

The relationship between architectural theory, knowledge, pedagogy and practice, Existing and alternative media of communication in architectural design, The house as an architectural and social project, Architectural and urban spatial configurations, Layering as a design tool.

### • Popi Iacovou, Lecturer

Architecture and performance: Theory and practice, Architecture and the moving image, Communication media in architecture, Architectural design.

### • Odysseas Kontovourkis, Assistant Professor

Computational design and robotic fabrication, Robots in sustainable construction, Computer-aided design/Computer-aided manufacturing (CAD/CAM), Parametric-associative design and physics-based computer modeling, Pedestrian movement behavior modelling and circulation design, Adaptation and interaction in architectural systems.

### • Aimilios Michael, Assistant Professor

Energy and environmental design of buildings, Architectural technology, Integrated architectural design and technology, Advanced building envelope design, Innovative & sustainable construction components and materials.

### • Maria Philokyprou, Associate Professor

Architectural conservation; Vernacular architecture of Cyprus; Preservation and promotion of the built environment, Environmental features of vernacular architecture; Traditional architectural technology; Traditional building materials.

### • Marios C. Phocas, Professor

Architectural technology, Technology-driven design: Integrated architectural design, Interdisciplinary performance-based design, Structural and construction design, Kinetic structures: Reconfigurable structures, adaptive Compliant structures, Earthquake engineering: Passive structural control and seismic isolation.

### • Panayiota Pyla, Associate Professor

History-theory of modern architecture, Planning history and development politics, Social dimensions of sustainable design, Cultural heritage and conflict in the Middle East.

### • Andreas L. Savvides, Associate Professor

Sustainable urban design, Regional and urban planning and development, Regeneration of underperforming and underutilized urban cores, Housing - environmental and the cultural factors pertaining to redevelopment, Planning for transit oriented development.

### • Socrates Stratis, Associate Professor

Urban design and planning, Critical spatial practices, Research by design, Architecture as politics, Contested spaces and conflicts, Urban commons.

## Contact Details

### POSTGRADUATE PROGRAMME COORDINATOR

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### DEPARTMENT SECRETARIAT

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# Department of Civil and Environmental Engineering

[www.ucy.ac.cy/cee](http://www.ucy.ac.cy/cee)

The Department admits students each year into its graduate programmes at the Master (M.Sc. and M.Eng.) and Doctoral (Ph.D.) levels, offering the following six graduate degrees:

- Master of Science (M.Sc.) in Civil Engineering
  - Specializing in:
    1. Earthquake Engineering
    2. Structural Analysis
    3. Novel and Traditional Building Materials
    4. Geotechnical Engineering
    5. Construction and Transport Infrastructure Management
- Master of Science (M.Sc.) in Environmental Engineering
- Master of Engineering (M.Eng.) in Civil Engineering
  - Specializing in:
    1. Earthquake Engineering
    2. Structural Analysis
    3. Novel and Traditional Building Materials
    4. Geotechnical Engineering
    5. Construction and Transport Infrastructure Management
- Master of Engineering (M.Eng.) in Environmental Engineering
- Doctor of Philosophy (Ph.D.) in Civil Engineering
- Doctor of Philosophy (Ph.D.) in Environmental Engineering

## Introduction

Civil and Environmental Engineering plays a significant role in building modern society. The field of civil and environmental engineering encompasses the design, construction, management and maintenance of the infrastructure on which society relies. In addition to the buildings in which we live and work, the roads and the bridges we use every day, society depends on civil and environmental engineers for providing clean water, energy, waste management and to protect the natural environment.

The Department of Civil and Environmental Engineering (CEE) provides high quality degree programmes at both undergraduate and postgraduate levels. These programmes emphasize fundamental principles that prepare young engineers concerned with the challenges of meeting society's needs in a rapidly changing environment. CEE students undertake investigation, research, planning and design in an academic environment that is based on cooperation between faculty, students, industry, research and professional organisations. The students study in a dynamic environment and have the opportunity

to work with and learn from research teams at the forefront of knowledge.

The aim of the graduate programmes of the CEE Department is to promote scholarly research leading to discovery, learning and innovation according to international standards of excellence, in the broader discipline of CEE, as well as in related multi-disciplinary and interdisciplinary fields. The department's graduate programmes are research-oriented in order to support and strengthen the research and educational activities of the Department and the University. The research focuses on areas that serve the interests of Cypriot society, by identifying and providing solutions to local issues and by promoting opportunities for local development and for the improvement of life in Cyprus.

## Research Areas

The major research areas of the CEE Department are the following:

- Materials and Mechanics
- Structural and Earthquake Engineering

- Construction Management
- Computational Mechanics
- Computer-Aided Civil Engineering
- Geomechanics
- Transportation Systems
- Management of Water Resources
- Wastewater Treatment and Management
- Environmental Pollution Control
- Environmental Management Systems

## Financial Support

The CEE Department supports several graduate students through scholarships, teaching assistantships, and research grants.

## MASTER'S PROGRAMMES (M.Sc., M.Eng.)

The CEE Department offers two levels of graduate studies at the Master's level, namely, the Master of Engineering (M.Eng.) and the Master of Science (M.Sc.) in Civil Engineering or Environmental Engineering. The Masters of Science focuses on research, having a smaller number of courses to attend and placing emphasis upon the completion of a research thesis with higher demands. A transfer between the two academic tracks is allowed only after an application by the student and approval by the Departmental Board. The Department also reserves the right to mandate a student transfer between the two academic tracks (from M.Sc. to M.Eng.), if the student's academic performance during the required M.Sc. research/thesis is unsatisfactory, and his advisor recommends it.

## Civil Engineering: Specializations

The Master of Engineering and Master of Science (M.Eng. and M.Sc. respectively) in Civil Engineering is offered in five thrusts of specialization as listed below; to specialize in any of these areas the graduate must fulfill certain course and research work requirements :

1. Earthquake Engineering
2. Structural Analysis
3. Novel and Traditional Building Materials
4. Geotechnical Engineering
5. Construction and Transport Infrastructure Management

More specifically, for the Master of Engineering and Master of Science Degrees (M.Eng. and M.Sc.) courses are grouped in four categories from which each student must successfully attend a specific number, in order to fulfill the requirements of the specialty thrust selected, as follows:

Categories	Description
A	Core Specialization Graduate Courses
B	Elective Specialization Graduate Courses
C	CEE Graduate Courses other than those in Categories A and B
D	UCY Graduate Courses

For the Master of Engineering and Master of Science Degrees (M.Eng. and M.Sc.) in Civil Engineering, for each of the five thrusts, a number of successfully completed courses is required, as follows:

Courses:	A	B	C	D
M.Eng.	≥5	≥3	≤1	≤1
M.Sc.	≥ 4	≥1	≤1	

Therefore, completion of an M.Eng. Degree in Civil Engineering in any particular thrust which requires successful passing of 10 graduate courses, the requirements correspond to at least 5 graduate courses from group A and at least 3 graduate courses from group B, while up to 1 course is allowed from group C and up to 1 course from group D, as specified for the particular thrust of specialization. For example, a student could take 6 courses from group-A and 4 courses from group B, or 5 courses from group-A, 4 courses from group-B and 1 course from group C or D, as specified for the particular specialization.

Respectively, for a Master of Science in Civil Engineering, which is more research-oriented and requires only 7 successfully completed graduate courses, at least 4 graduate courses are required from group-A, at least 1 graduate course is required from group-B and up to 1 graduate course is required either from group C or D, as defined for each thrust. For example, a student could select 5 graduate courses from category-A and 2 courses from group-B, or 4 courses from group-A, 2 courses from group-B and 1 course either from group C or D.

## Environmental Engineering

For the Master of Engineering and Master of Science (M.Eng. and M.Sc.) in Environmental Engineering 10 and 7 graduate courses respectively, must be successfully completed, while only one of these courses cannot be part of the course-catalogue for Environmental Engineering. After approval given by the student's Research Supervisor, a second course that is not included in the catalogue can be taken.

## Admission to the Master's Programmes

Applicants to the Master's programmes must possess the equivalent of a B.Sc. Degree in Civil and/or Environmental Engineering, or in a related field of science or engineering, from the University of Cyprus or other accredited institution or programmes.

Candidates must submit an application to the Department of Civil and Environmental Engineering within a specific time frame. For details on the application procedure and the evaluation of the candidates, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat.

In addition to the general admission requirements, the Department requests from the applicant a statement on his goals and objectives, an intended focus area and

expectations from the graduate studies and other supportive documentations regarding the applicant's qualifications.

Applications are evaluated by the Graduate Committee of the CEE Department, which makes suggestions to the Departmental Board for final approval of the selected candidates. Applicants to the Master's programme are selected according to the following criteria, while the CEE Department reserves its right to fill only as many announced graduate student positions as the Department considers appropriate:

- Quality of the applicant's background in breadth and depth, and past performance in undergraduate or graduate studies.
- Evidence of ability for original and innovative research in the proposed area of study.
- Relevance of the proposed field of research to the interests of the Department, the University and the society.
- Availability of graduate positions in the programme and the necessary infrastructure and resources to support the proposed M.Sc. research work.
- Good knowledge of the English language.

### MASTER OF SCIENCE DEGREE (M.Sc.)

The M.Sc. Degree is awarded to graduate students of the Department of Civil and Environmental Engineering, upon successful completion of the required number of courses and ECTS units, according to the graduate programme of studies, and upon writing and presenting a successful defence of the M.Sc. thesis. The student is awarded either an M.Sc. Degree in Civil Engineering or an M.Sc. Degree in Environmental Engineering, depending on the research area of the student's thesis.

The minimum duration of the M.Sc. programme for full-time students in Civil and Environmental Engineering is three semesters, including the summer between the two academic years. The maximum duration allowed for completion of the M.Sc. degree is eight semesters.

### Programme of Studies for the M.Sc. Degree

The programme of studies at the University of Cyprus is based on the European Credit Transfer and Accumulation System (ECTS). The programme of study leading to the M.Sc. degree in Civil Engineering and M.Sc. degree in Environmental Engineering requires the completion of at least 110 ECTS of graduate course, seminars and research work beyond the Bachelors degree, distributed as follows:

	ECTS
<b>Coursework</b>	<b>56</b>
Graduate Courses (56 ECTS)	
CEE 610 Graduate Seminar (8 attendances) (0 ECTS)	
<b>Thesis Research (CEE 680)</b>	<b>54</b>
<b>Total</b>	<b>110</b>

The Course Independent Study (CEE 650) can be counted as one graduate course for the specializations in Civil Engineering or for Environmental Engineering (Annex-3) and must focus on a different topic from that the M.Sc. research. For the M.Sc. in Civil Engineering, the Independent Study may be counted for any specialization as a course of group A or B. A student may be credited with a maximum of 8 ECTS under the Independent Study course. If a student has successfully attended graduate courses in the framework of another postgraduate programme, they can be credited with up to 16 ECTS, provided that these courses have not been taken into consideration in order to acquire another postgraduate title.

### MASTER OF SCIENCE (M.Sc.) THESIS

The M.Sc. Degree requires the successful completion of original research work and a corresponding M.Sc. Thesis (CEE 680), which should be successfully presented and examined. The topic of the student's research is chosen in consultation with his Advisor (Supervisor). The student must submit copies of the thesis to the members of the Thesis Committee at least 1 week prior to its defense. The thesis defense is open to the public and consists of a presentation by the candidate, which should not be longer than 30 minutes, followed by an open discussion and a closed session with the Thesis Committee. The Thesis Committee is responsible for approving the candidate's thesis and defense presentation and in the event that these are deemed inadequate, the Committee will suggest the appropriate revisions to the thesis and a corresponding timeline for the candidate to make/complete those revisions.

For the completion of this process, the candidate should submit two original copies of the thesis (one for the CEE Department records and one for the University of Cyprus Library) bound and signed in accordance with the University regulations, as well as one electronic copy of the thesis for dissemination purposes.

If the thesis is rejected, the candidate may request a second opportunity to defend his research. In that case, the time and terms for resubmission and defense are determined by the Thesis Committee in writing.

M.Sc. theses may be graded as "Excellent", "Very Good", "Good" or "Inadequate". The intellectual merit of the thesis must be based on research findings by the M.Sc. candidate, distinguished clearly from the work of others, testifying to the candidate's personal contribution and acknowledging support by others within or outside the University.

### Research Advisor (Supervisor)

After the M.Sc. student and his Supervisor have mutually agreed to pursue their research collaboration, the student must submit a memorandum of understanding to the Graduate Studies Committee, signed by the Academic Advisor who has taken the student under his supervision. The Academic Advisor supervises the student's research or other work and offers the necessary guidance. The Academic Advisor is also responsible for recommending



the members of the student's Thesis Committee to the Department's Faculty Council for approval, through the Graduate Studies Committee. The Thesis Committee consists of the Thesis Advisor as the head of the Committee and at least another faculty member, either from within or outside the University of Cyprus. External Committee members can only be faculty members of other accredited institutions or research centers or other qualified experts holding a Ph.D. Degree.

For more information on the procedure of submitting and defending the thesis, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat.

### Indicative Programme of Studies

The following programme of studies for the Master of Science in Civil Engineering or in Environmental Engineering (M.Sc.) may be completed in 1.5 academic years, provided that students undertake their research during the summer months between the second and third academic semesters.

	ECTS
<b>First Semester (Fall)</b>	
4 Graduate Courses (4x8)	32
<b>Total</b>	<b>32</b>
<b>Second Semester (Spring)</b>	
3 Graduate Courses (3x8)	24
CEE 680-683 M.Sc. Research	6
<b>Total</b>	<b>30</b>
<b>Summer</b>	
CEE 680-683 M.Sc. Research	17
<b>Total</b>	<b>17</b>
<b>Third Semester (Fall)</b>	
CEE 610 Graduate Seminar	0
CEE 680 M.Sc. Research	31
<b>Total</b>	<b>31</b>

### MASTER OF ENGINEERING DEGREE (M.Eng.)

The degree of Master of Engineering (M.Eng.) in Civil Engineering in one of the aforementioned specializations, or Master of Engineering (M.Eng.) in Environmental Engineering is awarded to graduate students of the Department upon successful completion of the M.Eng. programme of studies, depending on the nature of the graduate courses the student has completed.

### Programme of Studies for the M.Sc. Degree

The required workload for the Master of Engineering in either Civil or Environmental Engineering corresponds to the successful completion of 90 ECTS of graduate courses and seminars as follows:

	ECTS
<b>Coursework</b>	
Graduate Courses (80 ECTS)	56
CEE 610 Graduate Seminar (8 attendances) (0 ECTS)	
<b>Thesis Research (CEE 680)</b>	<b>54</b>
<b>Total</b>	<b>110</b>

### Indicative Programme of Studies

The following programme of studies for the Master of Engineering in Civil Engineering or in Environmental Engineering (M.Eng.) may be completed in 1.5 academic years.

	ECTS
<b>First Semester (Fall)</b>	
4 Graduate Courses (4x8)	3
<b>Total</b>	<b>32</b>
<b>Second Semester (Spring)</b>	
4 Graduate Courses (4x8)	32
<b>Total</b>	<b>32</b>
<b>Third Semester (Fall)</b>	
2 Graduate Courses (2x8)	16
CEE Graduate Seminar 0	
CEE 689 Research Project	10
<b>Total</b>	<b>26</b>

### DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)

A graduate student is awarded a doctorate degree by the Department of Civil and Environmental Engineering, upon completion of the required programme of study and successful writing and defence of a Ph.D. thesis. Depending on the research area of the thesis, the student is awarded either a Ph.D. in Civil Engineering or a Ph.D. in Environmental Engineering.

### Admission to the Ph.D. Programme

The applicants to the Ph.D. programme must possess the equivalent of a B.Sc. or M.Sc. degree in Civil and/or Environmental Engineering, or in a related field of science or engineering, from the University of Cyprus or another accredited university.

Candidates must submit an application to the Department of Civil and Environmental Engineering within the announced deadline. For more information on the application procedure and the evaluation of the candidates, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat.

In addition to the general requirements, candidates are requested to submit a statement of purpose detailing their motivation, goals and objectives, an intended focus

area and expectations from the doctoral studies, three letters of recommendation from academics familiar with their past work and future promise, as well as other supportive documentation as evidence of their academic qualifications.

Applications are evaluated by the Graduate Committee of the CEE Department and the selection criteria are the same as for the M.Sc. or M.Eng. programmes (see relevant paragraph above).

## Programme of Study

The programme of study leading to a Ph.D. in Civil or Environmental Engineering requires the successful completion of at least 240 ECTS, through a combination of graduate courses, seminars and research work. The minimum length of study for full-time students is six academic semesters and the maximum allowable length of study is eight academic years.

The 240 ECTS required for the Ph.D. degree are distributed as follows:

	ECTS
<b>Coursework</b>	<b>80</b>
Graduate Courses in CEE related to the Ph.D. Programme (48 ECTS)	
CEE 610 Graduate Seminar (16 attendances) (0 ECTS)	
<b>Thesis Research (CEE 680)</b>	<b>160</b>
<b>Total</b>	<b>240</b>

Courses from the first course group (Graduate CEE courses related to the Ph.D. research) should all be from the list of courses relevant to the degree sought (civil engineering or environmental engineering).

The course Independent Study (CEE 650 or CEE 651) counts as a course of the second category (Graduate courses in/outside CEE programmes) and must focus on a different topic from that of the Ph.D. research. A maximum of 8 ECTS of Independent Study may be credited towards the Ph.D. degree. Courses outside the CEE department may be selected, but only upon the approval of the student's Academic Advisor.

Students, who have joined the doctoral programme after successfully completing a relevant Master's programme, can be credited with a maximum of 56 ECTS for graduate courses that they have successfully attended previously. These 56 ECTS count towards the fulfillment of the required 80 ECTS coursework. The maximum number of ECTS that can be credited to students with a graduate degree in Civil or Environmental Engineering is 56, while the maximum number of ECTS that can be credited to students with a graduate degree in other fields of study is 32. The crediting of ECTS is not automatic; it is subject to the approval of the Department's Council based on recommendations made by the CEE Graduate Studies Committee. The Committee's recommendations follow a well-documented petition by the student and relevant recommendation by his Academic Advisor. For the

fulfillment of the required 80 ECTS coursework, the student must choose and successfully attend courses that are not the same or similar with those credited from previous studies.

Students should select, in consultation with their Advisors, the courses that will help them toward the completion of their Ph.D. thesis. Graduate courses from outside the CEE Department may be accepted, subject to prior approval from the CEE Graduate Studies Committee and upon application by the student which has been approved by his Advisor. In order for the selected courses to count towards the requirements of the Ph.D. programme, the CEE Graduate Studies Committee must approve the petition before the student registers for the respective courses.

## Qualifying Examination

Admission to candidacy for the Ph.D. programme is actually granted, when the student has successfully passed a written qualifying examination, which intends to assess fundamental knowledge and ability in Civil or Environmental Engineering, as well as more specialized knowledge and understanding of the intended research area.

The topics in the qualifying examination cover three areas of study and are set by at least three faculty members, with equal score weight (1/3) for each topic. The weight per member of the Qualifying Exam Committee in the total score of an exam should not exceed 40%. The Ph.D. candidates' written solutions of the exam questions are evaluated by the Qualifying Exam Committee. The areas of study examined and the Qualifying Exam Committee for each candidate are assigned by the Department's Council, upon recommendation from the CEE Graduate Studies Committee based on a written application by the candidate's Academic Advisor. The CEE Graduate Studies Committee should ensure that the topics per examination area and student are of equal depth and level of difficulty at each examination period. The qualifying exam lasts for 4 hours. The results of a candidate's qualifying exam are considered successful, when the candidate earns a total score of at least 60%. In the event of not meeting the 60% minimum passing grade, a Ph.D. candidate is allowed to retake the exam one more time prior to the completion of the 5th academic semester of study in the Ph.D. programme. In this re-examination, the student has the right to be examined only in those areas where the score attained in the first examination was less than 50%, provided that a score of at least 40% was obtained in all areas.

The exam is given in the beginning of the fall and spring semesters (it is usually scheduled during the second week from the start of each academic semester).

## Dissertation Proposal

Each doctoral student must prepare a brief written proposal of the intended doctoral research and make a comprehensive oral presentation on the proposed work, that demonstrates a sound understanding of the

dissertation topic and awareness in depth of the relevant literature, the research methodology that is necessary. The proposal presents the work done on the topic by the student to-date, as well as the intended steps to be taken toward the completion of the doctoral thesis.

The proposal must be scheduled according to the Regulations of Graduate Studies. The written proposal must be submitted to the candidate's three-member Doctoral Examination Committee, at least one week before the date of the examination. This Committee is assigned for each candidate by the Department's Council upon recommendation by the CEE Graduate Studies Committee, based on a written petition by the candidate's Academic Advisor. One of the Committee's members may be from another academic department of the University of Cyprus in a field of study relevant to the doctoral candidate's thesis research, or from another university, or research center. The oral presentation given to the three-member Doctoral Examination Committee should not exceed the time limit of 30 minutes and be followed by a discussion with the Committee members. If the Committee members have concerns about either the substance of the proposal or the student's understanding of the topic, then the student will have to prepare a second presentation that focuses on the areas of concern. The second presentation has a tentative duration of 15 minutes and is followed by a new discussion with the Committee members. Students can continue their research only if the proposal is approved.

## Doctoral Dissertation

The Doctoral Degree requires the successful completion of original research work and a thesis. A doctoral candidate's research topic is selected in collaboration with the candidate's Academic Advisor. The level of quality of doctoral theses is warranted through the fulfillment and satisfaction of basic conditions, as these are stated by the University's Senate (Rules of Study and Student Issues of the University of Cyprus and Graduate Studies Regulations). It is therefore imperative that all doctoral students study these guidelines carefully.

## Dissertation Defense

Each doctoral candidate is required to defend the originality and quality of his research during an oral dissertation defense, which is administered by the Examination Committee consisting of at least 5 members. This Committee is assigned by the Department's Council upon recommendation of the Department's Graduate Studies Committee, in consultation with the candidate's Academic Advisor. The Examination Committee includes three CEE faculty members (one of which is the candidate's Academic Advisor), one member from another university or research institute and one member from the faculty of another department of the University, who has relevant knowledge to the Ph.D. research topic or from another university or research institute. The Examination Committee is chaired by a member of the CEE Department, but not the Thesis Advisor.

The candidate is required, at least one month prior to the thesis defense, to submit a copy of the dissertation to each member of the Examination Committee. At the same time, the candidate must make an additional copy available to any member of the University Community, wishing to read the dissertation prior to the defense, and must also arrange for the issuance of a public notification of the upcoming defense by the CEE Graduate Studies Committee.

A thesis defense consists of three stages: (a) a public presentation of the doctoral research work by the candidate with a maximum duration of 60 minutes, which is followed by public discussion, (b) a discussion on the thesis work with the Examination Committee members, and (c) a concluding closed session of the Examination Committee for making a collective assessment of the doctoral work.

The Examining Committee will determine the acceptability of the candidate's dissertation and oral performance, and propose modifications to the written dissertation if appropriate, as well as a time plan for the candidate to address such changes in mutual agreement with the Thesis Advisor.

Upon the completion of the candidate's doctoral defense, the Examination Committee submits in writing to the CEE Chairman its justified recommendation, together with possible comments on the candidate's thesis. The Chairman forwards the Committee's recommendation to the University Senate for approval. In the event that the Examination Committee recommends modifications or improvements to the doctoral thesis in question, final approval by the Senate is granted only after the Academic Advisor confirms in writing the successful compliance to the Committee's comments. The candidate must then submit two original hard copies of the dissertation, one to the University library and one for the CEE Department records, as well as an electronic version of the dissertation to the CEE Department for documentation and dissemination. If the dissertation is rejected, the candidate is entitled to request a repetition of the defense one more time. In this case, the terms for resubmission of the dissertation must be set out in writing by the Examination Committee.

For more information on the procedures for the comprehensive examination, the dissertation proposal, the doctoral dissertation, the dissertation defence and the composition of the Committees, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat.

## Graduate Level Courses

Students must successfully take a number of courses related to their graduate programme of study, i.e. civil or environmental engineering, that will credit them with the required number of ECTS according to their programme requirements. The following tables indicate the two



groups of courses that correspond to civil and environmental engineering, from which students may select the relevant courses. The related tables also define the courses of categories A and B, with regards to the five specializations of the Civil Engineering Degrees.

## Civil Engineering Courses

CEE 500	Engineering Applications with Software Development
CEE 501	Advanced Computer-Aided Structural Analysis
CEE 509	Computational Mechanics
CEE 511	Construction Engineering and Management
CEE 512	Risk Analysis in Civil and Environmental Engineering
CEE 513	Specifications and Conditions of Construction Contracts
CEE 515	Advanced Topics in Construction Management
CEE 516	Building Information Models
CEE 517	Operations Research in Civil and Environmental Engineering
CEE 521	Structural Dynamics and Earthquake Engineering
CEE 522	Advanced Topics in Earthquake Engineering
CEE 523	Passive and Active Control of Structural Systems
CEE 526	Finite Element Methods
CEE 528	Advanced Topics in Structural Analysis
CEE 531	Seismic Behavior and Assessment of Reinforced Concrete Structures
CEE 532	Advanced Technology of Materials
CEE 533	Local and Traditional Building Materials
CEE 534	Physical Properties and Related Durability Problems of Construction Materials
CEE 535	Plasticity Theory
CEE 536	Energy Efficiency of Buildings
CEE 537	Rehabilitation and Strengthening of Structures
CEE 538	Experimental Methods in Structural Engineering
CEE 539	Advanced Topics in Novel and Traditional Construction Materials
CEE 540	Behavior and Design of Reinforced Concrete Structures
CEE 543	Bridge Engineering
CEE 545	Nonlinear Structural Analysis
CEE 546	Building Physics
CEE 547	Masonry Structures
CEE 555	Soil Dynamics and Engineering Seismology
CEE 556	Advanced Foundation Engineering
CEE 557	Coastal and Offshore Geotechnical Engineering
CEE 558	Advanced Topics in Geotechnical Engineering
CEE 560	Advanced Transport Planning
CEE 561	Highway Design and Road Safety
CEE 562	Asphalt Materials
CEE 563	Advanced Topics in Traffic Engineering and Intelligent Transport Systems-ITS
CEE 564	Civil/Transport Economics and Finance
CEE 565	Multi-Modal Systems and Logistics
CEE 566	Transit Systems

CEE 567	Advanced Topics in Transport Infrastructure
CEE 574	Environmental Geotechnics
CEE 586	Sustainable Built Environment
CEE 650	Independent Study

## 1. Earthquake Engineering

### Category-A (Basic Courses)

CEE 501	Advanced Computer-Aided Structural Analysis
CEE 521	Structural Dynamics and Earthquake Engineering
CEE 522	Advanced Topics in Earthquake Engineering
CEE 523	Passive and Active Control of Structural Systems
CEE 531	Seismic Behavior and Assessment of Reinforced Concrete Structures
CEE 537	Rehabilitation and Strengthening of Structures
CEE 545	Nonlinear Structural Analysis
CEE 555	Soil Dynamics and Engineering Seismology

### Category-B (Relevant Courses)

CEE 500	Engineering Applications with Software Development
CEE 512	Risk Analysis in Civil and Environmental Engineering
CEE 526	Finite Element Methods
CEE 528	Advanced Topics in Structural Analysis
CEE 532	Advanced Technology of Materials
CEE 533	Local and Traditional Building Materials
CEE 535	Plasticity Theory
CEE 538	Experimental Methods in Structural Engineering
CEE 540	Behavior and Design of Reinforced Concrete Structures
CEE 543	Bridge Engineering
CEE 547	Masonry Structures
CEE 556	Advanced Foundation Engineering

Course categories: A – Basic, B – Relevant, C – CEED, D – UCY

## 2. Structural Analysis

### Category-A (Basic Courses)

CEE 501	Advanced Computer-Aided Structural Analysis
CEE 509	Computational Mechanics
CEE 512	Risk Analysis in Civil and Environmental Engineering
CEE 521	Structural Dynamics and Earthquake Engineering
CEE 526	Finite Element Methods
CEE 528	Advanced Topics in Structural Analysis
CEE 535	Plasticity Theory
CEE 545	Nonlinear Structural Analysis

### Category-B (Relevant Courses)

CEE 500	Engineering Applications with Software Development
CEE 522	Advanced Topics in Earthquake Engineering
CEE 522	Advanced Topics in Earthquake Engineering
CEE 523	Passive and Active Control of Structural Systems

CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures  
 CEE 532 Advanced Technology of Materials  
 CEE 537 Rehabilitation and Strengthening of Structures  
 CEE 540 Behavior and Design of Reinforced Concrete Structures  
 CEE 543 Bridge Engineering  
 CEE 547 Masonry Structures  
 CEE 555 Soil Dynamics and Engineering Seismology  
 CEE 556 Advanced Foundation Engineering  
*Course categories: A – Basic, B – Relevant, C – CEED, D - UCY*

### 3. Novel and Traditional Construction Materials

#### Category-A (Basic Courses)

CEE 532 Advanced Technology of Materials  
 CEE 533 Local and Traditional Building Materials  
 CEE 534 Physical Properties and Related Durability Problems of Construction Materials  
 CEE 538 Experimental Methods in Structural Engineering  
 CEE 539 Advanced Topics in Novel and Traditional Construction Materials  
 CEE 546 Building Physics  
 CEE 547 Masonry Structures  
 CEE 562 Asphalt Materials

#### Category-B (Relevant Courses)

CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures  
 CEE 526 Finite Element Methods  
 CEE 535 Plasticity Theory  
 CEE 536 Energy Efficiency of Buildings  
 CEE 537 Rehabilitation and Strengthening of Structures  
 CEE 543 Bridge Engineering  
 CEE 540 Behavior and Design of Reinforced Concrete Structures  
 CEE 586 Sustainable Built Environment  
*Course categories: A – Basic, B – Relevant, C – CEED, D - UCY*

### 4. Geotechnical Engineering

#### Category-A (Basic Courses)

CEE 509 Computational Mechanics  
 CEE 526 Finite Element Methods  
 CEE 535 Plasticity Theory  
 CEE 555 Soil Dynamics and Engineering Seismology  
 CEE 556 Advanced Foundation Engineering  
 CEE 557 Coastal and Offshore Geotechnical Engineering  
 CEE 558 Advanced Topics in Geotechnical Engineering  
 CEE 574 Environmental Geotechnics

#### Category-B (Relevant Courses)

CEE 500 Engineering Applications with Software Development  
 CEE 534 Physical Properties and Related Durability Problems of Construction Materials

CEE 511 Construction Engineering and Management  
 CEE 512 Risk Analysis in Civil and Environmental Engineering  
 CEE 521 Structural Dynamics and Earthquake Engineering  
 CEE 538 Experimental Methods in Structural Engineering  
 CEE 543 Bridge Engineering  
 CEE 562 Asphalt Materials  
*Course categories: A – Basic, B – Relevant, Γ – CEED, Δ - UCY*

### 5. Construction and Transport Infrastructure Management

#### Category-A (Basic Courses)

CEE 511 Construction Engineering and Management  
 CEE 516 Building Information Models  
 CEE 517 Operations Research in Civil and Environmental Engineering  
 CEE 560 Advanced Transport Planning  
 CEE 563 Advanced Topics in Traffic Engineering and Intelligent Transport Systems-ITS

#### Category-B (Relevant Courses)

CEE 512 Risk Analysis in Civil and Environmental Engineering  
 CEE 513 Specifications and Conditions of Construction Contracts  
 CEE 515 Advanced Topics in Construction Management  
 CEE 543 Bridge Engineering  
 CEE 561 Highway Design and Road Safety  
 CEE 562 Asphalt Materials  
 CEE 564 Civil/Transport Economics and Finance  
 CEE 565 Multi-Modal Systems and Logistics  
 CEE 566 Transit Systems  
 CEE 567 Advanced Topics in Transport Infrastructure  
 CEE 581 Environmental Risk Assessment  
*Course categories: A – Basic, B – Relevant, Γ – CEED, Δ - UCY*

### Environmental Engineering Courses

CEE 500 Engineering Applications with Software Development  
 CEE 512 Risk Analysis in Civil and Environmental Engineering  
 CEE 534 Physical Properties and Related Durability Problems of Construction Materials  
 CEE 536 Energy Efficiency of Buildings  
 CEE 571 Computational Hydraulics  
 CEE 572 Groundwater Hydrology  
 CEE 574 Environmental Geotechnics  
 CEE 576 Environmental Fluid Mechanics  
 CEE 580 Dynamics of the Atmosphere and Air Pollution Dispersion  
 CEE 581 Environmental Risk Assessment  
 CEE 582 Solid and Hazardous Waste Management

CEE 583	Physicochemical and Biological Processes for the Treatment of Wastewater
CEE 584	Advanced Topics in Environmental Engineering
CEE 585	Experimental Methods in Water and Wastewater Analysis and Treatment
CEE 586	Sustainable Built Environment
CEE 596	Renewable Energy Sources Management
CEE 650	Independent Study

## Courses Description

The Department reserves the right to modify the following list of courses, to expand or discontinue course offerings, and to amend the contents of existing courses as needed in an effort to further improve the curriculum. The course listing provides a brief description of the topics covered in each course and the ECTS allocated to the course. After the number, name and description of each course, there is an indication of any prerequisites required and the number of ECTS the course carries. The ECTS are followed by three numbers that indicate the hours required for lectures, labs and homework (preparation and problem sets), respectively.

### **CEE 500 Engineering Applications with Software Development (8 ECTS)**

From Procedure-Oriented to Object-Oriented Programming (OOP). OOP with Java. Development of OOP software for solving engineering problems utilizing classes and objects, inner and anonymous classes, interfaces, inheritance and polymorphism. webpage development including java applets. software development with graphical-user interfaces and graphical components. events and exception handling. Utilizing multithreading. Design patterns for developing extendable Software Applications.

### **CEE 501 Advanced Computer-Aided Structural Analysis (8 ECTS)**

Computational simulation of planar and spatial structures with modern structural analysis software (GT-Strudl, SAP2000 or/and ETABS). Direct stiffness method based on the principle of virtual work and its software implementation. Substructures and static condensation. Numerical methods for Eigenvalues analysis, Numerical integration of single and multi-degree of freedom systems, modal superposition and direct integration of equations of motion for the computation of time-history response. Construction of response and design spectrum. Programming numerical methods for structural analysis (using Matlab) finite element methods for both static and dynamic analysis based on the displacement method. Single- and multi-degree of Freedom experiments using a small-scale shake-table. Seismic isolation and simulation of seismically isolated structures. Simulation of inelastic structural response.

### **CEE 509 Computational Mechanics (8 ECTS)**

Basic concepts and solution techniques: Preliminaries, non-linear finite element analysis, Geometrically non-linear analysis, solution techniques in quasi-static analysis, solution techniques for non-linear dynamics. Computational analysis with damage mechanics, plasticity models and time-dependent material models. Coupled problems: Pore pressure - deformation analysis.

### **EE 511 Construction Engineering and Management (8 ECTS)**

Construction management techniques and construction engineering. Project, schedule and cost control, and resource

management. Earned value analysis. Construction productivity. Conflict resolution and negotiations. Information systems in construction management and use of relevant software packages. Health and safety in construction. Law and the construction industry.

### **CEE 512 Risk Analysis in Civil and Environmental Engineering (8 ECTS)**

Advanced topics is stochastic analysis in civil and environmental engineering. Probability and statistics, data analysis, risk assessment and analysis, hypothesis testing, multi-factored analysis, decision trees, neurofuzzy systems, regression, system reliability, Markov chains and simulation of civil and environmental systems. Applications from the field of civil and environmental engineering.

### **CEE 513 Specifications and Conditions of Construction Contracts (8 ECTS)**

General Issues of Contract Law (offer, acceptance, consideration, legal relations, terms and conditions, construction of contracts), Conditions of construction contracts, business risk allocation, breach of a contract and claims examination. Conditions of contracts for construction, conditions of subcontracts, design contracts, design and build contracts, public – private – partnership. Tender documents and procedures for awarding public work contracts, general issues for technical specifications for construction works and dispute resolution procedures.

### **CEE 515 Advanced Topics in Construction Management (8 ECTS)**

Advanced and contemporary topics in construction engineering and management. The topics include, among other, offerings on Fully Integrated and Automated Project Processes (FIAPP), 3D/4D computer-aided modelling of construction processes, decision-support systems in construction, construction and the law, etc.

### **CEE 516 Building Information Models (8 ECTS)**

Building Information Models (BIM) and FIAPP in construction engineering and management. Development of relational database management systems for bim, model-centric and data-centric BIM architectures. Application of BIM in design, quantity takeoff, costing, scheduling, resource productivity and management, structural analysis and energy efficiency of buildings. Use of specialized BIM software (Revit, Primavera, SQL/ODBC, Ecotect).

### **CEE 517 Operations Research in Civil and Environmental Engineering (8 ECTS)**

Introduction in Operations Research and Optimization. Linear programming: Mathematical formulation of problems, graphical solution, simplex algorithm, sensitivity analysis and duality. Integer programming. Non-linear programming: Fundamental concepts, classical and Heuristic optimization methods, single- and multi-objective optimization. Dynamic programming. Network analysis. Queuing theory and markov chains. Special topics. Civil and environmental engineering examples (structural analysis and design, construction management and scheduling, transportation, environmental issues, etc.) and practical applications with software usage.

### **CEE 521 Structural Dynamics and Earthquake Engineering (8 ECTS)**

Elements of analytical dynamics. Lagrange's equations. Dynamic response of discrete single- and multi-degree-of-freedom systems. Vibration isolation. Modeling of damping in structures. Numerical evaluation of dynamic response. Earthquake response analysis. Frequency-domain method of response analysis. Dynamic response of continuous systems. Rayleigh's method. Dynamic response of seismically isolated structures.



### **CEE 522 Advanced Topics in Earthquake Engineering (8 ECTS)**

This course does not have a specific course material, but it is offered circumstantially by specialists in the particular specification with visiting Faculty or a specialist covering scientific topics in the field of Earthquake Engineering.

### **CEE 523 Passive and Active Control of Structural Systems (8 ECTS)**

Introduction, seismic isolation principles, history. Seismic isolation systems (elastomeric, sliding, rocking, etc.). Elastomeric isolation systems LRB, HRB (Low-damping, high-damping Rubber bearings). Linear theory of base isolation. Sliding isolation systems. Energy dissipation systems. The principle of active structural control. Theoretical and practical considerations.

### **CEE 526 Finite Element Methods (8 ECTS)**

The concept of numerical simulation. The direct stiffness method. Truss/frame finite elements (FEs). Plane stress and strain FEs (triangular, quadrilateral). Isoparametric FEs. Solid FEs. Higher order FEs. Estimation of discretization error - Adaptive FEs. Solution of FE equilibrium equations. Basic principles of FE programming. Sub-structuring methods. Special topics. Learning and usage of FE software.

### **CEE 528 Advanced Topics in Structural Analysis (8 ECTS)**

This course does not have a specific course material, but it is offered circumstantially by specialists in the particular specification with visiting Faculty or a specialist covering scientific topics in Structural Analysis.

### **CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures (8 ECTS)**

The course deals with the strength and deformation capacity of reinforced concrete structures, the hierarchy of mechanisms of resistance and failure of structures, the effects of large amplitude cycling and consequent strength degradation of the hysteretic performance of structures. ADRS spectra – damping – local vs global demands. Chord rotation (relative drift ratio) in reinforced concrete structures. Typical deficiencies of old-type lightly reinforced construction. Available deformation capacity, Evaluation of beam-column joints, anchorages and lap-splices, short-columns, identification of the weak link in the structural system, establishing the pushover (resistance) curve of the structure. Lateral stiffness, strength at yielding and at failure, examples of direct assessment of structures damaged in past earthquakes, forensic investigation of collapse. Maximum tolerable ground acceleration in existing structures limiting collapse.

### **CEE 532 Advanced Technology of Materials (8 ECTS)**

Concrete components, microstructure and properties of Portland cement. Heat of hydration and thermal stress development in concrete. Strength, fatigue, failure mechanisms (fracture mechanics), creep, shrinkage and durability of hardened concrete. Special concretes: Self-compacting, high performance, recycled concrete and ultra-high performance. Fiber reinforced concrete. Behavior and mechanical properties. Mechanics of fiber reinforced concrete. Fiber reinforced polymer composites. High performance materials. Sustainability. Experimental investigation.

### **CEE 533 Local and Traditional Building Materials (8 ECTS)**

Natural building and decorative stones and stone structures, Properties of local stones, Decay and protection of stone, Imported stone carbon footprint, Local aggregates: characteristics and their effect on the quality of composite materials, Fired clay

bricks, binders, mortars and plasters, local and traditional mortars, earthen architecture and adobe, timber.

### **CEE 534 Physical Properties and Related Durability Problems of Construction Materials (8 ECTS)**

Porosity and porous media, saturated and unsaturated flow, one dimensional flow, sorptivity, sharp front theory, applications of sharp front theory, evaporation and drying, salt crystallization, rising damp.

### **CEE 535 Plasticity Theory (8 ECTS)**

Stresses and strains. Elasticity. Non-linearity. Yield surface. Elastic-perfectly plastic behavior. Hardening and softening. Constitutive modeling. Numerical integration of constitutive models. The Constitutive models in the finite element method. Limit analysis. Upper and lower bounds. The method of characteristics.

### **CEE 536 Energy Efficiency of Buildings (8 ECTS)**

Basic principles of energy efficiency of buildings, methodology of energy analysis, steady and unsteady heat transfer in two- and three-dimensional analysis of structural materials and components with conduction, convection and radiation, pre-requisites of energy efficiency, materials for thermal insulation, simulation methods for energy efficiency, certification, European and Cypriot standards and codes for energy efficiency, assessment of energy efficiency, optimized technologies for energy efficient design, passive cooling and heating, case studies in buildings (residential, offices, organizations etc.).

### **CEE 537 Rehabilitation and Strengthening of Structures (8 ECTS)**

Rehabilitation strategy and methods of intervention. Particular emphasis is placed on detailing of interventions with FRPs in the context of EC8 – III and the Greek Retrofit Code 2010. Assessment of the structural implications of corrosion particularly with reference to earthquake resistance. Use of FRPs in corrosion repairs. Required global and local interventions for earthquake resistance of old, lightly reinforced construction. Strength implications for foundation redesign reinforced concrete jackets. Addition of walls, infills, diagonal braces. Detailing of retrofit. Other repair and strengthening methods. Injections of grouts, metallic nets. Local interventions with composites. Debonding. Strengthening for flexure using externally bonded plates and near-surface mounted reinforcement. Confinement, shear strengthening, strengthening of anchorages. Clamping action. Assessment and retrofit against torsional eccentricities in structures. Unreinforced masonry structures: repair and retrofit with advanced composites. Historical constructions, assessment and strengthening.

### **CEE 538 Experimental Methods in Structural Engineering (8 ECTS)**

Introduction to experimental mechanics. Structural models. Dimensional analysis-similitude laws. Static and dynamic modeling. Design of an experimental setup. Strain gage instrumentation. Force-displacements-velocity-acceleration-pressure-temperature transducers. Non-destructive testing. Data acquisition systems. Accuracy-reliability-statistical analysis of experimental data. Experimental testing.

### **CEE 539 Advanced Topics in Novel and Traditional Construction Materials (8 ECTS)**

This course does not have a specific course material, but it is offered circumstantially by specialists in the particular specification with visiting faculty or specialists covering scientific topics in novel and traditional construction materials.

#### **CEE 540 Behavior and Design of Reinforced Concrete Structures (8 ECTS)**

Confined concrete models. Optimal design of reinforced and prestressed concrete members. Prestress limits in continuous prestressed concrete bridges. Plasticity theorems for concrete design. Design of deep beams and corbels using strut-and-tie models. Compressive-field and compressive-path theories for shear. New materials as main reinforcement in concrete design.

#### **CEE 543 Bridge Engineering (8 ECTS)**

Conceptual and preliminary design of bridges - bridge loads - substructures and foundations -bridge analysis, design and construction (prestressed concrete, steel, composite steel-concrete, truss, masonry arch, cable supported and suspended, floating, movable) - design for durability - bridge whole life costing - problems and failures - bridge strengthening and restoration.

#### **CEE 545 Nonlinear Structural Analysis (8 ECTS)**

The aim of the course is to introduce students to Nonlinear Structural Analysis through practical simulation applications for static and dynamic analysis, design and assessment of structures. The course is based on the learning and usage of modern structural analysis software and consists of a series of computational lab sessions, during which the way to simulate each application is described and the basic relevant theory is given. The structure types examined include trusses, plane and space frames made of steel or reinforced concrete, as well as masonry structures. The course is concerned with the evaluation of the limit load and the collapse mode of a structure, the exploitation of various material models for structural steel, reinforced concrete and masonry, the use of concentrated or distributed plasticity, the implementation of nonlinear static (pushover) and dynamic time-history structural analysis, etc.

#### **CEE 546 Building Physics (8 ECTS)**

Fundamental and applied topics in Building Physics: transfer of heat and moisture, air flow indoors and outdoors, natural ventilation mechanisms. The course focuses on the design of structural components such as foundations, windows, roofs for issues of heat and moisture transfer, energy saving, as well as issues of climate, thermal comfort and indoor air quality.

#### **CEE 547 Masonry Structures (8 ECTS)**

Masonry Materials (stone, adobe/earth-based brick, mortar, timber) and their mechanical behaviour. Masonry Types and construction techniques (unreinforced, reinforced, tier-laced, confined-masonry). Mechanical behaviour of Masonry in compression, tension, bending, shear due to in/out-of-plane actions (mainly as a result of gravitational and seismic loads). Behaviour of interfaces within the Masonry and force transfer mechanisms. Construction details of Masonry buildings (lintels, arches, etc.). Evaluation of mechanical characteristics of Masonry and its constituent materials (in situ or at lab). Assessment, damage/pathology and retrofit/strengthening of Masonry buildings. Eurocodes and other codes for designing/assessing Masonry walls and buildings. Simulation of Masonry structures and static/dynamic analysis using finite element software.

#### **CEE 555 Soil Dynamics and Engineering Seismology (8 ECTS)**

Strong ground motion characteristics. Seismic hazard analysis. Soil behavior under cyclic loading. Seismic wave propagation, reflection and refraction. The Viscous Dashpot Analogue. Ground response analysis. Soil liquefaction due to earthquakes. Stability of slopes and retaining walls under seismic conditions. Bearing capacity of foundations subjected to earthquake loading. Soil-structure interaction.

#### **CEE 556 Advanced Foundation Engineering (8 ECTS)**

Analysis of beam and mat foundations using computer software. Computation of pile and pile group settlements. Dynamic analysis of pile driving. Piles and pile groups subjected to lateral loading: lateral bearing capacity and deformations. Applications of soil-structure Interaction: foundations, walls of deep excavation, tunnel liners. Seismic Soil-pile-structure Interaction. Caisson-type foundations. Analysis and Design of foundations on expansive soils.

#### **CEE 557 Coastal and Offshore Geotechnical Engineering (8 ECTS)**

Introduction. Coastal and offshore construction. Underwater site investigation. Types, physical properties and mechanical behaviour of seabed soils. Piled foundations. Shallow foundations. Mobile jack-up platforms. Anchoring systems. Geotechnics of pipelines and subsea installations. Geotechnical analysis of quay walls, Breakwaters and cofferdams. Marine landslides and other geohazards.

#### **CEE 558 Advanced Topics in Geotechnical Engineering (8 ECTS)**

This course does not have a specific course material, but it is offered circumstantially by specialists in the particular specification with visiting faculty or specialists covering scientific topics in Geotechnical Engineering.

#### **CEE 560 Advanced Transport Planning (8 ECTS)**

This is a course that examines the complex relationship between transportation, land use and urban form as well as the varied methods and concepts available to planners seeking to influence this relationship. The course provides an overview of alternatives available to transportation planners, as they attempt to (a) avoid long and unnecessary motorized travel and (b) shift the movement of people to socially efficient modes such as walking, biking and public transit. Moreover, the course looks at how transportation planners craft projects and policies that are both technically sound and feasible at the same time, introducing (and critiquing) some of the tools and skills used by professionals in this field. The course is quantitatively-based and aims to develop advanced modeling skills.

#### **CEE 561 Highway Design and Road Safety (8 ECTS)**

This course aims at the advanced concepts, tools and technologies concerning the design of roadways. An emphasis is given on the G design, as well as on the equipment that is used in contemporary highway design. Moreover, the elements of risk and safety are introduced, covering related practical and methodological aspects. This course consolidates knowledge from highway design, traffic engineering and safety research in a contemporary and comprehensive framework.

#### **CEE 562 Asphalt Materials (8 ECTS)**

Identification and physical properties of asphalt materials, asphalt refining, uses and properties, physical properties of aggregates, aggregate testing, hot mix asphalt (HMA), cold mix asphalt, HMA design methodology, factors affecting HMA, HMA material characterization, quality control, equipment and construction, behaviour of flexible pavements and typical distresses, maintenance of HMA pavements, pavement rehabilitation, recycling of HMA and special mixes and additives.

#### **CEE 563 Advanced Topics in Traffic Engineering and Intelligent Transport Systems-ITS (8 ECTS)**

This course aims at deepening the understanding of the traffic flow phenomenon and the analytical models that are used in this area. The perspective of the course will lead to the technological aspects of contemporary traffic networks surveillance, operations

and control as those are incorporated in the broad area of Intelligent Transportation Systems (ITS). Students with interest in engineering, transportation systems, communication systems, vehicle technologies, transportation planning, transportation policy and urban planning are encouraged to participate since ITS refers to information and communication technologies, as applied to transportation infrastructure and vehicles, improving transportation sector's efficiency, safety and the environmental conditions. The recent availability and accessibility of mobile technology, suggests that ITS applications is an area of rich academic and industrial opportunities. It is noted that ITS is an international methodological paradigm intended to improve the effectiveness and efficiency of surface transportation systems through advanced technologies in information systems, communications, and sensors. In addition to discussions that have to do with technology, this course will include topics related to policy, economics, security, as well as urban and rural planning.

#### **CEE 564 Civil/Transport Economics and Finance (8 ECTS)**

The content covers a wide variety of topics relating to the economic aspects of transportation, government regulatory policies regarding transportation, and issues that concern transportation industry planners. The unifying theme concerns the application of economic theory and/or applied economic methodologies to transportation questions. Methods of funding and financing transport network maintenance, improvement and expansion are debated extensively and form part of the transport economics field. Funding issues relate to the ways in which money is raised for the supply of transport capacity. Taxation and pricing of transport services will also be included covering issues of loans, bonds, public-private partnerships and concessions, as well as other methods of financing transport investment.

#### **CEE 565 Multi-Modal Systems and Logistics (8 ECTS)**

This course will cover the fundamental analytic tools, approaches, and techniques which are useful in the design and operation of multimodal transport, logistics systems and integrated supply chains. The material is offered from a managerial perspective with an emphasis on where and how specific tools can be used to improve the overall performance and reduce the total cost of a supply chain. A strong emphasis is given on the development and use of fundamental and advanced models to illustrate the underlying concepts involved in both intra and inter-company multimodal and logistics operations. While the main objective is to develop and use models to help us analyze these situations, extended use of examples from industry and realistic illustrations of the concepts in practice will be provided. This is neither a purely theoretical nor a case study course, but rather an analytical course that addresses real problems encountered when theory is put into practice.

#### **CEE 566 Transit Systems (8 ECTS)**

This course covers the strategic and operational planning and design of transit systems both within the urban (bus, tram and metro systems) as well as in the means of mass transportation in the interurban space. Issues related to capacity, level-of-service, optimal design and management, routing, scheduling (of rolling stock as well as of personnel), technological developments, pricing strategies and the particularities emerging in alternative transit systems are analyzed. Competitiveness and complementarity among means of transport is also covered, while new organization schemes (e.g. demand responsive systems, dedicated transit systems, taxi market organization) are discussed. A special care for paratransit systems is taken. The course balances the theoretical and practical aspects of transit systems with an emphasis on modeling and decision-making.

#### **CEE 567 Advanced Topics in Transport Infrastructure (8 ECTS)**

This course covers several topics of Transport Infrastructure, like terminal design, transit systems, railways and metro/tram systems, pipelines and a lot of other related issues that are not covered in other courses.

#### **CEE 571 Computational Hydraulics (8 ECTS)**

Principles of Computational Hydrodynamics with emphasis on finite differences and finite volumes. Application Examples include open channel flows, rivers, lakes, and open seas as well as hydrodynamic loading of structures.

#### **CEE 572 Groundwater Hydrology (8 ECTS)**

Significance of Groundwater Hydrology. Physico-chemical properties of groundwater. Fundamentals of groundwater flow. Measurement of flow parameters. Design and analysis of control pump. Contaminant transport in groundwater. Computational models for simulation of subsurface flow and contaminant transport in groundwater. Soil remediation methods and protection of aquifers, e.g. risk assessment remediation from accidental leaks of toxic substances.

#### **CEE 574 Environmental Geotechnics (8 ECTS)**

Introduction. Sources of contamination and acceptable limits. hydrogeology. Interaction of contaminants with soil. Mechanisms of contaminant mobility. Ground investigation. Waste disposal by landfill. Ground remediation and protection of soil and groundwater. Risk assessment of failure of large construction structures.

#### **CEE 576 Environmental Fluid Mechanics (8 ECTS)**

Introduction to environmental flows. Basic transport mechanisms in the water and the atmosphere (convection, molecular and turbulent diffusion, dispersion). Mixing and dispersion in 2-D systems. Analytical solutions. Retention times. Stratified flows: Boussinesq approximation, momentum jets, buoyant plumes, influence of environmental conditions. Elements of geophysical fluid mechanics: Large scale flows, the effect of earth's rotation (Coriolis Effect), Ekman layer.

#### **CEE 580 Dynamics of the Atmosphere and Air Pollution Dispersion (8 ECTS)**

Meteorology and structure of the atmosphere. Meteorological events as events of atmospheric dynamics: Weather-climate-climate change, wind, tornadoes and hurricanes, dust storms, El Nino phenomenon, rain, storms. Atmospheric pollution dispersion: Sources and transport mechanisms. Turbulent atmospheric flows. Jets and plumes in the atmosphere. Atmospheric chemistry. Research and operational air pollution dispersion models.

#### **CEE 581 Environmental Risk Assessment (8 ECTS)**

Introduction to risk assessment, definitions, methodology (problem formulation, hazard identification, exposure assessment, exposure-response assessment, risk characterization), basic knowledge in chemistry and biology, fate of pollutants in environmental media, mass and energy balances, toxic organic compounds, heavy metals, physicochemical properties (ideal gas law, Dalton's law, Raoult's law, Henry's law, Le Chatelier's principle), sorption, adsorption, evaporation, hydrolysis, photochemical transformations, biological transformations, bio-concentration, bioaccumulation, uncertainties in risk assessment, case studies. The course covers topics related to characterizing source areas, linking fate and transport mechanisms, evaluating exposure pathways and applying toxicology data to evaluate environmental risk in a variety of differing contexts.



#### **CEE 582 Solid and Hazardous Waste Management (8 ECTS)**

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Management of solid and hazardous waste (definitions, legislative framework, waste generation and characterization, classification and labeling). Analysis and design of waste collection and treatment systems: Recycling, resource recovery, mechanical, thermal and biological treatment processes. Landfills for solid and hazardous waste (design principles, hydrology, geotechnical aspects, gas production, management of leachates, environmental risks, operation and monitoring, closure, aftercare and final use).

#### **CEE 583 Physicochemical and Biological Processes for the Treatment of Wastewater (8 ECTS)**

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Introduction to the Wastewater Treatment (terminology, legislative framework). Characterisation of the wastewater (sampling methods, principles of the analytical methods, physical – chemical and biological parameters, toxicity tests, TOC, BOD5, COD). Description of the various types of reactors. Physical processes (screening, solid reduction/removal, grit removal, flow equalisation, fat and grease removal, primary sedimentation, clarification, floatation, aeration). Chemical processes (chemical precipitation and coagulation, removal of P, N, and heavy metals, chemical oxidation). Basic principles of the biological processes (kinetic of microbial growth, suspended growth biological treatment processes, attached growth and combined biological treatment processes, anaerobic suspended and attached growth biological treatment processes). Advanced wastewater treatment (membranes, adsorption, gas stripping, ion-exchange, advanced oxidation technology). Disinfection processes (basic principles, disinfection by-products, chlorination, ozonation, UV). Treatment, reuse and disposal of sludge (dewatering, stabilisation, aerobic – anaerobic digestion, composting, drying). Management of odours.

#### **CEE 584 Advanced Topics in Environmental Engineering (8 ECTS)**

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Special Advanced Topics in Environmental Engineering, such as: Advanced wastewater treatment technologies, advanced water treatment technologies, aquatic chemistry, ionic equilibrium, solubility and pH calculations in water, monitoring of solid waste disposal, development of management systems for special waste, energy recovery from biomass, monitoring and control of industrial emissions, integrated management systems of water resources, advanced environmental fluid dynamics including geophysical and coastal fluid dynamics, weather forecasting systems, climate change prediction, atmospheric dynamics and air pollution dispersion, dynamics of atmospheric boundary layer, monitoring and control of atmospheric pollution.

#### **CEE 585 Experimental Methods in Water and Wastewater Analysis and Treatment (8 ECTS)**

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Sampling, samples transport and preservation, laboratory analytical methods, quality assurance and quality control. Water analysis (organoleptic methods, volumetry, nephelometry, spectrophotometry, spectroscopy, chromatography, mass spectrometry), microbiological analysis, the physics, chemistry and biology of water. Water and wastewater characterization (fresh water / potable water / industrial wastewater / urban wastewater). Treatability of wastewater (e.g. sedimentation, coagulation-flocculation (jar tests), oxidants demand). Biological treatment (membrane bioreactor), Chemical treatment (UV/H<sub>2</sub>O<sub>2</sub>, homogeneous and heterogeneous photocatalysis, ozonation), Ultrafiltration. Eco- and phyto-toxicity tests.

#### **CEE 586 Sustainable Built Environment (8 ECTS)**

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Holistic approach and lateral integration of fundamental aspects and current challenges in the sustainable design of the built environment. Includes: Climate change, urban physics, environmental pollution, global energy demands, sustainable building materials, rational water use, waste management, renewable/alternative energy technologies, perception of human comfort, ecological footprint analysis, legal framework, environmental and operational management & strategies. The course also demonstrates examples of both sustainable and unsustainable aspects of current design practice of the built environment, and how international policy frameworks can act as both drivers and barriers to sustainable solutions.

#### **CEE 596 Renewable Energy Sources Management (8 ECTS)**

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Forms and sources of energy, basic thermodynamic principles, efficiency and losses during the conversion and transfer of energy. Energy and society, energy resources - characteristics, properties and exploitation technologies, applications and potential of renewable energy resources, energy storage systems resources, photothermal and photoelectric systems, geothermal systems of high, medium and low enthalpy. biomass technologies for managing urban and agricultural / livestock waste for energy production (conversion). legislative framework and european / national directives on renewable energy. recycling and energy production.

#### **CEE 610 Seminars for Graduate Students (8 ECTS)**

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Graduate seminars organized by the CEE Department on contemporary research issues of local and international interest. The list of seminars is announced at the beginning of each academic semester (approximately 6-7 seminars per semester) and graduate students (MEng/MSc) are required to attend at least 8 seminars during their course of studies. Doctoral candidates are required to attend at least 16 seminars during their course of studies, in addition to presenting one seminar themselves in relation to their doctoral research. (0 ECTS.)

#### **CEE 650 Independent Study (8 ECTS)**

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Individual study, research, or laboratory investigations under faculty supervision.

#### **CEE 680-683 M.Sc. Research**

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Programme of Graduate Research leading to the defense and writing of an M.Sc. thesis (ECTS units are assigned by the Thesis Advisor).

#### **CEE 689 Research Project (10 ECTS)**

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Individual research project leading to the completion of the M.Eng. Degree.

#### **CEE 690-696 Ph.D. Research**

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Graduate research within the Ph.D. programme.

#### **CEE 697-699 Ph.D. Thesis Authoring**

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Authoring of the Ph.D. thesis. These courses are only taken upon completion of all ECTS units required under the Ph.D. Research course-codes (ECTS units are assigned by the Thesis Advisor).

#### **CEE 701-702 Examination of the Research Proposal for the Doctoral Thesis**

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Examination of the research proposal for the doctoral thesis, by the 3-member doctoral Committee, according to the Graduate Studies Regulations of the UCY.

## Research Interests of the Academic Staff

### • Dimos C. Charmpis, Associate Professor

His research interests cover various topics of computational mechanics and aim toward the exploitation of innovative computing systems and numerical methods for the analysis and design of structures under static or seismic loading.

### • Symeon Christodoulou, Associate Professor

Construction engineering and management, Fully integrated and automated project processes, Information technology, Risk analysis and management of urban water distribution systems, Artificial intelligence for civil engineering and Construction applications.

### • Ioannis Ioannou, Associate Professor

His research interests have a particular emphasis on studies of water movement in porous construction materials and the associated problems of material durability.

### • Loukas Dimitriou, Lecturer

Design and analysis of civil and transportation infrastructure, The use of advanced methods and techniques for optimizing systems' design and performance and in developing frameworks for supporting decisions in his fields.

### • Despo Fatta-Kassinou, Associate Professor

Environmental science, Technology and management of environmental monitoring, water and wastewater treatment, wastewater management systems, xenobiotics in the environment and environmental risk assessment).

### • Petros Komodromos, Associate Professor

Modern earthquake resistant design, Computer-aided engineering and utilization of information technology in engineering.

### • Dimitrios Loukidis, Assistant Professor

Foundation engineering, Computational geomechanics, Constitutive modelling, Unsaturated soil mechanics, Pile dynamics, Geotechnical earthquake engineering, Plasticity theory, Limit analysis, Finite element analysis.

### • Marina Neophytou, Associate Professor

Environmental fluid mechanics (atmospheric pollution dispersion, environmental turbulence modelling, computational fluid dynamics modelling at the local and urban scales, indoor air pollution, buoyancy-driven flows, building ventilation, sustainable building design.

### • Stavroula Pantazopoulou, Professor

Mechanics of reinforced concrete structures, Service life modelling, Earthquake engineering, and Seismic assessment and upgrading of existing structures with novel materials and technologies.

### • Panos Papanastasiou, Professor

Applied and computational mechanics with applications in constitutive modelling of cohesive-frictional materials, micro-mechanics, fracture mechanics, environmental geomechanics, petroleum engineering and finite element analysis.

### • Michalis Petrou, Professor

Civil engineering materials and experimental methods, including behavior of reinforced and prestressed concrete, self-compacting concrete, high performance concrete, fiber reinforced polymer composites, high performance steel, laboratory and field testing of structures, structural modelling, and repair/strengthening of structures.

### • Panayiotis Roussis, Assistant Professor

Earthquake engineering and structural dynamics, with a focus on the development and implementation of seismic-isolation and energy-dissipation systems, performance-based earthquake engineering of structural and nonstructural components, development of seismic codes and guide specifications, earthquake-simulator testing and development of nonlinear dynamic analysis software.

## Contact Details

### DEPARTMENT SECRETARIAT

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# Department of Electrical and Computer Engineering

[www.ucy.ac.cy/ece](http://www.ucy.ac.cy/ece)

Electrical and Computer Engineering is a key discipline, at the heart of the technology frontier. It concentrates on the design and analysis of electrical, electronic, and optical devices, and the processing, control, and transmission of information and energy. The scientific disciplines used in Electrical and Computer Engineering include, amongst others, the theory and application of electrical, electromagnetic and optical phenomena, systems theory, control theory, communications theory, information theory, integrated circuit design, instrumentation and sensors and computational hardware and software.

The Department offers the following graduate degrees:

- Master and Doctoral Degrees in Electrical Engineering
- Master and Doctoral Degrees in Computer Engineering
- Master of Science in Intelligent Critical Infrastructure Systems (in English)
- Master in Energy Technologies and Sustainable Design (Interdepartmental Programme of the Faculty of Engineering)

## Introduction

The Department of Electrical and Computer Engineering offers degree programmes in Electrical Engineering and Computer Engineering at both the undergraduate and postgraduate levels. These programmes emphasize fundamental principles that prepare students for leadership roles in a challenging and rapidly changing technological world. Research and innovation are ensured in an environment that fosters cooperation among faculty, students, industry and research organisations. The Faculty of the Department of Electrical and Computer Engineering comprises experienced academics, who are leaders in their fields of expertise. In addition, several academic faculty members of the department have been active in founding and participating in highly successful research centres of the university, including the KIOS Research and Innovation Center of Excellence ([www.kios.ucy.ac.cy](http://www.kios.ucy.ac.cy)), the EMPHASIS (Electronics, Microwaves, Photonics and Sensors) Research Center ([www.emphasis.ucy.ac.cy](http://www.emphasis.ucy.ac.cy)), and the FOSS Research Center for Sustainable Energy ([www.foss.ucy.ac.cy](http://www.foss.ucy.ac.cy)).

For detailed information regarding the Department and its postgraduate level degrees, please refer to the Department's detailed postgraduate studies guide and the Department's website.

## Admission to Postgraduate Programmes

The Department admits new postgraduate students each year at the Master and Doctoral levels. The number of new admissions fluctuates each year and depends on the needs of the Department and the quality of the candidates.

Applications are submitted to the Department and are considered for evaluation by the Postgraduate Studies Committee which makes suggestions to the Department Council for final approval. Upon acceptance to the programme, students are assigned a faculty members as their Academic Advisor, whom they should consult on academic and issues. In addition, students who are admitted in the M.Sc. or Ph.D. programmes are assigned a Research Supervisor, whom they consult on all research related issues concerning their theses work.

For more information on the Postgraduate Programmes, please refer to the Attendance Regulations and Application Requirements. The Department requires the following for admission:

- A completed application form, which can be found on the Graduate School's website and is submitted online.
- A Curriculum Vitae indicating the student's education, academic and research experience, any publications, awards, etc.
- A short statement (at most two pages) outlining the reasons the candidate wishes to join the program, the candidate's professional and research experience, future goals, etc.
- At least three letters of recommendation from academic or professional advisors.
- Copies of representative publications, if any (no more than three).
- Copies of all degrees and transcripts. If applicable, a letter from the Registrar of the student's current university, verifying the expected graduation date (as described above).



- Copies of any other supporting material, such as exams, honors, awards, etc.

Applications may be submitted in either Greek or English.

## Evaluation Criteria

The criteria for the evaluation of the candidates are the following:

- Academic background.
- Research background.
- Recommendation letters.
- Additional qualifications.

Familiarity with the English language is strongly recommended.

## Graduate Degree Programmes

The Department offers seven graduate degrees:

- M.Sc. in Electrical Engineering
- M.Eng. in Electrical Engineering
- M.Sc. in Computer Engineering
- M.Eng. in Computer Engineering
- M.Sc. in Intelligent Critical Infrastructure Systems
- Ph.D. in Electrical Engineering
- Ph.D. in Computer Engineering

Additionally, the Department is involved in the Interdepartmental Postgraduate Programme that offers M.Sc. and M.Eng. degrees in “Energy Technologies and Sustainable Design”.

### MASTER OF SCIENCE (M.Sc.) AND MASTER OF ENGINEERING (M.Eng.) DEGREES IN ELECTRICAL ENGINEERING/ COMPUTER ENGINEERING

To be awarded the M.Sc. or M.Eng. degree in Electrical or Computer Engineering, students must complete at least 90 ECTS of graduate-level coursework.

**For the M.Sc. Degree these units are distributed as follows:**

- At least 56 ECTS of graduate-level courses.
- 4 ECTS of graduate-level seminars (ECE 701).
- At least 30 ECTS of original research work, documented by an M.Sc. thesis.

**The following rules apply:**

- Of the 56 ECTS required, at least 38 must be fulfilled by graduate-level courses in the ECE Department.
- A maximum of 8 ECTS of the total 56 ECTS for courses can be fulfilled by directed/independent study courses (ECE 711 or ECE 713).
- Students may enroll in graduate courses offered by another department in the University of Cyprus or any other accredited university. Units outside the Department must be approved by the Graduate Studies Committee, and are not to exceed 18 ECTS unless approved by the Department Council.

- Of the 56 ECTS required for graduate-level courses, up to 18 ECTS can be fulfilled by courses which the student completed as part of another postgraduate degree, upon approval by the Department Council.
- To satisfy the 4 ECTS requirement for seminars, students must attend at least 25 departmental graduate seminar presentations during their time registered in the ECE graduate programme. The graduate seminar coordinator is responsible for assigning the final grade.

**For the M.Eng. Degree the units are distributed as follows:**

- At least 80 ECTS of graduate-level courses
- 2 ECTS of graduate-level seminars (ECE 705)
- 8 ECTS from the individual study course (ECE 723-724)

**The following rules apply:**

- Of the 80 ECTS required, at least 48 must be fulfilled by graduate-level courses in the ECE Department.
- A maximum of 8 ECTS of the total 80 ECTS for courses can be fulfilled by directed/independent study courses (ECE 711 or ECE 713).
- Students may enroll in graduate courses offered by another department in the University of Cyprus or any other accredited university. Units outside the Department must be approved by the Graduate Studies Committee, and are not to exceed 18 ECTS unless approved by the Department Council.
- Of the 80 ECTS required for graduate-level courses, up to 18 ECTS can be fulfilled by courses which the student completed as part of another postgraduate degree, upon approval by the Department Council.
- To satisfy the 2 ECTS requirement for seminars, students must attend at least 12 departmental graduate seminar presentations during their time registered in the ECE graduate programme. The graduate seminar coordinator is responsible for assigning the final grade.

**• Students admitted in to the M.Sc. or M.Eng. Programme in Electrical Engineering are required to enroll in the three out of the six following graduate courses:**

- ECE 621 Random processes
- ECE 623 Digital Signal Processing
- ECE 631 Systems Theory
- ECE 649 Electromagnetic Waves and Antenna Theory
- ECE 645 Optics & Photonics
- ECE 665 Instrumentation & Sensors

**• Students admitted into the M.Sc. or M.Eng. Programme in Computer Engineering are required to enroll in the three following core graduate courses:**

- ECE 654 Advanced Computer Networks
- ECE 656 Advanced Computer Architecture
- ECE 651 Advanced Iterative Methods

Students admitted into the M.Sc. or M.Eng. programme in Electrical Engineering, without having completed an undergraduate Electrical Engineering degree, are expected to possess fundamental knowledge of basic concepts in the following areas: Signals and systems, electromagnetics and

microwaves, circuits and electronics. Similarly, students admitted into the M.Sc. or M.Eng. programme in Computer Engineering, without having completed an undergraduate Computer Engineering, degree are expected to possess fundamental knowledge of basic concepts in the following areas: Computer architecture and organization, operational systems and algorithms. The Academic Advisor of each student should determine if, and what, additional coursework is required. This may require completion of up to a maximum of four additional courses from the Department's curriculum, possibly at the undergraduate level, in the aforementioned areas.

## DOCTOR OF PHILOSOPHY (Ph.D.)

Graduate students become candidates for a Ph.D. degree after successfully taking the comprehensive examination. For the fulfillment of a Doctor of Philosophy Degree, the requirements are:

1. Successful completion of 240 ECTS, corresponding to graduate courses (at least 56 ECTS), seminars (at least 4 ECTS), and research (at least 180 ECTS). Students with an M.Sc. or equivalent degree may be partially exempt from the course requirements (up to 32 ECTS), after a recommendation by the Graduate Studies Committee, and subject to approval by the Department Council. Out of the 56 ECTS that correspond to courses, at most 16 can correspond to directed/independent study courses (ECE 751/ECE 752/ECE 753/ECE 754).
2. The 180 ECTS requirement for the dissertation research can be fulfilled by taking Ph.D. research stages (ECE 761-764, 30 ECTS units each), Ph.D. research courses (ECE 765-768, 15 ECTS units each) and/or Ph.D. writing stages (ECE 771-773, 30 ECTS units each). The Ph.D. research stages ECE 761-764 are compulsory for all Ph.D. students and can only be taken one-by-one per semester, for four consecutive semesters. The research stage courses ECE 765-768 are optional and can be taken in parallel with other graduate courses. If, after completing all research stages, the student has not defended his/her doctoral dissertation, then he/she is required to sign up for ECE 771-782.
3. Passing the comprehensive examination from the third until the seventh semester of the programme.
4. Thesis Proposal. The candidate must submit a thesis proposal, outlining the proposed research project in a comprehensive and structured manner. The presentation of the proposal is made two to four semesters after succeeding in the comprehensive examination.
5. Doctoral Dissertation. The dissertation must include significant research findings and must contain elements which testify to the candidate's personal contribution.
6. Defense of the Dissertation. The dissertation is defended before the Doctoral Dissertation Committee.
7. To satisfy the 4 ECTS requirement for seminars, each student must attend at least 25 seminar presentations, during the time registered in the ECE graduate program. In addition, the student must give a presentation in the seminar series on a research topic of his/her choice. The completeness of the presentation and the thoroughness

of the understanding of the subject will be evaluated, and feedback will be given to the student in case the subject of the presentation is directly related to his thesis research work. The graduate seminar coordinator is responsible for assigning the final grade.

The maximum duration allowed for a Ph.D. degree is currently eight (8) academic years. For more information on the requirements for the completion of the Ph.D. degree, please refer to the postgraduate prospectus of the Department.

## Research Areas

Research in the Department of Electrical and Computer Engineering focuses on the following areas:

- Embedded Systems and Hardware
- Computational Intelligence and Robotics
- Computer Networks
- Biomedical Engineering
- Power and Renewables
- Telecommunication Systems and Networks
- Waves and Optics
- Intelligent Systems and Control
- Instrumentation, Sensors and Nanotechnology
- Electronics

## Financial Support

The University supports many graduate students through teaching assistantships, the number of which depends on the needs of the Department. Most doctoral students are financially supported through competitive research programmes of the Cyprus Research and Innovation Foundation and the European Union. There are also some additional funding opportunities, such as scholarships provided by the University, information on which is available through the Graduate School and through the Academic Affairs and Student Welfare Service.

## Courses Offered

	ECTS
ECE 601 Supplementary Autonomous Study for Master Students	2
ECE 621 Random Processes	8
ECE 622 Information Theory	8
ECE 623 Digital Signal Processing	8
ECE 624 Principles of Digital Communications	8
ECE 625 Wireless Communication Networks I	8
ECE 626 Image Processing	8
ECE 627 Machine Vision	8
ECE 628 Advanced Communication Systems	8
ECE 629 Fiber Optic Communication Systems and Networks	8
ECE 630 Advanced Optical Networks	8
ECE 631 Systems Theory	8
ECE 633 Security of Computer Systems and Networks	8

ECE 634	Introduction to Computational Intelligence	8
ECE 635	Optimization Theory and Applications	8
ECE 636	Systems Identification	8
ECE 643	Radio and Microwave Wireless Systems	8
ECE 645	Optics and Photonics	8
ECE 646	Advanced Antenna Theory	8
ECE 649	Electromagnetic Waves and Antenna Theory	8
ECE 651	Advanced Iterative Methods	8
ECE 653	Advanced Embedded and Real-Time Systems	8
ECE 654	Advanced Computer Networks	8
ECE 655	Advanced Operating Systems	8
ECE 656	Advanced Computer Architecture	8
ECE 657	Computer-Aided Design for VLSI	8
ECE 658	Computer Systems' Performance Evaluation and Simulation	8
ECE 660	VLSI Test	8
ECE 663	Advanced Distributed Systems	8
ECE 664	Digital Design with FPGAs	8
ECE 665	Instrumentation and Sensors	8
ECE 667	Microwave Circuits	8
ECE 671	Neurophysiology and Senses	8
ECE 680	Power System Analysis	8
ECE 681	Power System Operation and Control	8
ECE 682	Renewable Sources of Energy - Photovoltaics	8
ECE 683	Power Electronics	8
ECE 685	Power System Plant and Operation	8
ECE 686	Power System Modeling	8
ECE 687	Building Integration of Photovoltaic (PV): Towards nearly zero energy buildings (NZEB)	8
ECE 690	Fault Tolerant Systems	8
ECE 701	704 Graduate Seminar M.Sc. and Ph.D.	4
ECE 705	Graduate Seminar for M.Eng. Students	2
ECE 711	Directed Study for M.Sc. Students	8
ECE 713-714	Independent Study for M.Sc. Students I and II	4
ECE 721-722	M.Sc. Thesis I and II	15
ECE 723-724	Individual Study for M.Eng. Students	8
ECE 731-732	Ph.D. Comprehensive Examination I and II	0
ECE 751-752	Directed Study for Ph.D. Students I and II	8
ECE 753-754	Independent Study for Ph.D. Students I and II	4
ECE 761-764	Research Stages of Ph.D. Dissertation IA-IVA	30
ECE 765-768	Research Course of Ph.D. Dissertation IB-IVB	15
ECE 771-776	Writing Stages of Ph.D. Dissertation I-VI	30
ECE 777-782	Writing Stages VII-XII	30
ECE 783	Ph.D. Research Proposal Examination	0
ECE 795	Pattern Recognition	8
ECE 798/799	Special Topics in Electrical and Computer Engineering	8

## Courses Description

### ECE 601 Supplementary Autonomous Study for Master Students (2 ECTS)

Research project related to topics covered by courses offered at the Department. The area/subject of the research project is decided by the supervising faculty in consultation with the student.

### ECE 621 Random Processes (8 ECTS)

Fundamentals of random processes: Definition of random processes, continuous and discrete random processes (Poisson, Markov, Gaussian, Wiener and others), stationarity and ergodicity. Analysis and processing of random signals: power spectral density, linear system response, optimum linear systems and the Kalman filter. Minimum mean-square estimation; Kalman filter of Gaussian systems; Markov Chains: discrete and continuous Markov chains, classes of states, recurrence properties, and limiting probabilities. Introduction to Queuing theory: Little's theorem, the M/M/1 and M/M/k/k queues.

### ECE 622 Information Theory (8 ECTS)

Shannon's reliable data transmission block diagram. Entropy and relations to reliable communication: Source and channel models. Data compression: Lossless source coding (prefix codes, Ziv-Lempel algorithm), performance limits for channel codes, performance limits. Channel capacity: Additive Gaussian channels, finite-state channels. Rate distortion: Quantization, compression subject to fidelity criterion. Network information theory: multiple access channel, broadcast channel, relay channel, interference channel. The effect of uncertainty on Shannon's reliable data transmission blocks.

### ECE 623 Digital Signal Processing (8 ECTS)

Discrete-time signals and systems; Fourier and Z-transform analysis techniques, sampling of continuous-time signals, elements of FIR and IIR filter design, filter structures; the discrete Fourier transform (DFT); computation of the DFT; Fourier analysis of signals using the DFT.

### ECE 624 Principles of Digital Communications (8 ECTS)

Elements of communication theory and information theory applied to digital communication systems. Characterization of communication signals and systems: Representation of band-pass signals and systems, signal space representation, representation of digitally modulated signals, spectral characteristics. Optimal receivers for Gaussian channel with additive white noise, performance of optimal receivers. Carrier and symbol synchronization, channel capacity and coding. Block and convolutional channel codes.

### ECE 625 Wireless Communication Networks I (8 ECTS)

Introduction to information theory, path-loss and shadowing, statistical multipath channel models, capacity of wireless channels, diversity, multiple antennas and space-time communications, multi-user systems.

### ECE 626 Image Processing (8 ECTS)

Review of signals and systems. Two-Dimensional (2-D) signals and Fourier transform; 2-D Z-Transform and stability testing; 2-D DFT, DCT, FFT; 2-D FIR Filter design and implementation; image processing basics; edge detection; rank order (median) filtering, motion estimation; image enhancement; image restoration; image coding; advanced topics.



### **ECE 627 Machine Vision (8 ECTS)**

Overview of the basic principles of how machines understand and interpret visual information; principles of image formation, characteristics and information mining, object recognition as well as motion and scene analysis; algorithms for object detection and recognition; applications in robotics and intelligent systems; analysis of computer vision and object recognition applications, image formation and processing methods, Bayesian theory, application of statistical methods in object recognition, sensors and image capture machines, as well as man-machine interaction.

### **ECE 628 Advanced Communication Systems (8 ECTS)**

Review of basic concepts in communications, including Shannon theorem, Nyquist sampling, basic configurations, and optimal detection in Gaussian channels with additive white noise. Source and channel coding; synchronization in time and frequency; adaptive equalization; performance of analog and digital communication systems in the presence of noise; advanced multicarrier modulation techniques; introduction to advanced communications technologies such as OFDM and multi-input and multi-output (MIMO) systems; spread spectrum technology; applications to certain practical wireless and wired systems.

### **ECE 629 Fiber Optic Communications Systems and Networks (8 ECTS)**

Review of optical fiber transmission, ray optics, dispersion, attenuation, optical transmitters and optical receivers, noise and receiver sensitivity. Non-linear impairments, optical amplifiers (Raman, EDFA, SOA), optical system design and performance, dispersion compensation, multichannel optical systems. Coherent optical systems. Advanced modulation techniques for optical communications (QPSK, m-QAM, OFDM), multi-carriers (O-OFDM, Nyquist-WDM), system analysis and evaluation. Advanced digital signal processing techniques for optical communications systems. Photonic integrated circuits. Fiber-optic networks, network architectures, optical node and optical switch architectures.

### **ECE 630 Optical Networks (8 ECTS)**

Current and future trends in wavelength division multiplexed (WDM) optical networks. Topics include: routing and wavelength assignment techniques, fault detection and isolation, fault protection and restoration techniques, switch fabric, node, and network architectures, traffic grooming, service availability, operational aspects of optical mesh networking, optical packet/label/burst switching, optical access networks, optical control plane.

### **ECE 631 Systems Theory (8 ECTS)**

Algebraic structures, review of vector spaces and linear algebra; topological structures; optimization; review of numerical analysis; state-space and input-output descriptions of systems; observability, controllability, and matrix fraction descriptions; observable, controllable canonical forms, and minimum realizations; linear quadratic regulator, pole placement, observers and compensators.

### **ECE 633 Security of Computer Systems and Networks (8 ECTS)**

Overview of security threats and problems; introduction to security: Security properties, attacks and threats categories, security design at various network layers; cryptography: Symmetric and asymmetric encryption; secure hash algorithms, digital signatures, key management; access control: authentication, design of authentication protocols, applications (Kerberos, public key infrastructure), certificates management,

CRLs management, authorization; IPsec/TLS/SSL; key management protocols; future developments.

### **ECE 634 Introduction to Computational Intelligence (8 ECTS)**

Introduction to the theory, methods and tools of computational intelligence for the analysis, design and optimization of knowledge representation and decision support systems. Topics include: Introduction to optimization theory including convexity theory, mathematical programming (e.g. linear, quadratic, mixed-integer), unconstrained and constrained optimization, gradient methods, duality theory, multi-objective optimization; evolutionary computation including genetic algorithms, genetic programming, evolutionary strategies and differential evolution; computational swarm intelligence including particle swarm optimization, and ant colony optimization; artificial immune systems; metaheuristic search techniques including tabu search, simulated annealing and very large-scale neighborhood search; fuzzy systems including fuzzy sets, and fuzzy logic and reasoning.

### **ECE 635 Optimization Theory and Applications (8 ECTS)**

Basic tools and concepts of the theory of optimization. The course covers the following topics: Formulation of optimization problems. In particular, problems such as optimal economic dispatch, optimization of queuing networks, optimal metering rate and optimal flow will be considered. Unconstrained optimization: Necessary conditions and sufficient conditions; general optimization algorithms; line search methods; the gradient algorithm; Newton algorithm; conjugate gradient methods; quasi-Newton methods; methods without derivatives. Constrained optimization: Necessary conditions and sufficient conditions; the notions of regularity and of complementarity; penalty functions methods; augmented Lagrangians; recursive programming. Global optimization: methods for Lipschitz functions; deterministic methods; stochastic methods. Optimization on graphs and integer programming.

### **ECE 636 Systems Identification (8 ECTS)**

Random/stochastic variable and signals, stochastic signals and linear systems, properties and models of linear and nonlinear systems, nonparametric linear systems identification in the time and frequency domain, linear regression, properties of least square methods, parameter estimation, experimental design: Open- and closed-loop systems, data preprocessing, model order selection and validation, nonlinear systems identification: Volterra-Wiener models and block-structured models.

### **ECE 643 Radio and Microwave Wireless Systems (8 ECTS)**

Antennas: Radiation from elementary dipoles, patterns and the far field, directivity, gain, efficiency, polarization, monopoles and dipoles; patch antennas, antenna arrays/beam-steering; wireless propagation and links: Friis transmission equation, diffraction and propagation over obstacles, multipath propagation in urban environments, antenna diversity; introduction to smart antennas, link equation and link budgets, radio/microwave links; receivers: Receiver figures of merit (sensitivity, dynamic range, intersymbol interference, intermodulation etc.), noise in cascaded systems, noise figure, noise temperature, heterodyne and homodyne receiver architectures, image-reject receivers; wireless systems: Fixed wireless access, wireless cellular concept; personal communication systems, satellite communications, GPS, radars, remote sensing and radiometers.

### **ECE 645 Optics and Photonics (8 ECTS)**

Introduction to photonics; physical models of light propagation (geometrical optics, wave optics, electromagnetic optics, photon optics); coherent and incoherent light; optical waveguides (slab

waveguide) and optical fibers (wave-guiding, attenuation, dispersion, polarization and nonlinearity; optical emission from semiconductors; the light emitting diode; basic operating principles of optical resonators and lasers; optoelectronics, lasers and fiber-optics; rate equations; semiconductor lasers (Fabry-Perot, distributed feedback, distributed Bragg reflector); photodetection; PIN photodiodes and avalanche photodiodes; electro-optic modulators; lithium-niobate Mach-Zehnder modulators; introduction to integrated photonics (both on silicon and compound semiconductors); fundamental principles of optical link design; power and rise-time budget.

#### **ECE 646 Advanced Antenna Theory (8 ECTS)**

Fundamental antenna parameters: System aspects. Fundamental electromagnetic theorems: Reciprocity, duality, radiation integral. Wire and mobile communications antennas: Dipoles, loops, ground-effects. Phased arrays I: Linear & circular, base station antennas. Phased arrays II: 2D-arrays, infinite-array model, multimedia satellite front-ends. Self-impedance: Integral equations and moment methods. Mutual-impedance: Induced EMF method. Aperture antennas I: Equivalent currents, rectangular apertures, horn-antennas. Aperture antennas II: Plane-wave expansion, slot antennas, Babinet's principle. Broadband antennas: Self-complementarity, spirals, log-periodic, Yagi-Uda. Integrated-circuit antennas: Patch and micromachined antennas, miniaturization. Beam forming and adaptive arrays: Butler matrix, adaptive algorithms.

#### **ECE 649 Electromagnetic Waves and Antenna Theory (8 ECTS)**

Review of Maxwell's equations and the wave equations. Solution of the wave equations in free space, wave velocity, wave impedance, Poynting's vector and polarization. Retarded potential functions, EM wave generation with a conducting current, the short uniform current dipole, the small uniform current loop, the radiated electric and magnetic fields. Near and far field expressions for E and H. Radiation pattern and radiation resistance of the dipole and the loop. Radiation lobes, half power beamwidth, beam angle, beam efficiency, directivity, directive gain, power gain, antenna efficiency, frequency bandwidth, antenna input impedance. Short and long dipoles, Folded dipoles, loops, monopoles, ground plane considerations. Travelling wave antennas, broadband antennas, and frequency independent antennas. Spiral antennas, log periodic antennas, array antennas. Yagi Uda arrays. Reflector antennas, feed configuration for parabolic antennas. Arrays, array factors, AM broadcast antenna towers, TV and FM antennas, satellite arrays. Antenna patterns, amplitude patterns, phase patterns. Feed methods, balanced feeds, coaxial feeds, waveguide feeds, impedance matching, stub tuners, baluns, horns.

#### **ECE 651 Advanced Iterative Methods (8 ECTS)**

Introduction to advanced iterative methods for solving computationally hard practical engineering problems or efficiently approximating them if they are intractable. Specific topics include representation and searching of graphs, minimum-weight spanning trees, single-source and all-pairs shortest paths, maximum flow networks, graph coloring, NP-complete problems, proofs of NP-completeness, usage of efficient approximation algorithms for NP-complete problems.

#### **ECE 653 Advanced Embedded Real-Time Systems (8 ECTS)**

Basic computer architecture and hardware elements relevant to the study of real-time issues; low-level input/output devices, interrupt controllers, and CPU cores; programmable logic controllers, PID controllers, software design and specification

methods such as flowcharts, state transition diagrams (finite state automata), and Petri nets; real-time kernels, including task scheduling, interrupt latency, and communication and synchronization of tasks; system performance; evaluation and verification; embedded intelligence.

#### **ECE 654 Advanced Computer Networks (8 ECTS)**

This course covers advanced principles of computer networks. Topics include network architecture, direct link networks, packet switching networks, internetworking, network protocols, flow control, congestion control, traffic management, resource allocation, pricing and applications. The course will also provide a systems and control perspective into communication networks research. It will emphasize on fundamental systems issues in networking and survey a variety of techniques that have recently been used to address them, including, queuing theory, optimization, large deviations, Markov decision theory, and game theory.

#### **ECE 655 Advanced Operating Systems (8 ECTS)**

In-depth investigation of the major areas in the design and analysis of modern and future operating systems, with focus on virtualization, distributed operating systems, multiprocessor systems, recovery management, protection and security. Investigation of case studies concerning the design principles underlying three main operating systems, namely, Windows 7, Linux, and Android. The course will also discuss, through research papers, the design principles of operating systems in emerging paradigms such as the Cloud and the Internet-of-Things.

#### **ECE 656 Advanced Computer Architecture (8 ECTS)**

The format of the class is lecture and discussion. Students will work on a project related but not limited to a topic discussed in the course. Students can work on design and implementation of several real-world problems such as network processors and embedded systems, microprocessor architectures and energy-efficient and reliable systems. The projects can lead to operational prototype systems and/or publishable papers. Most importantly, experiences from the projects will benefit the student in future job search and career development.

#### **ECE 657 Computer Aided Design for VLSI (8 ECTS)**

Introduction to Application Specific Integrated Circuits (ASICs) and electronic design automation; basic CMOS technology and design rules; overview of hardware modeling with VHDL; graph concepts, algorithms and their efficiency; simulation; high-level synthesis: Datapath and control synthesis; logic-level synthesis and optimization of combinational and sequential circuits; testing (fault modeling, simulation, test generation) and design for testability; physical design automation (placement, floorplanning, routing); timing analysis; verification. Lab/project component: Usage of existing academic and commercial CAD tools for several of the above problems. Development (in C/C++) of selected CAD algorithms.

#### **ECE 658 Computer Systems Performance Evaluation and Simulation (8 ECTS)**

Poisson process. Markov chains: birth and death processes. Basic queuing theory. Little's Law. Intermediate queuing theory: M/G/1, G/M/m queues. Advanced queuing theory: G/G/m queue, priority queue, network of queues, etc. Queuing applications in computer systems. Simulation of queueing systems.

### **ECE 660 VLSI Test (8 ECTS)**

VLSI testing process and Automatic Test Equipment (ATE); test economics and product quality; fault modeling; logic and fault simulation; combinational and sequential circuit test generation (ATPG); memory and delay testing; design-for-testability (DFT); built-in self-test (BIST); system and core-based design test; system reliability.

### **ECE 663 Advanced Distributed Systems (8 ECTS)**

This course covers advanced concepts and techniques in distributed systems and associated applications. Topics that will be covered include: system models, peer to peer systems (both structured and unstructured), transactions and concurrency control, distributed transactions, replication management, distributed file systems and cloud computing. The course will also cover the design of practical distributed systems focusing on Google systems as a case study including the overall architecture and design philosophy, underlying communication paradigms, data storage, coordination services and distributed computation services.

### **ECE 664 Digital Design with FPGAs (8 ECTS)**

The course aims in teaching modern rapid prototyping techniques using state-of-the-art software and hardware design principles. Students taking the course will learn how digital systems are designed from specifications to a fully functional and working prototype. Through the use of FPGAs prototyping boards, students will be given design specifications and will proceed to design, develop, synthesize, implement, test, debug and deliver a complete FPGAs design project.

### **ECE 665 Instrumentation and Sensors (8 ECTS)**

Basic measurement theory (precision, accuracy, resolution, validity, reliability, static and dynamic measurements, dynamic range, measurement errors, hysteresis), principle of sensor and transducer operation (resistive, induction, capacitive, piezoelectric, thermoelectric, radiation, optical) and calibration, sensor types (temperature, light, force, displacement, motion, sound), bridge circuits, signal amplification via opamp circuits, data acquisition and conversion, signal measurements and analysis, signal sources and practical issues. Signals and circuit noise analysis, Biosignal origins, biopotential electrodes and electrical stimulation, safety aspects of instrumentation (physiological effects of electricity, shock hazards, measures to mitigate shock risk in instrumentation design).

### **ECE 667 Microwave Circuits (8 ECTS)**

The wave equation; losses in conductors and dielectrics; RF/microwave transmission lines; impedance matching; planar lines (microstrip, stripline, coplanar waveguide); scattering parameters; 3- and 4-port devices (power dividers/combiners, couplers, isolators & circulators); coupled lines and devices; RF/microwave filters; microwave active circuits (RF amplifiers, mixers, receiver front ends).

### **ECE 671 Neurophysiology and Senses (8 ECTS)**

Advance study of neurophysiology, sensory systems and higher functions. The physiology of excitable cells with emphasis on cellular mechanisms, synaptic integration, signal processing, and sensory/motor interactions in nervous systems. Computer simulations with neural signals.

### **ECE 680 Power Systems Analysis (8 ECTS)**

The course provides basic and advanced concepts of power system analysis. Development of analytical skills to perform

analysis of power systems. Analyze balanced and unbalanced systems using symmetrical components. Study transformers and per unit sequence models, transmission line modeling, power flow solution techniques, bus impedance and admittance matrices, power system stability. Projects and term papers to develop a deep understanding of the operation of power systems so that the students are well prepared to enter the workforce as network engineers or to perform research in this area.

### **ECE 681 Power Systems Operation and Control (8 ECTS)**

Basic principles of generation and control in power systems. Economic dispatch, unit commitment, automatic generation control. Linear and dynamic programming and solution of problems. Steam and hydro units, fuel scheduling, production costing, observability, state estimation, power flow, deregulation.

### **ECE 682 Renewable Sources of Energy – Photovoltaics (8 ECTS)**

Introduction to renewable energy sources with main emphasis on photovoltaic (PV) energy conversion. Current state in Cyprus and potential. Types of photovoltaic systems. History of photovoltaic technology development. Current status: Technology, policy, markets. Solar insolation. Short review of semiconductor properties. Generation, recombination and the basic equations of device physics. Efficiency limits, losses, and measurements. Physics of photovoltaic systems, including basic operating principles, design and technology, and performance of individual solar cells and solar cells systems. Current fabrication technologies. Design of cells and modules. Other materials. Applications.

### **ECE 683 Power Electronics (8 ECTS)**

Introduction to power electronics, switching converters, concept of steady state, ideal switches. Semiconductor devices, I-V characteristics and limitations. Analysis of basic dc-dc converters, buck, boost, buck-boost, SEPIC and Cuk converters, Voltage rectifiers, Power quality issues, single phase and three phase rectifiers Power factor correction circuits (PFC). Thyristor converters, single phase and three phase full bridge converters. Basic magnetic circuits, applications in converters. Analysis of converters with electrical isolation, forward, fly-back, push-pull and full-bridge converters. Synthesis of DC and low frequency sinusoidal AC voltage, bi-directional switching power pole, pulse width modulation, single and three phase inverters. Thermal management, EMI. Applications of switch-mode power supplies, Control of DC and AC motors, uninterruptible power supplies. Applications of power electronics in distributed generation systems, wind, solar and storage systems, in HVDC links. Introduction to flexible AC transmission systems.

### **ECE 685 Power System Plant and Operation (8 ECTS)**

A power system plant embraces all the equipment, including structural members that constitute a unit power source. The module aims to provide an introduction to the overall design of power plant systems, focusing both on the system and on the component design. It will consequently provide an overview of the manufacturing, operating and thermal aspects of systems and the decisions necessary to deduce an optimal power plant design. Therefore, this unit aims to put into context the fundamentals of the plant parameters, by specifically introducing the following concepts: Overhead transmission lines: Design and operation; underground power cables: Design and operation; power transformers: Design and operation; technical and economical assessment of power systems.



### **ECE 686 Power System Modelling (8 ECTS)**

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A number of events and challenges exacerbated at the onset of the 21st century, as well as future challenges, require thorough understanding of the operating principles and main features of a power system plant which is fundamentally important to power engineers. The module embraces the following simulation-based exercises: Overhead line design and parameter evaluation; thermal rating of HV underground power cables; electric field stress on the insulation material on power cables through finite element modelling; modelling of non-linear properties of transformers' core characteristics and design; losses evaluation on transformer structural components under saturation conditions. Final comprehensive exercise (real case scenario).

### **ECE 687 Building Integration of Photovoltaic (PV): Towards Nearly Zero Energy Buildings (NZEB) (8 ECTS)**

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Introductory graduate-level course on building integration of photovoltaics (BIPV) in a Nearly Zero Energy Building (NZEB) context. Review of current policy, directives, regulation, and goals on building energy efficiency and NZEBs. Available advanced components, technologies, tools, systems, techniques, and theories in modeling a building for achieving NZEB design and incorporating BIPV. Calculation of the size and cost of a system to offset building energy use. Study of smart systems for energy management and grid integration: Monitoring consumption, RES generation, and environmental conditions are included, as well as case studies of smart meter projects.

### **ECE 690 Fault Tolerant Systems (8 ECTS)**

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The course offers an exposure to advanced concepts in the design of fault-tolerant digital systems, including combinational and dynamic systems. The course blends together techniques from coding and complexity theory, digital design, and control, automata and system theory. The topics addressed include fault models and error manifestations, module and system level fault detection and identification mechanisms, techniques for reliability/availability assessment, information redundancy and coding in computer systems, reconfiguration techniques in multiprocessor systems and VLSI processor arrays, and software fault tolerance techniques.

### **ECE 701/704 Graduate Seminar M.Sc. and Ph.D. (4 ECTS)**

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Seminars exploring current research and topical issues in electrical and computer engineering, focused on the general theme of innovation. Seminars are organized in blocks with related content, and are presented by prominent outside speakers as well as by faculty members and graduate students. Each seminar includes a presentation, in addition to wide-ranging discussions among speakers, faculty, and students. Discussions involve issues such as relations between presented research areas, requirements for further advances in the state-of-the-art, the role of enabling technologies, the responsible practice of research, and career paths in engineering. The course requires participation in at least 25 seminar presentations. The graduate seminar coordinator is responsible for assigning a pass/fail grade.

### **ECE 705 Graduates Seminars for M.Eng. Students (2 ECTS)**

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Seminars exploring current research and topical issues in electrical and computer engineering, focused on the general theme of innovation. Seminars are organized in blocks with related content, and are presented by prominent outside speakers as well as by faculty members and graduate students. Each seminar includes a presentation, in addition to wide-ranging discussions among speakers, faculty, and students.

Discussions involve issues such as relations between presented research areas, requirements for further advances in the state-of-the-art, the role of enabling technologies, the responsible practice of research, and career paths in engineering. The course requires participation in at least 12 seminar presentations. The graduate seminar coordinator is responsible for assigning a pass/fail grade.

### **ECE 711 Directed Study for M.Sc. Students (8 ECTS)**

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Opportunity for individual study at the Master level, on topics related to electrical and computer engineering not covered by other courses offered by the Department. Students can initiate the arrangements and file a proposal, in consultation with a faculty member. The course requires a final report describing the material examined and the work performed.

### **ECE 713-714 Independent Study for M.Sc. Students I and II (4 ECTS)**

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Opportunity for individual study at the Master level, on topics related to electrical and computer engineering not covered by other courses offered by the Department. Students can initiate the arrangements and file a proposal, in consultation with a faculty member. The course requires a final report describing the material examined and the work performed.

### **ECE 721-722 M.Sc. Thesis I and II (15 ECTS)**

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Graduate research work leading to a dissertation on a specific topic of interest. Topic is arranged by the students and their Research Supervisors. The students write and present their thesis in front of an audience and are evaluated by the Master Thesis Committee. For more information, please refer to the Master Requirements Section of the Postgraduate Rules of Study.

### **ECE 723-724 Project for M.Eng. EE and CE students (8 ECTS)**

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This course is mandatory for M.Eng. students and aims at the implementation of an individual project, which is required for the M.Eng. degree. The topic of the project is defined by the course instructor in collaboration with the student. This course has a duration of one semester, at the end of which the student must present/demonstrate the results of the project. In addition to the project work, presentations are also made on general issues of interest to engineers (e.g., issues of open access, ethics, copyright, project management, product management, etc.), as well as literature review on different areas of interest and presentation of the literature reviews.

### **ECE 731-732 Ph.D. Comprehensive Examination I and II (0 ECTS)**

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Ph.D. students are required to register for ECE 731 during the semester the examination takes place. In the event of failure, a student is permitted a second and final examination. In this event, the student must register for ECE 732. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

### **ECE 751-752 Directed Study for Ph.D. Students (8 ECTS)**

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Opportunity for individual study at the Ph.D. level, on topics related to electrical and computer engineering not covered by other courses offered by the Department. Students can initiate the arrangements and file a proposal, in consultation with one of the faculty. The course requires a final report describing the material examined and the work performed.

### **ECE 753-754 Independent Study for Ph.D. Students I and II (4 ECTS)**

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Opportunity for individual study at the Ph.D. level, on topics related to electrical and computer engineering not covered by other courses offered by the Department. Students can initiate



the arrangements and file a proposal, in consultation with one of the faculty members. The course requires a final report, describing the material examined and the work undertaken.

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**ECE 761-764 Research Stage of Ph.D. Dissertation IA, IIA, IIIA and IVA (30 ECTS)**

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Graduate research leading to a doctoral dissertation. The topic is determined by the Research Supervisor in consultation with the student. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

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**ECE 765-768 Research Course for Ph.D. Dissertation IB, IIB, IIIB and IVB (15 ECTS)**

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Graduate research leading to a doctoral dissertation. The topic is determined by the Research Supervisor in consultation with the student. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

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**ECE 771-776 Writing Stages of Ph.D. Dissertation I-VI (30 ECTS)**

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Graduate work leading to the written doctoral dissertation. To be arranged by the Research Supervisor in consultation with the student. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

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**ECE 777-782 Writing Stages VII-XII (30 ECTS)**

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Graduate work leading to the written doctoral dissertation. To be arranged by the student and his/her Research Supervisor. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

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**ECE 783 Ph.D. Research Proposal Examination (0 ECTS)**

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Graduate work leading to the Ph.D. Thesis Proposal defense. It is arranged by the supervising professor and the evaluation committee of the research proposal in consultation with the student. Please refer to the Doctor of Philosophy Degrees Section of the Postgraduate Studies Rules for additional information.

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**ECE 795 Pattern Recognition (8 ECTS)**

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This course offers students a strong background in pattern recognition with a variety of methods. The course includes the following topics: Probability and decision theory overview, Bayesian inference, linear regression and classification models, nonlinear classification and neural networks, core vector machines and supported vector machines, Bayesian networks and random Markov fields, principal and independent component analysis, mixture models and expectation maximization, sampling methods.

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**ECE 798/799 Special Topics in Electrical and Computer Engineering (8 ECTS)**

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Specialized topics in the field of Electrical and Computer Engineering. Opportunity for postgraduate students and instructors to investigate a topic of common interest. The subject and the instructor are announced after a topic of interest has been identified.

## MASTER OF SCIENCE (M.Sc.) IN INTELLIGENT CRITICAL INFRASTRUCTURE SYSTEMS

The M.Sc. programme in Intelligent Critical Infrastructure Systems (CIS) is offered by the Department of Electrical and Computer Engineering at the University of Cyprus, in collaboration with the UCY KIOS Research and Innovation Center of Excellence (KIOS CoE) and Imperial College London (ICL), both international leaders in research and innovation activities in the topics of this M.Sc. programme.

Critical infrastructures are assets or systems, which are essential for the maintenance of vital societal functions. The principal examples are electric power systems, water distribution networks, telecommunication networks, and transportation systems. Without these, other basic infrastructures (e.g. banking, hospitals, schools, tourism, etc.) cannot operate as intended. Critical infrastructures provide the foundation on which communities are built and, when properly functioning, they enable economic growth and social well-being. As urbanization increases, critical infrastructures worldwide are expanding and are becoming more complex, necessitating greater efficiency and improved capabilities in order to sustain their effective operation.

The main objective of the M.Sc. programme is to teach highly innovative methods, tools, and technologies for the monitoring, control, management, and security of CIS for a competent workforce, that will be recruited by local and regional authorities and international companies seeking to make CIS more reliable, safe, resilient, efficient, and sustainable. In addition, the programme is designed to transfer knowledge on the research and innovation challenges faced by modern CIS and cultivate student interest in pursuing a career path in research and innovation. Doing so, it is expected to contribute to the transformation of the research and innovation culture of Cyprus and the Mediterranean-Middle East region. The programme is open to students from different technical backgrounds, spanning the different areas of science and engineering. The language of instruction is English.

### Minimum Requirements to be considered for Admission

1. A Bachelor's Degree in an Engineering or Science discipline that must have been judged as equivalent to a University Degree by the Cyprus Council for Recognition of Higher Education Qualifications.
2. English Language Certification or other accepted International Standard. Proficiency in English can be demonstrated through one of the following: C-grade at English GCSE; IELTS score of 6.5 or above; Test of English as a Foreign Language (ETS TOEFL®) with a minimum score of 550 (paper based), 213 (computer based) or 80 (internet-based).

## Curriculum

The programme involves coursework of 92 ECTS in total, with 8 compulsory courses (60 ECTS), an MSc Thesis (30 ECTS), and graduate – level seminars and workshop (2 ECTS). The structure of the programme is summarized in the table below, on a semester basis.

		ECTS
<b>First Semester</b>		
ECE 801	Monitoring and Estimation	7
ECE 802	Optimization of CIS	7
ECE 803	Security for CIS	7
ECE 807	CIS Applications I – Fundamentals	9
<b>Second Semester</b>		
ECE 804	Industrial Control	7
ECE 805	Machine Learning	7
ECE 806	Innovation and Entrepreneurship	7
ECE 808	CIS Applications II - Advanced	9
<b>Third Semester</b>		
ECE 809-810	M.Sc. Thesis for Intelligent CIS I & II	30
ECE 811	M.Sc. Seminars & Workshop	2

## Courses Description

### **ECE 801 Monitoring and Estimation (7 ECTS)**

The purpose of this course is to familiarize the students with some of the main techniques for estimating the state of a dynamical system and use the state of estimation to detect faults in some of the system's components such as sensor faults and water leaks. Topics include classical estimation theory, observer design, Kalman filters, and fault diagnosis. The students will learn to design and implement (in MATLAB) state estimators and fault detection algorithms for various systems, as well as to model faulty components. Infrastructure (small-scale testbed and simulation software) from the KIOS Laboratory for Power Systems and Renewable Energy will be used in the teaching of estimation theory and observer design. Furthermore, an in-house developed platform on intelligent vehicle routing will be integrated in the teaching of Kalman Filter algorithm, while the KIOS platform for smart water networks will be used in the teaching of fault diagnosis methods.

### **ECE 802 Optimization of CIS (7 ECTS)**

This course introduces finite-dimensional optimization and decision theory and basic optimization algorithms. The formulation of optimization problems arising in CIS is also presented together with worked out examples. After the course, the students will be able to formulate optimization problems, design computer algorithms for finding minima and maxima in a wide range of optimization problems involving smooth criteria and, just as importantly, to interpret, and if necessary, modify, the algorithms found in standard computer packages. The students will also be able to formulate and solve decision making problems and problems involving graphs. Finally, the students will be capable of formulating optimization problems arising in CIS and to compute their solutions.

### **ECE 803 Security for CIS (7 ECTS)**

The aim of this course is to cover the underlying principles and techniques used in securing CIS and to give examples of how they are applied in practice. At the end of the course, the students will have an understanding of the themes and challenges of CIS security and the current state of the art, they will have developed a critical approach to the analysis of CIS security and will be able to bring this approach to bear on future decisions regarding security. Finally, students will be able to appreciate the main threats, attack techniques and defenses relevant to the security of CIS, to identify potential vulnerabilities and propose countermeasures and to design secure critical infrastructure systems.

### **ECE 804 Industrial Control (7 ECTS)**

The aim of the course is to provide basic elements of industrial control systems as well as a glimpse of advanced multi-variable control of generic large-scale systems related to critical infrastructures. Insight on basic concepts of multi-variable control is given with emphasis on optimal and model-predictive control approaches, as well as insight on the basic architectures of modern multi-level software automation architectures. The automation SW architectures and technologies are put in the context of CIS use cases where appropriate. The students, at the end of the course, should know the basic principles governing the analysis and design of multivariable control systems in the context of large-scale systems. They should be able to carry out the static and dynamic analysis characterization of models to be used in the design of multi-variable control systems. Moreover, they should be able to evaluate, among several options, how to configure and design the architecture and the controller of a multi-variable automatic control system starting from requirements and considering technological constraints.

### **ECE 805 Machine Learning (7 ECTS)**

This course aims to introduce the theory, methods and applications of the field of Machine Learning. The objectives of the course are the presentation of the core principles and algorithms of supervised, unsupervised and reinforcement learning, the explanation of the application of these algorithms for the solution of regression, classification, clustering and decision-making problems and the demonstration of practical machine learning tools suitable for the analysis of data sets and the solution of machine learning problems. Special emphasis will be placed on real-world critical infrastructure systems applications. By the end of the course, students should be able to understand the principles of supervised, unsupervised and reinforcement learning, to design and implement a wide variety of machine learning algorithms, to analyze raw data to create representations that are more suitable for machine learning algorithms and to solve and evaluate the performance of classification, regression, dimensionality reduction and clustering problems that arise in critical infrastructure systems using state-of-the-art machine learning tools.

### **ECE 806 Innovation and Entrepreneurship (7 ECTS)**

Creating new businesses calls for venturing into unknown territory. This course examines successful strategies, business models, and frameworks for introducing innovative products and services to the market. Topics include human-centered and design-driven innovation, lean-start-up methodology, and business model innovation. The main purpose is to explore the many dimensions of new venture creation and growth. Students will gain thorough knowledge of where innovation can be found within an organization, how to recognize it, and how it can be

used for competitive advantage. While most examples will be drawn from new venture formation, the course examines cases in ICT-related entrepreneurship. Cases, lectures, and projects focus on emerging and established firms in a number of industries for which innovation is a key source of competitive advantage.

#### **ECE 807 CIS Applications I – Fundamentals (9 ECTS)**

This course provides a solid understanding on the fundamentals of the following critical infrastructure systems: electric power systems, telecommunication networks, water distribution networks, and transportation networks. To understand how to model and simulate simple instances of these networks, it introduces general tools for modeling such systems (automata, Petri-nets, graph theory, conservation laws, differential and algebraic equations, partial differential equations) and general tools for simulating and analyzing such systems (discrete event simulation, steady-state methods, state-space, design of algorithms). By the end of the course students will obtain the fundamental skills required to model the most important critical infrastructure system components and the systems as a whole. They will also be able to simulate simple cases for these systems under steady state and faulty conditions.

#### **ECE 808 CIS Applications II – Advanced (9 ECTS)**

The purpose of this course is to provide a solid understanding of the following critical infrastructure systems: electric power systems, telecommunication networks, water distribution networks, and transportation networks. The course aims to: model and analyze these systems using advanced network simulators, help students understand the practical problems in the control and management of these systems, and to obtain practical skills related to the design and operation of these systems under normal and faulty conditions. The students are expected to be able to model the most important critical infrastructure system components and be able to analyze them under steady state conditions. Moreover, they should be able to design and simulate these systems according to given operational criteria and constraints. Finally, students should understand the technical, economic, and environmental implications of the design and operation of critical infrastructure systems.

#### **ECE 809/810 M.Sc. Thesis for Intelligent CIS I and II (30 ECTS)**

The M.Sc. thesis is a full-year project which enables students to carry out research in order to deepen their scientific and applied knowledge and skills in a specific topic in the area of Intelligent CIS. The thesis is expected to give the opportunity to students to work on a comprehensive, individual project that demonstrates mastery in innovative ICT techniques to address monitoring, control, management and security of CIS at the technical, managerial and policy level. Through their research, students will understand technical and management features in Intelligent CIS, learn to deal with particular challenges in Intelligent CIS and obtain experience in research methods, including technical writing and communication skills, as well as project management. The thesis constitutes a significant piece of research and should be of suitable complexity for results to be published for an expert audience. Projects are allocated at the end of February of the 1st year of study (student proposals for projects may also be allowed, after examination and approval by the Programme's Committee). Projects can be carried out in collaboration with the industry, tackling specific research challenges faced by the industry. For industrial projects, the

specific project and student(s) involved are approved mutually by the project supervisor(s) and the specific company/organization.

#### **ECE 811 M.Sc. Seminars & Workshop (2 ECTS)**

Seminars exploring current research and topical issues in the areas of monitoring, control, management, and security of CIS, as well as other related electrical and computer engineering disciplines, focused on the general theme of innovation. Seminars are organized in blocks with related content, and are presented by prominent external speakers as well as by faculty members and graduate students. The course requires participation in at least 15 seminar presentations over the course of the M.Sc. programme. Students must attend at least 5 non-technical seminar presentations. Students are also expected to participate in a dedicated workshop, organized at the University of Cyprus, which will be exploring specific research and innovation topics related to their M.Sc. programme. The workshop will include prominent speakers from the academia and industry. During the workshop, students will also be required to showcase the work for their M.Sc. thesis, attend the presentations by other fellow M.Sc. students, and discuss their research work and exchange ideas with other students and faculty.

For detailed information regarding the M.Sc. in Intelligent Critical Infrastructure Systems, please refer to the following contact details:

### **Contact Details**

Tel.: +357 22893460

Fax: +3357 22893455

E-mail: [mccis@ucy.ac.cy](mailto:mccis@ucy.ac.cy)

[www.mccis.ucy.ac.cy](http://www.mccis.ucy.ac.cy)

## Research Interests of the Academic Staff

### • Chrysafis Andreou, Lecturer

Nanotechnology and nanomedicine, Biomedical and molecular imaging, Chemical detection, Microfluidic devices, and biofluid analysis.

### • Marco Antoniadis, Assistant Professor

Applied electromagnetics, and specifically in the areas of passive and active antenna design, RF/microwave circuits and negative-refractive-index metamaterials for use in broadband wireless communications, Radio-frequency identification, Wireless sensing, Biomedical applications and alternative energy systems.

### • Charalambos A. Charalambous, Associate Professor

High and low frequency transient phenomena in the power network, Power system plant modelling and visualization (for extreme operating conditions), Power transformers ferroresonance, Earthing and control of DC and AC corrosion, Effect of climate change on power system infrastructure, System protection schemes for distributed generation.

### • Charalambos D. Charalambous, Professor

Stochastic Systems, Information Theory, large deviations and optimization with applications in robust control, estimation, decision, telecommunications, sensor networks.

### • Georgios Ellinas, Professor

Optical networks, Fault detection, Fault identification/isolation, Fault protection/restoration, Routing, Switch fabric architectures, Optical access networks, Optical network security, Multicasting, Traffic Grooming, Optical control plane design, WDM and EON network architectures, IoT, Critical infrastructure systems.

### • George E. Georghiou, Professor

Electromagnetic field measurements and compatibility testing, Utilization of electromagnetic fields in emerging technologies (transcranial magnetic stimulation, DNA microchip electrophoresis, Electronic manipulation of nano-particles, microwaves and RF for heating and food processing), Plasma processes and gas discharges (plasma sources at atmospheric pressure for biomedical applications, utilization of gas discharges for plasma production), Wireless power applications, Numerical modelling of multiphysics problems (development of serial and parallel algorithms, computational electromagnetics calculations), Renewable sources of energy.

### • Julius Georgiou, Associate Professor

Low-power analog and asynchronous-digital application specific integrated circuits (ASICs), Implantable biomedical devices, Bioinspired electronic systems, Silicon-on-insulator design, Sub-threshold circuits and systems, Sensors and related systems.

### • Christoforos Hadjicostis, Professor

Fault-tolerant dynamic systems, Error control coding, Reliable and trustworthy design of large-scale systems and networks, Distributed control and monitoring, Discrete event systems, Communication and signal processing systems, Algebraic system analysis.

### • Stavros Iezekiel, Professor

Microwave photonics: High-speed laser diodes, photodiodes and modulators, mm-wave fiber radio systems, microwave-photonics packaging, lightwave measurements, all-optical microwave filters.

### • Ioannis Krikidis, Associate Professor

Communication theory, Wireless communications, MIMO communications, Cooperative networks, Relay channel, Green radio, Energy harvesting, RF energy transfer, Cognitive radio, Physical-layer security, Resource allocation, Convex optimization, Queuing theory, Probability theory, Performance analysis, High order statistics, Information theory, Reconfigurability.

### • Maria K. Michael, Associate Professor

Computer-aided design and test automation for VLSI and embedded systems (including SoCs and multi/many-core based systems), Testing and fault diagnosis, Design for testability, Microprocessor test, Fault tolerance and reliability, Test-based/semi-formal verification and timing analysis, Decision diagrams and Boolean satisfiability, Graph theory and algorithms for VLSI.

### • Chrysostomos Nicopoulos, Associate Professor

Multi/many-core computer architecture, Packet-based networks-on-chip (NoC), NoC router architectures for chip multi-processors (CMP) and heterogeneous multi-processor systems-on-chip (MPSoC), On-chip interconnection architectures, Three-dimensional (3D) system architectures, Embedded system architectures, and VLSI digital system design.

### • Christos Panayiotou, Professor

Optimization and control of discrete-event systems with applications to computer communication networks, Manufacturing systems and transportation networks.

### • Mathaios Panteli, Assistant Professor

Grid integration of renewable energy sources, Techno-economic reliability, resilience and flexibility assessment and planning of future smart energy systems, Climate change impact on power systems, Optimization and machine learning techniques applied to power systems, Integrated modelling and analysis of co-dependent critical systems

### • Constantinos Pitris, Professor

Optics and biomedical imaging. The underlying goal of this research is the introduction of new technologies in clinical applications for the improvement of the diagnostic and therapeutic options of modern health care systems to directly impact patient prognosis and outcome.

### • Marios Polycarpou, Professor

Systems and control, Adaptive and intelligent control, Neural networks and computational intelligence, Fault diagnosis and cooperative control.

### • Theocharis Theocharides, Associate Professor

High-performance, Reliable and energy-efficient systems-on-chip design and embedded systems architectures, Interconnection architectures, Design of hardware architectures for multimedia, artificial intelligence, signal processing and machine vision applications, Computer arithmetic, Low power and reliable architectures and VLSI design.

### • Stelios Timotheou, Assistant Professor

Optimization, Machine learning, Computational intelligence, Statistical data processing, Fault diagnosis, Information and decision systems, Monitoring and control, Intelligent transportation systems, Connected and automated vehicles, Wireless communication systems, Simultaneous wireless information and power transfer.

## Contact Details

### DEPARTMENT SECRETARIAT

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# Department of Mechanical and Manufacturing Engineering

[www.ucy.ac.cy/mme](http://www.ucy.ac.cy/mme)

The Department of Mechanical and Manufacturing Engineering offers a high-quality graduate programme, both at the Master and Ph.D. levels. This programme emphasizes fundamental principles that prepare students for leadership roles in a challenging and rapidly changing technological world. Research and innovation are encouraged in an environment that fosters cooperation among faculty, students, industry, and research organizations. The faculty in the Department of Mechanical and Manufacturing Engineering is comprised of experienced and distinguished academicians with expertise in a wide range of research fields pertinent to Mechanical and Manufacturing Engineering.

The objective of the postgraduate programme is to train young scientists with up-to-date knowledge and techniques in the fast growing, and of particular importance for the society, field of Mechanical and Manufacturing Engineering. The students are specialized in one of the research areas of the programmes with the aim to create proper conditions for a successful professional career in the public or private sector, in industry, in academic institutions or research organizations.

The research areas are: i) Energy Systems, ii) Materials Science and Technology, iii) Mechanical Systems Modelling and Controls, iv) Design, Manufacture, Automation and Robotics, v) Micro- and Nanotechnology, vi) Biomedical Engineering and vii) Computational mechanics of solids and fluids.

The department offers the following postgraduate degrees:

- Master of Science (M.Sc.) in Mechanical and Manufacturing Engineering
- Master of Science (M.Sc.) in Advanced Materials and Nanotechnology
- Master in Energy Technologies and Sustainable Design (Inter-departmental programme, Master of Engineering or Master of Science)
- Doctor of Philosophy (Ph.D.) in Mechanical and Manufacturing Engineering
- Doctor of Philosophy (Ph.D.) in Advanced Nanomaterials and Nanotechnology

## Mechanical and Manufacturing Engineering

Since the time of Hephaistos, Daedalos, Archimedes and Heron, Mechanical and Manufacturing Engineering has played a key role in serving the needs of modern society. Manufacturing Engineering focuses on inventing, designing and producing a wide variety of novel and useful products such as airplanes and spacecraft, robots and computer chips, sporting goods and medical instruments. Mechanical Engineering deals with studying,

understanding and improving their operation. The field of Mechanical and Manufacturing Engineering is also the gateway for rising interdisciplinary areas of research, such as Nanotechnology and Biomedical Engineering, which promise to dramatically transform our lives and society in the near future. In addition to automobiles, air conditioners and water-bikes that we use and work with every day, society depends on mechanical and manufacturing engineers to provide new technologies and tools for its needs in health, safety, information, industry, space exploration, transportation, agriculture

and food, and power production, along with education, research and professional employment of young people.

## Advanced Materials and Nanotechnology

**Materials Science** studies the fundamental physical and chemical basis for the controlled combination of atoms to form new compounds, phases, and micro-structures, as well as the characterization of the resulting structures and properties, aiming at understanding the structure-processing-properties relationships in the final product. **Materials Technology** focuses on the synthesis of materials in useful quantities, and on the processing of materials into engineering products. Materials Technology draws heavily on the fundamental knowledge gained from materials science, and adapts the processes involved for the scale and requirements of the application. **Materials Science and Technology** is an interdisciplinary research area appearing in an autonomous and legible form. During the last few decades we have witnessed a significant revolution in the applications of novel materials. Some examples of this revolution include the explosive evolution of microelectronics, the extended use of synthetic polymers, the development of high-strength steels capable of operating at elevated temperatures, the development of new biocompatible materials, as well as the applicability of highly transparent glasses used in optical-fiber telecommunications. Furthermore, the area of Nanotechnology, i.e. the Science and Technology of Nanostructures, has come to the fore at an international level, as a broad interscientific area of research and development.

## Financial Support

The University of Cyprus supports many graduate students through teaching assistantships, the number of which depends on the teaching needs of the Department. There are also additional funding opportunities, information on which is available through the School of Postgraduate Studies. A number of students can also be financially supported through research programmes.

## MASTER OF SCIENCE DEGREE (M.Sc.)

### Admission

Applicants to the M.Sc. programme must possess the equivalent of a B.Sc. Degree in Mechanical and/or Manufacturing Engineering, or in a related field of science or engineering, from the University of Cyprus or other accredited institution or programme.

Candidates must submit an application form to the Department within the announced time limits. All applications are evaluated by the Graduate Studies Committee of the Department, which makes suggestions to the Council of the Department for final approval of the selected candidates. The applicants to the M.Sc. programme are selected according to the following criteria, while the Department reserves its right to fill only as many announced graduate student positions as the Department deems appropriate:

- Quality of the applicant's background in breadth and depth, and past performance in his/her undergraduate or graduate studies.
- Evidence of ability for original and innovative research in the proposed area of study.
- Relevance of the proposed field of research to the interests of the Department, the University and the society.
- Availability of graduate positions in the programme and the necessary infrastructure and resources to support the proposed M.Sc. work.

Students should select, in consultation with their advisors, the courses that will help them in the completion of their M.Sc. thesis. Most coursework eligible for the M.Sc. programme must be graduate-level courses. M.Sc. students are considered full-time if they are enrolled in 18 or more ECTS each semester.

## Transfer of Credit and Student Exchanges

Students admitted to the M.Sc. Programme of the Mechanical and Manufacturing Engineering Department from an accredited graduate programme may, upon approval of their petition to the Department Graduate Studies Committee, transfer ECTS for graduate coursework they have successfully completed towards the requirements of the M.Sc. degree, according to the General Graduate Studies Regulations.

In the framework of inter-university student exchange programmes, M.Sc. students may, in agreement with their Advisor and approval of their petition to the Department Graduate Studies Committee, attend courses and conduct research at an accredited university abroad.

## Master of Science Thesis

An original research study and a thesis are required for the M.Sc. degree. The subject of the student's research is chosen in consultation with his Advisor. The student must submit a thesis proposal at least two semesters before the intended date of graduation. Furthermore, one semester before the intended date of graduation, the student must present a progress report to the members of the committee.

For more information on the writing and presentation of the thesis, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department's Secretariat.

## Duration of Studies

The minimum duration of the M.Sc. programme for full-time students in Mechanical and Manufacturing Engineering is three semesters, including the summer between the two academic years. The maximum duration for the completion of the M.Sc. degree is defined by the University regulations (eight semesters).

## MASTER OF SCIENCE (M.Sc.) IN MECHANICAL AND MANUFACTURING ENGINEERING

Graduate students are awarded the M.Sc. Degree in Mechanical and Manufacturing Engineering, after successfully completing the required programme of study and successfully defending and writing their M.Sc. thesis.

### Programme Structure

The programme of study leading to the M.Sc. Degree in Mechanical and Manufacturing Engineering requires the completion of at least of 120 ECTS in graduate level courses (beyond any taken for the Bachelors degree) and research work distributed as follows:

	ECTS
<b>First Semester</b>	
MME 531 Continuum Mechanics	8
MME 541 Manufacturing Process Automation	8
MME 518 Theory + Applications of Incompressible Newtonian and Non-Newtonian Fluids	8
MME705 Thesis Research I	6
<b>Second Semester</b>	
MME 512 Advanced Engineering Thermodynamics	8
MME 524 Modelling and Analysis of Dynamic Systems	8
Technical Elective Course 1	8
MME 706 Thesis Research II	6
<b>Third Semester</b>	
MME 707 Thesis Research III	14
Technical Elective Course 2	8
Technical Elective Course 3	8
<b>Fourth Semester</b>	
MME 708 Thesis Research IV	20

### Technical Electives

	ECTS
MME 505 Independent Study I	8
MME 506 Independent Study II	8
MME 516 Renewable Energy Technology	8
MME 517 Solar Energy Systems	8
MME 523 Signal Processing	8
MME 525 Analysis and Control of Robotic and Autonomous Systems	8
MME 532 Biomaterials in Tissue Engineering and Regenerative Medicine	8
MME 533 Biomedical and Industrial Applications of Engineering Acoustics	8
MME 535 Medical Imaging - Diagnostic Ultrasound	8
MME 551 Nonlinear Mechanics of Solids and Structures	8
MME 539 Nonlinear Mechanics & Modelling of Solids	8
MME 553 Surface Engineering	8
MME 554 Characterization Techniques of Bulk and Nano-Materials	8
MME 555 Polymers in Medical Applications	8
MME 557 Polymer Nanocomposites	8
MME 558 Fundamentals of Ceramics I	8

MME 559 Fundamentals of Ceramics II	8
MME 562 Semiconductor Processing Technology	8
MME 563 Materials Physics	8
MME 564 Nanomechanics	8
MME 565 Physical Principles, Design and Fabrication of MEMS	8
MME 566 Advanced Semiconductor Materials and Nanodevices	8
MME 567 Materials for Energy Production, Storage and Conversion	8

## MASTER OF SCIENCE (M.Sc.) IN ADVANCED MATERIALS AND NANOTECHNOLOGY

Graduate students are awarded the M.Sc. Degree in Advanced Materials and Nanotechnology, after successfully completing the required programme of study and successfully defending and writing their M.Sc. Thesis.

### Programme Structure

The programme of study leading to the M.Sc. degree in Advanced Materials and Nanotechnology requires the completion of at least 120 ECTS in graduate level courses (beyond any taken for the Bachelor degree) and research work, distributed as follows:

	ECTS
<b>First Semester</b>	
MME 557 Polymer Nanocomposites	8
MME 563 Materials Physics	8
MME 566 Advanced Semiconductor Materials and Nanodevices	8
MM 709 Thesis Research I	6
<b>Second Semester</b>	
MME 553 Surface Engineering	8
MME 554 Characterization Techniques of Bulk and Nano-Materials	8
Elective Course 1	8
MME 710 Thesis Research II	6
<b>Third Semester</b>	
MME 711 Thesis Research III 1	8
MME 507 Technical Writing and Speaking	4
Elective Course 2	8
<b>Fourth Semester</b>	
MME 712 Thesis Research IV	30

### Technical Electives

ELECTIVE COURSES	ECTS
MME 505 Independent Study I	8
MME 506 Independent Study II	8
MME 539 Nonlinear Mechanics & Modelling of Solids	8
MME 555 Polymers in Medical Applications	8
MME 558 Fundamentals of Ceramics I	8
MME 559 Fundamentals of Ceramics II	8

MME 562 Semiconductor Processing Technology	8
MME 564 Nanomechanics	8
MME 565 Physical Principles, Design and Fabrication of MEMS	8
MME 567 Materials for Energy Production, Storage and Conversion	8
MME 512 Advanced Engineering Thermodynamics	8
MME 516 Renewable Energy Technology	8
MME 517 Solar Energy Technology	8
MME 518 Theory and Applications of Incompressible Newtonian and Non-Newtonian Fluids	8
MME 523 Signal Processing	8
MME 524 Modelling and Analysis of Dynamic Systems	8
MME525 Analysis and Control of Robotic and Autonomous Systems	8
MME 532 Biomaterials in Tissue Engineering and Regenerative Medicine	8
MME 533 Biomedical and Industrial Applications of Engineering Acoustics	8
MME 535 Medical Diagnostic Imaging	8
MME 541 Manufacturing Process Automations	8
MME 551 Nonlinear Mechanics of Solids and Structure	8

## DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)

Graduate students are awarded a doctoral degree by the Department of Mechanical and Manufacturing Engineering upon completing the required programme of study and successfully writing and defending their Ph.D. thesis.

### Admission to the Ph.D. Programme

Applicants to the Ph.D. programme must hold the equivalent of a B.Sc. or M.Sc. degree in Mechanical and/or Manufacturing Engineering, or in a related field of science or engineering, from the University of Cyprus or other accredited university.

Candidates must submit an application form to the Department within the announced time limits. The evaluation criteria for candidates to the Ph.D. programme are the same as the ones for applicants to the M.Sc. programme (see relevant paragraph above).

Familiarity with the English language is required for admission to the doctoral programme.

Students should select, in consultation with their Advisors, the courses that will fulfill the requirements for their Ph.D. thesis. Most coursework eligible for the Ph.D. programme must be graduate-level courses. Ph.D. students are considered full-time, if they are enrolled in 18 or more ECTS each semester.

### Transfer of Credit and Student Exchanges

Students who have joined the doctoral programme after successfully completing a relevant M.Sc. programme, can be credited with up to 60 ECTS.

ECTS for previously completed graduate work are credited only after approval by the Graduate Studies Committee of the Department, following a justified petition by the student.

In the framework of inter-university student exchange programmes, Ph.D. students may, upon agreement with their Advisor and approval of their petition to the Graduate Studies Committee, attend courses and conduct research at an accredited university abroad.

### Comprehensive Examination

Admission to candidacy for the Ph.D. programme is granted when the student has satisfactorily passed a written comprehensive examination.

The comprehensive examination must be taken no later than the sixth academic semester from the time of enrollment in the Ph.D. programme.

### Ph.D. Thesis

An original research study and a thesis are required for the Ph.D. degree. The subject of the students' research is chosen in consultation with their advisor.

### Dissertation Proposal

Doctoral students must prepare a brief written proposal (no more than 20 pages) of their intended doctoral research, and make a comprehensive oral presentation before the Dissertation Committee and a representative from the Department's Graduate Studies Committee that demonstrates a sound understanding of the dissertation topic, the relevant literature, the techniques to be employed, the issues to be addressed and the work completed to-date. The proposal must be made two to four semesters after the successful completion of the comprehensive examination.

### Doctoral Dissertation

The doctoral dissertation must address current and valid scientific and/or technical issue(s) primarily by fundamental research, leading to new scientific and/or engineering knowledge. Applied research and development aspects, leading to a prototype or an application of this basic research, may also be included as a secondary component of the dissertation. The research must be novel and original, and of the highest scholarly standards, qualifying it as acceptable for publication in international academic journals.

The dissertation must be based on significant research findings by the doctoral candidate, distinguished clearly from the work of others, testifying to the candidate's personal contribution and scholarship, and acknowledging support by others in or outside the University. In addition, the broader impacts of the research must be highlighted in the dissertation, in terms of opening new scientific or engineering areas or issues, and generating new technical applications and innovations. Broader impacts must also be indicated in promoting learning innovation, education



at all student levels and training of the workforce; involving under represented groups in science and engineering; establishing physical infrastructure (laboratory resources, software programmes, etc.) and virtual resources (centres, networks, etc.); setting dissemination plans through scholarly publications and presentations, and outreach through the media to the public, etc.; and indicating societal implications of the work, including public health and safety, security, environmental impacts, etc.

## Dissertation Defence

Doctoral candidates are required to defend the originality, independence, and quality of their research during an oral dissertation defence.

For more information about the procedure for the comprehensive exam, the dissertation proposal, the doctoral dissertation and the dissertation defence, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat.

## Duration of Studies

The minimum duration of the Ph.D. programme for full-time students in Mechanical and Manufacturing Engineering is defined by the University regulations. The maximum duration for the completion of the Ph.D. degree is also defined by the University regulations (16 semesters).

## DOCTOR OF PHILOSOPHY (Ph.D.) IN MECHANICAL AND MANUFACTURING ENGINEERING

Graduate students are awarded the Ph. D. Degree in Mechanical and Manufacturing Engineering after completing the required programme of study, passing the comprehensive examination and successfully defending and writing their Ph.D. thesis.

## Structure of the Programme

The programme of study leading to the Ph.D. Degree in Mechanical and Manufacturing Engineering requires the completion of at least of 240 ECTS in graduate level courses (beyond any taken for the Bachelor degree) and research work, distributed as follows:

	ECTS
<b>First Semester</b>	
MME 518 Theory + Applications of Incompressible Newtonian and non-Newtonian fluids	8
MME 523 Signal Processing	8
MME 531 Continuum Mechanics	8
MME 805 Thesis Research I	6
<b>Second Semester</b>	
MME 512 Advanced Engineering Thermodynamics	8
MME 524 Modelling and Analysis of Dynamic Systems	8
MME 551 Nonlinear Mechanics of Solids and Structures	8
MME 806 Thesis Research II	6

<b>Third Semester</b>	
MME 541 Manufacturing Process Automation	8
Technical Elective 1	8
Technical Elective 2	8
MME 807 Thesis Research III	6
<b>Fourth Semester</b>	
Thesis Research IV (3X10) (MME 830 + MME 831 + MME 832)	30
<b>Fifth Semester</b>	
Thesis Research V (3X10) (MME 820 + MME 821 + MME 822)	30
<b>Sixth Semester</b>	
Thesis Research VI (3X10) (MME 823 + MME 824 + MME 825)	30
<b>Seventh Semester</b>	
Thesis Research VII (2X10) (MME 826 + MME 827)	20
MME 809 Thesis Writing I	10
<b>Eighth Semester</b>	
Thesis Research VIII (2X10) (MME 828 + MME 829)	20
MME 810 Thesis Writing II	10

## Technical Electives

	ECTS
MME 605 Independent Study I	8
MME 606 Independent Study II	8
MME 516 Renewable Energy Technology	8
MME 517 Solar Energy Systems	8
MME 525 Analysis and Control of Robotic and Autonomous Systems	8
MME 532 Biomaterials in Tissue Engineering and Regenerative Medicine	8
MME 533 Biomedical and Industrial Applications of Engineering Acoustics	8
MME 535 Medical Imaging - Diagnostic Ultrasound	8
MME 539 Nonlinear Mechanics & Modelling of Solids	8
MME 553 Surface Engineering	8
MME 554 Characterization Techniques of Bulk and Nano-Materials	8
MME 555 Polymers in Medical Applications	8
MME 557 Polymer Nanocomposites	8
MME 558 Fundamentals of Ceramics I	8
MME 559 Fundamentals of Ceramics II	8
MME 562 Semiconductor Processing Technology	8
MME 563 Materials Physics	8
MME 564 Nanomechanics	8
MME 565 Physical Principles, Design and Fabrication of MEMS	8
MME 566 Advanced Semiconductor Materials and Nanodevices	8
MME 567 Materials for Energy Production, Storage and Conversion	8

## DOCTOR OF PHILOSOPHY (Ph.D.) IN ADVANCED MATERIALS AND NANOTECHNOLOGY

Graduate students are awarded the Ph.D. Degree in Advanced Materials and Nanotechnology after completing the required programme of study, passing the comprehensive examination and successfully defending and writing their Ph.D. thesis.

### Structure of the Programme

The programme of study leading to the Ph.D. Degree in Advanced Materials and Nanotechnology requires the completion of at least of 240 ECTS in graduate level courses (beyond any taken for the Bachelors degree) and research work, distributed as follows:

	ECTS
<b>First Semester</b>	
MME 557 Polymer Nanocomposites	8
MME 563 Materials Physics	8
MME 566 Advanced Semiconductor Materials and Nanodevices	8
MME 840 Thesis Research I	6
<b>Second Semester</b>	
MME 553 Surface Engineering	8
MME 554 Characterization Techniques of Bulk and Nano-Materials	8
Elective Course 1	8
MME 841 Thesis Research II	6
<b>Third Semester</b>	
MME 842 Thesis Research III	10
MME 507 Technical Writing and Speaking	4
Elective Course 2	8
Elective Course 3	8
<b>Fourth Semester</b>	
MME 843 + MME 844 - Thesis Research IV	22
Elective Course	8
<b>Fifth Semester</b>	
MME 845 + MME 846 + MME 847 - Thesis Research V	30
<b>Sixth Semester</b>	
MME 848 + MME 849 + MME 850 - Thesis Research VI	30
<b>Seventh Semester</b>	
MME 851 + MME 852 - Thesis Research VII	20
MME 809 Thesis Writing I	10
<b>Eight Semester</b>	
MME 853 + MME 854 - Thesis Research VIII	20
MME 810 Thesis Writing II	10

## Constrained Electives

ELECTIVE COURSES	ECTS
MME 605 Independent Study I	8
MME 606 Independent Study II	8
MME 539 Nonlinear Mechanics & Modelling of Solids	8
MME 555 Polymers in Medical Applications	8
MME 558 Fundamentals of Ceramics I	8
MME 559 Fundamentals of Ceramics II	8
MME 562 Semiconductor Processing Technology	8
MME 564 Nanomechanics	8
MME 565 Physical Principles, Design and Fabrication of MEMS	8
MME 567 Materials for Energy Production, Storage and Conversion	8
MME 512 Advanced Engineering Thermodynamics	8
MME 516 Renewable Energy Technology	8
MME 517 Solar Energy Technology	8
MME 518 Theory and Applications of Incompressible Newtonian and Non-Newtonian Fluids	8
MME 523 Signal Processing	8
MME 524 Modelling and Analysis of Dynamic Systems	8
MME 525 Analysis and Control of Robotic and Autonomous Systems	8
MME 532 Biomaterials in Tissue Engineering and Regenerative Medicine	8
MME 533 Biomedical and Industrial Applications of Engineering Acoustics	8
MME 535 Medical Diagnostic Imaging	8
MME 541 Manufacturing Process Automations	8
MME 551 Nonlinear Mechanics of Solids and Structure	8

## Courses Description

It is anticipated that some minor amendments to the course offerings and content summaries provided here may occur, in an effort to further improve the curriculum. After the number, name and description of each course, there is an indication of any necessary prerequisites. Unless otherwise stated, all courses are credited with 8 ECTS.

### **MME 505 Independent Study I (8 ECTS)**

### **MMK 506 Independent Study II (8 ECTS)**

Graduate work on an independent academic project of the student's choice with consent of the advisor. May include theoretical, computational, experimental or combined work, relevant to a fundamental issue with applied and/or educational impacts. Includes preparation of comprehensive documentation and a presentation of the work to the Department. Open to M.Sc. students only as an elective.

### **MME 605 Independent Study I (8 ECTS)**

### **MMK 606 Independent Study II (8 ECTS)**

Graduate work on an independent academic project of the student's choice with consent of the advisor. May include theoretical, computational, experimental or combined work, relevant to a fundamental issue with applied and/or educational

impacts. Includes preparation of comprehensive documentation and presentation of the study to the Department. Open to Ph.D. students only as an elective.

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**MME 705-708 Thesis Research I-IV (M.Sc.) (ECTS vary)**

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Programme of graduate research leading to the defence and writing of M.Sc. thesis. Open to M.Sc. students (Mechanical and Manufacturing Engineering Programme only).

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**MME 709-712 Thesis Research I-IV (M.Sc.) (ECTS vary)**

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Programme of graduate research leading to the defence and writing of M.Sc. thesis. Open to M.Sc. students only (Advanced Materials and Nanotechnology Programme only).

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**MME 800 Comprehensive Examination (0 ECTS)**

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(See paragraph on Comprehensive Examination)

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**MME 805-807 + 820-832 Thesis Research I-VIII (Ph.D.) (ECTS vary)**

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Programme of graduate research leading to the defence and writing of Ph.D. thesis. Open to Ph.D. students only (Mechanical and Manufacturing Engineering Programme only).

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**MME 840-854 Thesis Research I-VIII (Ph.D. Advanced Materials and Nanotechnology Programme only) (ECTS vary)**

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Programme of graduate research leading to the defence and writing of Ph.D. thesis. Open to Ph.D. students only (Advanced Materials and Nanotechnology Programme only).

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**MME 809-816 Thesis Writing I-VIII (Ph.D.) (ECTS vary)**

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**MME 512 Advanced Engineering Thermodynamics (8 ECTS)**

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Thermodynamic analysis of engineering systems, emphasizing systematic methodology for application of basic principles. Introduction to availability analysis. Thermodynamics of gas mixtures and air-conditioning applications. Modern computational equations of state. Thermodynamic design software. Thermodynamics of biological systems. Introduction to compressible flow.

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**MME 516 Renewable Energy Technology (8 ECTS)**

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The energy problem: "consumption" and "sources" of energy. Mineral resources and conventional technologies: nuclear, oil, gas and coal combustion. Historical development & current status of energy generation and storage technologies worldwide, in Europe and locally. RES technologies: Towards a sustainable energy future, short and long-term prospects. Methods to predict the potential and annual energy yield. Wind potential, wind turbines and performance. Solar geometry and solar potential. Solar-thermal and photovoltaic systems. Passive and active solar-thermal systems. Bio-climatic architecture. Hydroelectric power. Biomass systems. Geothermal potential and technologies. "Blue" energy systems: potential estimation, energy from tides, waves and currents. Hydrogen and fuel cells.

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**MME 517 Solar Energy Systems (8 ECTS)**

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The course focuses in characteristics of solar systems and the potential for exploitation of solar radiation for passive and thermal production. Introduction to passive and active solar systems. Analysis of solar collectors and systems for hot water, space heating, heating of swimming pools and industrial facilities. Converting thermal energy into cooling for solar air-conditioning of buildings and basic principles of thermal power stations.

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**MME 518 Theory and Applications of Incompressible Newtonian and Non-Newtonian Fluids (8 ECTS)**

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The course covers the basic principles of flow for Newtonian and non-Newtonian fluids as well as methods for solution of standard flow problems. The objective of the course is to cover in depth both the theory of incompressible fluids and the applications in several aspects of the human activity and technology including biological flows (blood), industrial processes (plastic and food technology), flows involved in hydrocarbons mining (with the use of fluids with special properties).

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**MME 523 Signal Processing (8 ECTS)**

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The aim of this course is to introduce students to modern signal processing techniques currently used to (a) decipher complicated processes in engineering and biological systems; (b) detect damage and monitor the health of engineering components and bio-engineering systems and; (c) characterise the intricacies of time-varying and non-linear systems. Techniques of signal analysis and synthesis based on Fourier transform, Hilbert transform, time – frequency distributions, wavelet transform, and multi-resolution analysis are introduced through examples taken from the disciplines mentioned above.

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**MME 524 Modelling and Analysis of Dynamic Systems (8 ECTS)**

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The course is teaching a unified approach for abstracting real mechanical, fluid, and electrical systems into proper models in graphical and state equation form to meet engineering design and control system objectives. The emphasis is not on deriving equations but rather on understanding how the engineering task defines the modelling objectives, which in turn determine the appropriate modelling assumptions. The bond graph language, which is a graphical power topology of dynamic systems, is taught to help students easily develop models of multi-energy domain systems. A project on a topic of the student's research area reinforces the concepts taught in this course

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**MME 525 Analysis and Control of Robotic and Autonomous Systems (8 ECTS)**

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The course introduces the students to advanced topics in robotic and autonomous systems: (a) Medical robotic systems, (b) Robotics and assistive technologies for independent living, (c) Multi-body kinematics and dynamics formulation, (d) Mobile/autonomous robotic systems analysis, (e) Stability and the method of Lyapunov, (f) Feedback control for manipulators, (g) Nonlinear model-based control, (h) Force control for robotic manipulators, (i) Passivity-based control, (j) Adaptive control and its application to robotic manipulation, (k) Control of mobile robotic systems, (l) Dynamic simulation of robotic and autonomous systems, (m) Robot and autonomous systems design.

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**MME 531 Continuum Mechanics (8 ECTS)**

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The course includes a brief review of the symbols and calculations among tensors and vectors and focuses on the study of 1) the kinematics of a continuum, and specifically the calculation of stress and strain tensors and rates of deformation tensors, 2) the balance laws: Conservation of mass, momentum and energy, 3) the constitutive equations for the mechanical behavior of solids, fluids and viscoelastic materials, and 4) constitutive theories and problems for ideal fluids, Newtonian fluids and linear elastic solids.

### **MME532 Biomaterials in Tissue Engineering and Regenerative Medicine (8 ECTS)**

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Cell biology: Gene expression regulation, receptors, signal transduction, cell-cell interactions, extracellular matrix, cell-matrix interactions, diffusible molecules (cytokines, growth factors, hormones). Cell culture: Isolation, growth and quantification. Stem cells: kinds, differentiation, induced stem cells. Biomaterials: Types, fabrication, characterization. Instrumentation and experimentation: Fluorescence microscopy, fluorescence proteins. Tissue constructs: bioreactors, microfluidic devices, 3D cell culture, organoids, tissue-on-a-chip systems. In vitro applications of tissue constructs: Biological research, systems biology, drug discovery. Wound healing: Injury irreversibility, inflammation, foreign body response, wound contraction, induced regeneration. Tissue constructs in regenerative medicine: Animal models, grafts, case studies (skin, nervous system, cartilage). Clinical translation.

### **MME 533 Biomedical and Industrial Applications of Engineering Acoustics (8 ECTS)**

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This course is an introduction to physical acoustics for engineering and science majors. It gives the physical basis for problems found in many engineering applications including biomedical ultrasound, room acoustics, noise control, and sonar. This course covers: plane waves in fluids, transient and steady-state reflection and transmission, refraction, strings and membranes, rooms, absorption and dispersion, spherical and cylindrical waves, radiation from baffled piston, and medical ultrasound arrays. The course includes laboratory sessions on ultrasound beams with usage of related equipment such as function generator, digital oscilloscope, power amplifier, and micropositioners. Sound pressure level measurements for noise control are also taken with an SPL meter.

### **MME 535 Medical Imaging - Diagnostic Ultrasound (8 ECTS)**

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This course covers the basic science and physics of diagnostic ultrasound. A short introduction to the relevant acoustics needed for ultrasound imaging is given first. It includes reflection and transmission, refraction, acoustic impedance, sound beams, arrays, beamforming, ultrasound propagation through tissue and blood, attenuation, scattering, and nonlinear properties of tissues. The current equipment technology is presented and explained. The following modes of imaging are covered: M-mode, B-mode, Doppler, Harmonic imaging, and 3D imaging. Emphasis is also placed on ultrasound contrast agents and specifically imaging and quantification of tumor angiogenesis. The course includes a laboratory component that covers some of the topics above. In laboratory exercises, students use a modern diagnostic ultrasound scanner and also observe clinical examinations.

### **MME 541 Manufacturing Process Automation (8 ECTS)**

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In-depth study of the physical dynamics in the wider spectrum of manufacturing processes, assessing their potential for automation. Emphasis on new technologies such as rapid prototyping, microelectronics fabrication and nanomanufacturing, as well as on advanced, nonlinear, adaptive and multivariable control algorithms. Use of simulation to assess and optimize the performance of processing systems. Research directions are explored through taxonomy of manufacturing processes, suggesting redesign for automation. Students integrate and demonstrate control of a process experiment in the laboratory, such as automated bottle labelling robotic cell, thermal control of welding with infrared feedback or automated assembly with machine vision

### **MME 551 Nonlinear Mechanics of Solids and Structures (8 ECTS)**

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This course aims to cover a particular area in applied mechanics and biomechanics: Nonlinear mechanics of solid matter using a continuum-based approach. The course opens with a brief introduction to the fundamentals in solid mechanics, equations of motion and equilibrium, and variational principles for deformable solids. The main emphasis of the course covers, however, the theoretical basis of nonlinear elastic solids – spanning from linear elastic (including isotropic and anisotropic) materials to hypo- and hyperelastic, viscoelastic, elastoplastic and viscoelastoplastic materials. In summary, this course covers essential material in advanced solid mechanics for final year undergraduates and postgraduates in mechanical engineering, bioengineering and civil engineering.

### **MME 507 Technical Writing and Speaking (4 ECTS)**

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This course covers the principles and processes of speaking and writing effectively and targeting specific audiences through intense instructions in oral and written communication. In the first part of the course, the language and skills needed for effective and clear communication will be developed and instructions in the design and preparation of scientific talks and posters will be given. The second part focuses on the preparation of scientific publications, including the structure and elements of publications, the art of scientific writing, the preparation of figures and tables, correct citations, the selection of suitable journals, the submission of manuscripts and the reviewing and publication process.

### **MME 539 Nonlinear Mechanics & Modelling of Solids (8 ECTS)**

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The course opens in the first part presenting the fundamental theory in continuum solid mechanics – applicable to nonlinear solids – that spans from the various stress and strain measures to a short outline of constitutive laws of solid materials. In the second part of the course, derivation of equilibrium and equations of motion for deformable solids is presented. In the third and major part of the course, the constitutive equations that describe elastic solids mechanical behaviour (from macro to micro) is presented; the course material will span from linear elastic (isotropic and anisotropic) solids, hyperelastic, viscoelastic, poroelastic and elastoplastic solids.

### **MME 553 Surface Engineering (8 ECTS)**

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This course covers surface treatments and deposition of thin films and functional coatings for multiple applications such as mechanical, biomedical, catalytic, etc. using a large variety of methods. The choice of a surface material with the appropriate properties and sufficient resistance to wear, corrosion and degradation is crucial to its functionality. Processes involved range from traditional well established techniques (e.g. painting) to more technologically demanding coating technologies and surface treatments (e.g. vapour deposition) which have benefited from recent innovations. Integrating both theory with lab practice in this course ensures a greater understanding and appreciation of the concepts for application.

### **MME 554 Characterization Techniques of Bulk and Nano-Materials (8 ECTS)**

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The course is designed to develop an understanding of materials characterization techniques used in materials science and engineering. Diffraction techniques: X-ray, electron and neutron diffraction. Microscopic techniques: Optical, Electron, Atomic Force Microscopy. Spectroscopic techniques: Vibrational, Visible and Ultraviolet, Nuclear Magnetic Resonance, Electron Spin Resonance, X-ray, Electron spectroscopies. Other techniques:



thermal, electrical, mechanical, magnetic characterization. The course includes demonstrations and/or lab experiments.

#### **MME 555 Polymers in Medical Applications (8 ECTS)**

Polymers – introduction. Polysiloxanes in biomedical applications. Biodegradable polymers. Polymers in dental and maxillofacial applications. Medical applications of hydrogels. Polymers in therapeutic applications. Polymeric nanofibers in biomedical and biotechnological applications. Polymer-stabilized superparamagnetic iron oxide nanoparticles. Polymers in artificial joints. Blood contacting polymers. Polymer-carbon nanotube composites in medical applications.

#### **MME 557 Polymer Nanocomposites (8 ECTS)**

Introduction in polymer nanostructured materials. Overview of different types of nanoparticles introduced within polymer matrices. Selecting the proper polymer-nanoparticle system for specific applications. Synthetic methods towards the fabrication of polymer-based nanocomposites. Characterization of polymer nanomaterials. Properties of polymer nanocomposites/polymer nanostructured materials. Current nanotechnology commercial applications and future directions

#### **MME 558 Fundamentals of Ceramics I (8 ECTS)**

This course deals with bonding, structure, and the physical and chemical properties that are influenced mostly by the type of bonding rather than the microstructure, such as defect structure and the atomic and electronic transport in ceramics. Bonding in ceramics – Structure of ceramics – Effect of chemical forces and structure on physical properties – Thermodynamics and kinetics – Defects in ceramics – Diffusion and electrical conductivity – Phase equilibria – Formation, Structure, and Properties of Glasses

#### **MME 559 Fundamentals of Ceramics II (8 ECTS)**

This course deals with the science of sintering and microstructural development and with properties that are more microstructure dependent, such as fracture toughness, optical, magnetic, and dielectric properties. Sintering and grain growth – Mechanical Properties: Fast Fracture – Creep, Subcritical Crack Growth, and Fatigue – Thermal Properties – Dielectric Properties – Magnetic and Nonlinear Dielectric Properties – Optical Properties

#### **MMK 562 Semiconductor Processing Technology (8 ECTS)**

Semiconducting crystals, crystals and crystallographic planes, crystal of silicon, wafer preparation, compound semiconductors, thermal oxidation and nitridation, silicon dioxide and interface SiO<sub>2</sub>-Si, growth of thin films, chemical vapor deposition, physicochemical processes of growth, physical vapor deposition, lithography, optical lithography, techniques for improving resolution, electron beam lithography, X-ray lithography, ion beam lithography, control of purity and etching, purity processes, etching, ion implantation, fundamentals, energy losses, destruction of crystal and activity of dopants, diffusion, point defects, Fick's laws, non constant diffusion coefficient, diffusion in polycrystalline Si, diffusion in insulators, diffusion sources, gettering in Si, contact and interconnect technology, contact metallization, multilayer dielectrics, metallic interconnects, interlevel dielectrics, multilevel metals, reliability.

#### **MME 563 Materials Physics (8 ECTS)**

This course deals with the following topics: Introduction to materials physics, symmetry, crystal structure (metals and ceramics) chemical bonds, reciprocal lattice–X-ray diffraction, lattice vibrations - phonons - thermal properties (heat capacity, thermal expansion, phonon thermal conductivity); free electron

Gas–Metals (Jellium model, nearly free electron approximation, Fermi statistics, electronic band structure, density of states, specific heat, thermal conductivity, electrical conductivity, Wiedemann-Franz law); electrical properties (metals, semiconductors, dielectrics, superconductors); magnetic properties (paramagnetism, diamagnetism, ferromagnetism, Antiferromagnetism), other topics.

#### **MME 564 Nanomechanics (8 ECTS)**

The operating environment of nanostructures is completely different of that of their macroscale counterparts. For example, responses to thermal fluctuations, and for certain scales to quantum potentials, contribute to their positional uncertainty. The basic classical, statistical and quantum mechanics and thermodynamics required to characterize nano-mechanical devices will be introduced. In addition, the principle of operation of various devices used to probe the properties of a nanosystem will be explained. An overview of continuum mechanics notions such as stress and strains, elastic contacts and waves in solids will be given.

#### **MME 565 Physical Principles, Design and Fabrication of MEMS (8 ECTS)**

A historical overview; relevant length scales, market analysis and motivation; simple MEMS e.g. cantilever, switches, comb drives, pressure sensors, transduction principles i.e., mechanical, electrostatic, thermal, piezoelectric. Fabrication of MEMS using standard integrated circuit processing technology, types of lithography, i.e. photolithography, electron beam lithography, soft lithography, thin film deposition, wet and dry etching methods. Surface and bulk micromachining, hot embossing, micro-molding. Assembly, packaging and reliability. Advanced radio frequency MEMS, Piezo MEMS, Magnetic MEMS, Biological MEMS.

#### **MME 566 Advanced Semiconductor Materials and Nanodevices (8 ECTS)**

Introduction to semiconductors, intrinsic, n-type and p-type; carrier transport, Hall effect, resistivity, photoconductivity, The infinite quantum well, 3D DOS, Fermi Dirac Statistics, carrier concentration, law of mass action. Temperature dependence of carrier density, mobility, scattering mechanisms. Energy band diagrams, Fermi level and temperature dependence. The p-n junction in equilibrium, forward and reverse bias in the dark and light, the p-n junction photovoltaic device, open circuit voltage, short circuit current, efficiency, fill factor, I- V characteristic, fabrication of p-n junctions. Derivation of 2D and 1D DOS, quantum wells, wires and dots. Nanowires, VLS growth, axial and core-shell, nanowire device fabrication, nanowire solar cells.

#### **MME 567 Materials for Energy Production, Storage and Conversion (8 ECTS)**

This course deals with materials and technologies for energy production, storage and conversion, as well as for sensors used for monitoring of pollutant emissions. Devices that will be considered include solar cells, fuel cells, batteries and electromechanical sensors. The main part of the course refers to thermodynamic, kinetic and electrochemical concepts, as well as material properties critical for designing such devices.

## Research Interests of the Academic Staff

### • Eftychios Christoforou - Assistant Professor

Robotics and autonomous systems, Robot dynamics and control, Reconfigurable/adaptive structures, Medical robotics, telerobotics and telemedicine.

### • Ioannis Giapintzakis, Professor

Thin-film solar cells based on chalcopyrites for applications in photovoltaics, Resistive switching phenomena in thin films of lithiated transition metal oxides for applications in non-volatile memories and neuromorphic systems, Thermoelectricity in complex transition metal oxides, chalcogenides and (nano)composites for applications in solid-state cooling and power generation devices, Thermal transport in epitaxial thin films of quasi-1D quantum magnets for applications in thermal management, Growth of epitaxial thin films and nanostructures using ns- and ps-pulsed lasers.

### • Dimokratis Grigoriadis, Associate Professor

Heat & mass transfer, Renewable energy sources, Computational Fluid dynamics (CFD), Direct and large Eddy simulations of Turbulent flows (DNS/LES), High performance & GPU computing, Algorithmic acceleration of scientific computations.

### • Stavros Kassinos, Professor

Modelling and simulation of turbulent flows, Modelling and simulation of magnetohydrodynamic flows, Biological and biomedical flows, Simulation of multiscale phenomena, Thermodynamics and renewable energy sources, Drug delivery to the lungs.

### • Theodora Krasia-Christoforou, Associate Professor

Synthesis, characterization and applications of polymers, Organic-inorganic polymer-based nanocomposites, Electro-spinning.

### • Andreas Kyprianou, Associate Professor

Non-linear systems, Dynamic modifications and robustness, Modern signal processing techniques applied to vibrating systems, Solar cells, Urban characterization.

### • Theodora Kyratsi, Professor

Materials synthesis and processing based on powder technology techniques – ball milling and consolidation techniques, Nanomaterials and nanocomposites, Energy- and environment-related materials, Thermoelectric materials for cooling applications and power generation, Materials for CO<sub>2</sub> storage.

### • Loucas S. Louca, Associate Professor

Physical system modelling and model reduction of large-scale systems, Bond graph theory, Modelling of automotive systems, Computer aided modelling and simulation, Haptic interfaces, Robotic rehabilitation.

### • Denis Politis, Lecturer

Development and optimisation of manufacturing processes: Forging & sheet metal forming, Computer Aided Design (CAD), finite Element Simulation (FEA), Materials modelling and prototype testing.

### • Claus G. Rebholz, Associate Professor

Thin films and coatings, Surface engineering technologies, Nanostructured materials, Nanoscale manufacturing technologies, Carbon materials and energy, Engineering design.

### • Triantafyllos Stylianopoulos, Associate Professor

Biomechanics, Biotransport, Bioengineering, Tumor micro-environment, Cancer research.

### • Alexandros Syrakos, Lecturer

Non-Newtonian fluid mechanics and rheology, Constitutive modelling of complex fluids, Computational Fluid Dynamics (CFD) with finite volume and finite element methods.

### • Dimitrios Tzeranis, Lecturer

Design and development of biomedical devices and systems, Biomaterials, stem cells & grafts for regenerative medicine, 3D tissue models and their application in pre-clinical drug discovery, Fluorescence imaging, microscopy & spectroscopy.

### • Vasileios Vavourakis, Assistant Professor

Linear and non-linear mechanics of solids and structures, Numerical methods in applied mechanics and biomechanics, In-silico modelling in multiphysics and multiscale problems, Mathematical biology and mathematical modelling, High-performance computing.

### • Matthew Zervos, Associate Professor

Synthesis, structural, optical, electrical characterization of semiconductor nanowires and device fabrication for energy related applications.

## Contact Details

### GRADUATE PROGRAMME COORDINATOR

#### Matthew Zervos, Associate Professor

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### GRADUATE PROGRAMME COMMITTEE

#### Matthew Zervos, Associate Professor

#### Dimokratis Grigoriadis, Associate Professor

#### Claus Rebholz, Associate Professor

#### Vasileios Vavourakis, Assistant Professor

### DEPARTMENT SECRETARIAT

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# INTERDEPARTMENTAL POSTGRADUATE PROGRAMMES

## Energy Technologies and Sustainable Design (IPP-ETSD)

The IPP-ETSD is offered by the Faculty of Engineering of the University of Cyprus since September 2010. In this postgraduate programme, all the Departments of the Faculty of Engineering of the University of Cyprus are involved (in alphabetical order):

- Department of Architecture (ARH)
- Department of Civil and Environmental Engineering (CEE)
- Department of Electrical and Computer Engineering (ECE)
- Department of Mechanical and Manufacturing Engineering (MEE)

The Interdepartmental Postgraduate Programme in Energy Technologies and Sustainable Design of the Faculty of Engineering at the University of Cyprus offers the possibility to students to join one of the following Master programmes of studies:

- Master of Engineering (M.Eng.), a Master of professional type, where emphasis is given to courses, seminars and a project targeted mostly on practical applications.
- Master of Science (M.Sc.), with emphasis in courses, seminars and projects that mainly aim in research directions and innovative design.

### Introduction

The Interdepartmental Postgraduate Programme Energy Technologies and Sustainable Design (IPP-ETSD) offers specialization in the discipline of Energy Technologies within the frame of Sustainable Design. The interdisciplinary nature of the Master's programme gives the opportunity to students to come into contact with subjects from a wide range of scientific backgrounds and work with fellow students of different disciplines to develop synergies and complementarities for achieving common objectives. Graduates of the programme can thus gain a more comprehensive and multidisciplinary training in such a diverse subject area such as Energy.

### Feasibility and Goals

The key objectives of the IPP-ETSD programme of the Faculty of Engineering are:

- The proper preparation of the engineering-scientists graduates so that they can successfully address current energy challenges and demands, both nationally and internationally.
- The acquisition of a unified interdisciplinary scientific training and understanding in a wide range of energy topics, through the framework of sustainable design.

Through the versatile education offered to students, the concept of Energy itself as well as its storage, distribution and utilization is studied in a way that is consistent with modern concepts of sustainability and energy saving.

Moreover, students have the opportunity to work as members of a multidisciplinary team for the development of a complex large-scale project that requires multi-

disciplinary collaboration, reflecting the background of the four participating Departments of the Faculty of Engineering. This activity will help students to obtain a common background necessary for the implementation of the projects in real conditions, in which, knowledge of basic principles relating to all disciplines is necessary. Furthermore, the perception of teamwork and holistic view of a project is cultivated, in order to achieve the greatest possible synergies in sustainable design and energy efficiency.

### Procedure and Criteria of Admission

The candidates for admission to the programme (M.Sc. & M.Eng.) must hold at least a recognized equivalent university degree (B.Sc.) in a relevant field of science or engineering. The candidates can submit a formal request to one or more Departments, through the Graduate School and within specified deadlines (twice a year). The applications are evaluated and approved by the Board of the Department to which the application was submitted. The selection of students is based on the following criteria:

- Quality of the candidate's academic career, both in depth and in breadth, and past achievements in his undergraduate or graduate studies.
- Indications of capability in implementing existing technologies, as well as developing innovative technologies in the proposed area of study.

Moreover, for the admission to the Master of Science Programme M.Sc., the candidate students must provide indications of their ability for original and innovative research in the proposed field of study.

## Academic and Research Supervisors

The main objective of the Programme is to ensure that all the students will receive adequate and appropriate advising support throughout their studies. The Advisory Programme is fulfilled by:

- **Academic Supervisor:** Upon admission to the Programme and before the first day of registration, every student is assigned an Academic Supervisor, the representative of his/her Department in the Interdepartmental Committee of the Programme. The student can find the relevant information after the registration to the Banner System. The Academic Supervisor meets with the student before the first registration, to plan the first semester of studies, helps the student to appropriately select courses and oversees his/her academic progress with regular meetings, beginning, end and/or during the semester. The first meeting takes place at the "New Student Introductory Day", which takes place the week of registration. At the meeting, all Students Academic Advisors are present.
- **Research Advisor:** (this concerns only students who are admitted to the programme Master of Science M.Sc.). In order to carry out his/her thesis research, the student must determine a Research Advisor. The Research Advisor may be a person other than his / her Academic Advisor. The selection of a Research Advisor is recommended to be a product of consultation between students and a faculty member, that his/her research interests focus on energy. The Research Advisor may come from any of the School Departments, regardless of the Department of enrolment of the student. In collaboration with the Research Advisor, a suitable and specific thesis topic will be agreed. After submission and approval of the thesis proposal, the student, in collaboration with the Research Advisor, must form the Thesis Committee.

## MASTER OF ENGINEERING PROGRAMME (M.Eng.)

For the award of the Master's Degree M.Eng., students are required to successfully complete the Programme of studies, as described in detail below. The minimum duration of the Master of Engineering Programme for full-time students is three academic semesters. The maximum duration allowed for completion of the Master's degree is four years, as determined by the University Regulations. It is clarified that the Advanced Project «Capstone Design & Research Project» starts only every September and ends in July.

## Programme of Studies

The workload leading to the Master's degree M.Eng. requires the completion of at least 91 ECTS units from a combination of graduate courses, seminars and labs as follows:

	ECTS
<b>5 Specialization Courses</b>	<b>33</b>
POL 500 Basic Principles of Interdisciplinary Engineering	1
<b>Prerequisite</b>	
ARH 538 Environmental Building Design	8
ECE 687 Building Integration of Photovoltaic (PV): Towards nearly zero energy buildings (NZEB)	8
MME 516 Renewable Energy Sources Technology	8
CEE 536 Energy Efficiency of Buildings	8
<b>General Elective Courses</b>	<b>32</b>
4 Elective Courses	
<b>Advanced Project: Capstone Design &amp; Research Project</b>	<b>24</b>
<b>Graduate Seminar</b>	<b>1</b>
<b>Engagement with Practice and Industry</b>	<b>1</b>
<b>TOTAL</b>	<b>91</b>

## Indicative Programme of Studies for Master Degree M.Eng.

The determination of the appropriate combination of courses, research and seminars for each semester will be performed by the students, in coordination with their Academic Advisor. The following table shows an indicative example of a M.Eng. degree program.

### Example A: Admission in September

	ECTS
<b>First Semester (Fall)</b>	
Prerequisite	1
2 Courses	2 X 8 = 16
Graduate Seminar	1
Advanced Project I	8
<b>Total</b>	<b>26</b>
<b>Second Semester (Spring)</b>	
3 courses	3 X 8 = 24
Engagement with Practice and Industry	1
Advanced Project II	8
<b>Total</b>	<b>33</b>
<b>Summer</b>	
Advanced Project III	8
<b>Total</b>	<b>8</b>
<b>Third Semester (Fall)</b>	
3 courses	3 X 8 = 24
<b>Total</b>	<b>24</b>



### Example B: Admission in January

	ECTS
<b>First Semester (Spring)</b>	
3 Courses	3 X 8 = 24
Engagement with Practice and Industry	1
Graduate seminar	1
<b>Σύνολο</b>	<b>26 ECTS</b>
<b>Summer</b>	
Advanced Project III	8
<b>Total</b>	<b>8</b>
<b>Second Semester (Fall)</b>	
Prerequisite	1
3 Courses	3 X 8 = 24
Advanced Project I	8
<b>Total</b>	<b>33</b>
<b>Third Semester (Spring)</b>	
2 Courses	2 X 8 = 16
Advanced Project II	8
<b>Total</b>	<b>24</b>

### MASTER OF SCIENCE PROGRAMME (M.Sc.)

For the award of the Master M.Sc. degree, it is required to successfully complete the programme of studies that also includes the Thesis Research and the Advanced Project, as described in detail below. The minimum duration of the Master M.Sc. programme for full-time students is three academic semesters. The maximum duration allowed for completion of the Master M.Sc. degree is four years, as determined by the University Regulations. It is clarified that the Advanced Project «Capstone Design & Research Project» starts **only every September** and ends in July.

### Programme of Studies

The workload leading to the Master M.Sc. degree requires the completion of at least **115 ECTS** credits from a combination of graduate courses, seminars, advanced project and thesis research as follows:

	ECTS
<b>6 Specialization Courses</b>	<b>41</b>
POL 500 Basic Principles of Interdisciplinary Engineering Prerequisite	1
POL 800 Research Methodology	8
ARH 538 Environmental Building Design	8
ECE 687 Building Integration of Photovoltaic (PV); Towards nearly zero energy buildings (NZEB)	8
MME 516 Renewable Energy Sources Technology	8
CEE 536 Energy Efficiency of Buildings	8
<b>General Elective Courses</b>	<b>8</b>
1 Elective Course	
<b>Advanced Project: Gapstone Design and Research Project</b>	<b>24</b>
<b>Graduate Seminar</b>	<b>1</b>
<b>Engagement with Practice and Industry</b>	<b>1</b>
<b>Master Thesis Research</b>	<b>40</b>
<b>TOTAL</b>	<b>115</b>

### Thesis of Master Degree M.Sc.

For the Master degree M.Sc., it is additionally required to carry out an individual research thesis. The topic of the student's research is chosen in coordination with his/her Research Supervisor, preferably before the end of the first semester. The students must submit in writing to the Interdepartmental Committee, a one-page summary of the thesis, explaining the relevance to the discipline of the programme, not later than six months prior to its defence. When the thesis is completed, the student must present it to an open audience, before the Examination Committee. The Examination Committee is composed of three members. If the defence of the research is satisfactory, the Examination Committee approves its successful completion. The thesis is accredited as Excellent, Very Well, Well. Students, who complete a dissertation, will have to submit the following to the central Secretariat of the thesis (ETAS): 1) One printed copy of their dissertation and 2) a CD containing their dissertation in PDF format and their graphic abstract.

### Indicative M.Sc. Master Degree Programme

The appropriate combination of courses, research and seminars attendance for each semester will be determined by the student in coordination with his/her Academic Advisor. Indicative examples of a Master of Science programme of studies, which can be completed in three academic semesters, are presented below, one with admission in September and one with admission in January, provided that a student is a full-time student.

### Example A: Admission in September

	ECTS
<b>First Semester (Fall)</b>	
Prerequisite	1
3 courses =	3 X 8 = 24
Graduate Seminar	1
Advanced Project I	8
<b>Total</b>	<b>34</b>
<b>Second Semester (Spring)</b>	
3 courses	3 X 8 = 24
Engagement with Practice and Industry	1
Advanced Project II	8
Master Thesis Research I	8
<b>Total</b>	<b>41</b>
<b>Summer</b>	
Advanced Project III	8
<b>Total</b>	<b>8</b>
<b>Third Semester (Fall)</b>	
Master Thesis Research II	8
Master Thesis Research III	8
Master Thesis Research IV	8
Master Thesis Research V	8
<b>Total</b>	<b>32</b>

## Example B: Admission in January

	ECTS
<b>First Semester (Spring)</b>	
3 Courses	3 X 8 = 24
Engagement with Practice and Industry	1
Master Thesis Research I	8
<b>Total</b>	<b>33</b>
<b>Summer</b>	
Advanced Project III	8
<b>Total</b>	<b>8</b>
<b>Second Semester (Fall)</b>	
Prerequisite	1
3 Courses	3 X 8 = 24
Graduate Seminar	1
Advanced Project I	8
<b>Total</b>	<b>34</b>
<b>Third Semester (Spring)</b>	
Advanced Project II	8
Master Thesis Research II	8
Master Thesis Research III	8
Master Thesis Research IV	8
Master Thesis Research V	8
<b>Total</b>	<b>40</b>

## SPECIALIZATION COURSES

A student must successfully attend a number of postgraduate specialization courses selected from the postgraduate programme of studies of the Interdepartmental Programme, that will ensure the minimum number of ECTS credits according to the requirements of each programme. Cited below, there is a list of specialization courses that is typically offered over time (not all courses are available in the same semester or in the same year). An indicative timetable of the present semester is posted on the ETSD Programme web site. Note that because of the wide and varied offering of courses within the interdepartmental programme, part-time students should have in mind that a limited number of courses are offered during the morning and midday hours.

### List of Specialization Courses (Mandatory)

DEPARTMENT	ECTS
<b>Architecture</b>	
ARH 538 Environmental Building Design	8
<b>Electrical and Computer Engineering</b>	
ECE 687 Building Integration of Photovoltaic (PV): Towards nearly zero energy buildings (NZEB)	8
<b>Mechanical and Manufacturing Engineering</b>	
MME 516 Renewable Energy Sources Technology	8
<b>Civil and Environmental Engineering</b>	
CEE 536 Energy Efficiency of Buildings	8

<b>Interdepartmental Postgraduate Programme (ETSD)</b>		
POL 500	Basic Principles of Interdisciplinary Engineering - Prerequisite	1
POL 601	Graduate Seminar	1
POL 604	Advanced Project: Capstone Design & Research Project I	8
POL 700	Engagement with Practice and Industry	1
POL 704	Advanced Project: Capstone Design & Research Project I II	8
POL 800	Research Methodology - Only for M.Sc. Students	8
POL 804	Advanced Project: Capstone Design & Research Project I III	8

### List of Elective Courses

DEPARTMENT	ECTS	
<b>Architecture</b>		
ARH 539	Advanced Topics in Architectural Technology	8
ARH 549	Advanced Topics in Urban Planning	8
<b>Electrical and Computer Engineering</b>		
ECE 680	Power System Analysis	8
ECE 681	Power System Operation and Control	8
ECE 685	Power System Plant and Operation	8
ECE 686	Power System Modeling	8
<b>Mechanical and Manufacturing Engineering</b>		
MME 512	Advanced Engineering Thermodynamics	8
MME 566	Advanced Semiconductor Materials and Nanodevices	8
<b>Civil and Environmental Engineering</b>		
CEE 580	Dynamics of Atmosphere and Air Pollution Dispersion	8
CEE 586	Sustainable Built Environment	8
CEE 598	Biotechnological production of biofuels and bioenergy	8
<b>Interdepartmental Postgraduate Programme (ETSD)</b>		
POL 800	Research Methodology - Only for M. Eng. Students	8

### Courses Description

This section includes detailed descriptions of specialization courses. It is clarified that for some courses, it is expected in the future to make some changes in the programme and in the description of the courses, in order to further improve them. Some other courses may have prerequisites, that students will have to successfully attend prior to registration to a postgraduate course. It is the students' responsibility to ensure that they meet the prerequisites.

#### ARH 538 Environmental Building Design (8 ECTS)

This course aims to deepen the theoretical and applied knowledge of students on the Environmental Design of Buildings and to highlight the role of the architectural design, construction and appropriate technical support in order to ensure proper living conditions for the users of a building; minimizing energy

consumption and reducing adverse environmental impacts. The course covers issues concerning the bioclimatic architecture, which aims to improve the comfort conditions of users – thermal, visual, acoustic comfort, air quality – in the indoor built environment; issues that have to do with energy design aiming to the minimization of energy consumption of the building envelope as well as issues of ecological construction regarding the minimization of the ecological footprint.

#### **ARH 539 Advanced Topics in Architectural Technology (8 ECTS)**

Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

#### **ARH 549 Advanced Topics in Urban Planning (8 ECTS)**

Subjects in this course will vary according to emerging students' needs or requests and the faculty's educational and research interests. The coursework consists of a workshop and a survey course based on best practices in sustainable urban design and development, with a particular focus on the challenges facing the Eastern Mediterranean region. The coursework is organized in the form of a workshop and includes thematic presentations, the analysis of cases studies, role playing and visioning exercises and a final master-planning exercise in a location to be specified by the instructor.

#### **ECE 680 Power System Analysis (8 ECTS)**

The course provides basic and advanced concepts of power system analysis. Development of analytical skills to perform analysis of power systems. Analyze balanced and unbalanced systems using symmetrical components. Study transformers and per unit sequence models, transmission line modeling, power flow solution techniques, bus impedance and admittance matrices, power system stability. Projects and term papers to develop a deep understanding of the operation of power systems so that the students are well prepared to enter the workforce as network engineers or to perform research in this area.

#### **ECE 681 Power System Operation and Control (8 ECTS)**

Basic principles of generation and control in power systems. Economic dispatch, unit commitment, automatic generation control. Linear and dynamic programming and solution of problems. Steam and hydro units, fuel scheduling, production costing, observability, state estimation, power flow, deregulation ECE 685 – Power System Plant and Operation (8 ECTS).

#### **ECE 685 Power System Plant and Operation (8 ECTS)**

*Prerequisite ECE 680*

Introduction to the overall design of power plant systems, focusing both on the system and on the component design. Overview of the manufacturing, operation, and thermal aspects of systems and the decisions necessary to deduce an optimal power plant design. Specific concepts: Overhead Transmission Lines: Design and Operation, Underground Power Cables: Design and Operation, Power Transformers: Design and Operation, Technical and Economical Assessments of Power Systems, Earthing and Bonding.

#### **ECE 686 Power System Modeling (8 ECTS)**

*Prerequisite ECE 685*

A number of events and challenges exacerbated at the onset of the 21st century, as well as future challenges require thorough understanding of the operating principles and main features of a Power System Plant, which is fundamentally important to power

engineers. The module embraces the following simulation-based exercises: Overhead line design and parameter evaluation; thermal rating of HV underground power cables; electric field stress on the Insulation Material on power cables through Finite element modelling; modelling of non-linear properties of transformers' core characteristics and design; losses evaluation on transformer structural components under saturation conditions. Final comprehensive exercise (real case scenario).

#### **ECE 687 Building Integration of Photovoltaic (PV): Towards Nearly Zero Energy Buildings (NZEB) (8 ECTS)**

Introductory graduate-level course on building integration of photovoltaics (BIPV) in a Nearly Zero Energy Building (NZEB) context. Review of current policy, directives, regulation, and goals on building energy efficiency and NZEBs. Available advanced components, technologies, tools, systems, techniques, and theories in modeling a building for achieving NZEB design and incorporating BIPV. Calculation of the size and cost of a system to offset building energy use. Study of smart systems for energy management and grid integration: monitoring consumption, RES generation, and environmental conditions are included, as well as case studies of smart meter projects.

#### **MME 512 Advanced Engineering Thermodynamics (8 ECTS)**

Thermodynamic analysis of engineering systems, emphasizing systematic methodology for application of basic principles. Introduction to availability analysis. Thermodynamics of gas mixtures and air-conditioning applications. Modern computational equations of state. Thermodynamic design software. Thermodynamics of biological systems. Introduction to compressible flow.

#### **MME 516 Renewable Energy Sources Technology (8 ECTS)**

The energy problem: "consumption" and "sources" of energy. Mineral resources and conventional technologies: nuclear, oil, gas and coal combustion. Historical development & current status of energy generation and storage technologies worldwide, in Europe and locally. RES technologies: Towards a sustainable energy future, short and long-term prospects. Methods to predict the potential and annual energy yield. Wind potential, wind turbines and performance. Solar geometry and solar potential. Solar-thermal and photovoltaic systems. Passive and active solar-thermal systems. Bio-climatic architecture. Hydroelectric power. Biomass systems. Geothermal potential and technologies. "Blue" energy systems: potential estimation, energy from tides, waves and currents. Hydrogen and fuel cells.

#### **MME 566 Advanced Semiconductor Photovoltaic Devices (8 ECTS)**

Introduction to semiconductors, Intrinsic, n-type and p-type; Carrier transport, Hall effect, resistivity, photoconductivity, The infinite quantum well, 3D DOS, Fermi Dirac Statistics, carrier concentration, law of mass action. Temperature dependence of carrier density, mobility, scattering mechanisms. Energy band diagrams, Fermi level and temperature dependence. The p-n junction in equilibrium, forward and reverse bias in the dark and light; The p-n junction photovoltaic device, open circuit voltage, short circuit current, efficiency, fill factor, I- V characteristic, fabrication of p-n junctions. Derivation of 2D and 1D DOS, quantum wells, wires and dots. Nanowires, VLS growth, axial and core-shell, nanowire device fabrication, nanowire solar cells.

#### **CEE 536 Energy Efficiency of Buildings (8 ECTS)**

Basic Principles of Energy Efficiency of Buildings, Methodology of Energy Analysis, Steady and Unsteady Heat Transfer in Two- and Three-dimensional Analysis of Structural Materials and

Components with Conduction, Convection and Radiation, Prerequisites of Energy Efficiency, Materials for Thermal Insulation, Simulation Methods for Energy Efficiency, Certification, European and Cypriot Standards and Codes for Energy Efficiency, Assessment of Energy Efficiency, Optimized Technologies for Energy Efficient Design, Passive Cooling and Heating, Case Studies in Buildings(residential, offices, organizations etc.).

#### **CEE 580 Dynamics of the Atmosphere and Air Pollution Dispersion (8 ECTS)**

Meteorology and Structure of the Atmosphere. Meteorological Events as Events of Atmospheric Dynamics: Weather-climate, climate change, wind, tornadoes and hurricanes, dust storms, El Nino phenomenon, rain, storms. Atmospheric Pollution Dispersion: Sources and Transport Mechanisms. Turbulent Atmospheric Flows. Jets and Plumes in the Atmosphere. Atmospheric Chemistry. Research and Operational Air Pollution Dispersion Models.

#### **CEE 586 Sustainable Built Environment (8 ECTS)**

Holistic approach and lateral integration of fundamental aspects and current challenges in the sustainable design of the built environment. Includes: Climate Change, Urban Physics, Environmental Pollution, Global Energy Demands, Sustainable Building Materials, Rational Water Use, Waste Management, Renewable/Alternative Energy Technologies, Perception of Human Comfort, Ecological Footprint Analysis, Legal Framework, Environmental and Operational Management & Strategies. The course also demonstrates examples of both sustainable and unsustainable aspects of current design practice of the built environment, and how international policy frameworks can act as both drivers and barriers to sustainable solutions.

#### **CEE 598 Biotechnological Production of Biofuels and Bioenergy (8 ECTS)**

Biotechnological production of biofuels and bioenergy focuses on the use of waste for the production of energy and fuels aiming at the reduction of environmental pollution. The course aims at understanding the basic processing of biofuels production (biogas, hydrogen, bioethanol, biodiesel) and the biotechnological processing of waste towards that direction. The students will be trained on analysis, design, control and optimisation of bioprocesses for biofuels and bioenergy production, as well as, (bio) processing of waste.

#### **POL 500 Basic Principles of Interdisciplinary Engineering (1 ECTS)**

Introduction to basic engineering principles and notions in order to create a basic common starting interdisciplinary background in Engineering, so that students from the different Engineering School Departments are able to take/select classes across different Departments and get introduced to the interdisciplinarity of the programme. The course will be offered before the academic year starts. The duration of the course is 12 hours. The dates will be announced 2 weeks before.

#### **POL 800 Research Methodology (8 ECTS)**

The course introduces students to the qualitative and quantitative methodology of research, its simulation of principles and the application of basic methods of data collection, statistical analysis, and organising. Introduction to experimental laboratory and field methodology. Introduction to computational methodology. Basic analysis of error and uncertainty. Acquisition of tools for efficient execution and presentation of completed master thesis, academic journal publication, poster presentation at conference etc.

## GRADUATE SEMINARS

#### **POL 601 Graduate Seminar (1 ECTS)**

Seminar series (comprising at least 6 lectures-seminars) during the 1<sup>st</sup> Semester. The seminars can be either from the student's Department of enrolment or from other departments of the Faculty of Engineering, that are recognized as «relevant to the interdepartmental programme». Students can also attend any seminar within their Department of enrolment to complete the required number of seminars for the semester, in case that the required number of seminars «relevant to the interdepartmental programme» is not adequate.

#### **POL 700 Engagement with Practice and Industry (1 ECTS)**

Educational visits (4) during one academic year, to sites / organizations related to the subject of energy. During the visit thorough information will be provided on current practices, challenges, prospects and also problems in the energy industry (indicative visits include wind & photovoltaic parks, bioclimatic buildings, air quality monitoring stations of the department of labour inspection etc).

## ADVANCED PROJECT: CAPSTONE DESIGN AND RESEARCH PROJECT (24 ECTS)

For the Master's degree, it is required to carry out an Advanced Project, and more specifically a Capstone Design & Research Project, that will be prepared and presented by the student in collaboration with other students of various specialties. The Capstone Design & Research Project includes topics that are related to the interdepartmental character of the Programme, as well as topics concerning the collaboration of students in as much as possible real conditions. Students are divided into groups and undertake the design of a project according to predetermined requirements. The work is shared while the knowledge gained by students through the courses offered throughout the Programme, is implemented in conditions of a project design. In this way, students are better prepared to transfer their knowledge into practical applications and gain experience from participating in a larger group, where everyone is performing part of the work but at the same time, all students work together towards the common objective of the Design & Research Project integration.

#### **POL 604 Capstone Design Project I (8 ECTS)**

The Project in collaboration with students of other disciplines under the supervision of academic staff.

#### **POL 704 Capstone Design Project II (8 ECTS)**

The Project in collaboration with students of other disciplines under the supervision of academic staff.

#### **POL 804 Capstone Design & Research Project III (8 ECTS)**

The Project in collaboration with students of other disciplines under the supervision of academic staff.



## MASTER M.Sc. THESIS RESEARCH (40 ECTS)

### **POL 718 Master Thesis Research I (8 ECTS)**

Postgraduate research leading to the completion and defence of Master M.Sc. thesis (the registration is made at the audience of the dissertation's supervising professor).

### **POL 719 Master Thesis Research II (8 ECTS)**

Postgraduate research leading to the completion and defence of Master M.Sc. thesis (the registration is made at the audience of the dissertation's supervising professor).

### **POL 720 Master Thesis Research III (8 ECTS)**

Postgraduate research leading to the completion and defence of a Master M.Sc. thesis (the registration is made at the audience of the dissertation's supervising professor).

### **POL 721 Master Thesis Research IV (8 ECTS)**

Postgraduate research leading to the completion and defence of a Master M.Sc. thesis (the registration is made at the audience of the dissertation's supervising professor).

### **POL 722 Master Thesis Research V (8 ECTS)**

Postgraduate research leading to the completion and defence of a Master M.Sc. thesis (the registration is made at the audience of the dissertation's supervising professor).

## GENERAL ELECTIVE COURSES

General elective courses are any postgraduate courses that are offered either within the Faculty of Engineering or within the University of Cyprus. It is also noted that according to the Rules of the Graduate School, it is possible for postgraduate students to replace a general elective course (corresponding to 8 ECTS), with up to two advanced undergraduate courses. The list of advanced undergraduate courses, that would be particularly helpful for postgraduate specialization courses for the ETSD Programme is given below. Note that the ECTS credits for each undergraduate course can differ and that graduate students may need additional credits in order to complete the required amount for the completion of the ETSD programme of studies. Also, it is not allowed to credit advanced undergraduate courses to students that hold a degree from the same field of studies and have already attended courses of a relevant subject.

### List of Undergraduate General Elective Courses

DEPARTMENT	ECTS
<b>Architecture</b>	
ARH 412 Architecture and the Critical History of Ecology	5
<b>Electrical and Computer Engineering</b>	
ECE 340 Power Engineering	5
ECE 447 Renewable Energy Sources: Photovoltaics	5
<b>Mechanical and Manufacturing Engineering</b>	
MME 217 Heat Transfer	6
<b>Civil and Environmental Engineering</b>	
CEE 483 Transport Processes in Environmental Engineering	5

## Detailed Description of General Elective Undergraduate Courses

### **ARH 412 Architecture and the Critical History of Ecology (5 ECTS)**

How have concepts of "Nature" and "Environment" influenced architectural thought and practice throughout history? Emphasis on the 20th and 21st century debates on environment and sustainability, and the theoretical dimensions of them.

### **ECE 340 Power Engineering (6 ECTS)**

Power system components. Magnetic circuits, inductors, transformers and their equivalent circuits. Generation, transmission and utilization of electric power. 3-phase AC and Department of Electrical and Computer Engineering 90 DC systems. Fundamentals of electromechanical energy conversion. Power semiconductors: basic devices and circuit applications. DC/DC converters; buck, boost, buck-boost and their derivatives, basic operation and design criteria. AC circuits: SCR phase control, inverters, uninterruptable power supplies (UPS).

### **ECE 447 Renewable Energy: Photovoltaics (6 ECTS)**

Introduction to renewable energy sources with main emphasis on photovoltaic (PV) energy conversion. Current state in Cyprus and potential. Types of photovoltaic systems. History of photovoltaic technology development. Current status: Technology, Policy, Markets. Solar insolation. Short review of semiconductor properties. Generation, recombination and the basic equations of device physics. Efficiency limits, losses, and measurements. Physics of photovoltaic systems, including basic operating principles, design and technology, and performance of individual solar cells and solar cells systems. Current fabrication technologies. Design of cells and modules. Other materials. Applications.

### **MME 217 Heat Transfer (6 ECTS)**

Subject areas in the course include: Linear and volumetric expansion. Mechanisms of Heat Transfer (HT), Fourier, Newton and thermal radiation laws of HT. Conductivity and diffusion coefficients, emissivity. Electrical analog of HT, electrical resistance and equivalent thermal circuits. General differential equation of heat conservation. Steady conduction in one dimension, with or without internal heat sources, analytical solutions of flat walls, cylinders and spheres. Steady conduction in two dimensions, shape factors, numerical solutions. HT from fins and extended surfaces. Transient HT, Heisler charts, semi-infinite solids. Lumped capacitance method, Biot and Fourier numbers. Forced and natural convection, Reynolds, Prandtl, Nusselt, Rayleigh and Grashof dimensionless numbers. Mixed convection, boiling and condensation. Heat exchangers. The course includes laboratory exercises.

### **CEE 483 Transport Processes in Environmental Engineering (5 ECTS)**

Fundamentals of Pollutant Transport Mechanisms (advection, diffusion, dispersion) related to air, water and ground media. Gaussian Plume Dispersion Models, Lagrangian diffusion, Taylor's dispersion. Air/Water Quality assessment; environmental design and Mitigation Strategies. Heat transfer and energy considerations for building design.

## CONTACT US

For more information, regarding the Interdepartmental Postgraduate Programme ETSD, students may contact the Coordinating Secretariat (Tel.: 22895400 & email: [energytech@ucy.ac.cy](mailto:energytech@ucy.ac.cy)).

**Office Hours: Monday – Friday: 14.30- 19.00**

A meeting of new entrant students is organized at the beginning of each semester, in order to provide information, resolve any queries, assist and coordinate the registration. For updated information on the Interdepartmental Postgraduate Programme “Energy Technologies and Sustainable Design” of the Faculty of Engineering and the Postgraduate Prospectus, students may visit the Programme web site: <http://etsd.ucy.ac.cy/>

### Departmental Contact Info

For general information regarding topics such as studies, registration, organization and support, students are encouraged to contact the Secretariat of their department.

**Office Hours:**

**Monday- Friday: 07.30am – 02.30 pm**

**Wednesday: 07.30-14.00 & 14.30-18.00 (September-May)**

**Department of Architecture**

**Email: [arch@ucy.ac.cy](mailto:arch@ucy.ac.cy), Tel.: 22892980**

**Department of Electrical and Computer Engineering**

**Email: [ece@ucy.ac.cy](mailto:ece@ucy.ac.cy), Tel.: 22892271**

**Department of Mechanical and Manufacturing Engineering**

**Email: [mpe@ucy.ac.cy](mailto:mpe@ucy.ac.cy), Tel.: 22892250**

**Department of Civil and Environmental Engineering**

**Email: [cee@ucy.ac.cy](mailto:cee@ucy.ac.cy), Tel.: 22892200**

### Academic Committee IPP-ETSD

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# Interdepartmental & Interdisciplinary Postgraduate Programme Conservation and Restoration of Historic Buildings and Sites

The Postgraduate Programme “Conservation and Restoration of Historic Buildings and Sites” is offered by the University of Cyprus, since September 2017. Three departments from two different faculties of the University of Cyprus are involved in this programme.

Two departments from the Faculty of Engineering (in alphabetic order):

- Department of Architecture
- Department of Civil and Environmental Engineering

One department from the Faculty of Letters

- Department of History and Archaeology

This Interdepartmental & Interdisciplinary Postgraduate Programme on the Conservation and Restoration of Historic Buildings and Sites offers the possibility to students to join the programme of Master of Science (M.Sc.).

## Introduction

The Programme is addressed to architects, civil engineers, archaeologists, chemical engineers, geologists, conservators and other relative specialisations. It aims at a comprehensive, interdisciplinary approach to issues of conservation, so that students will be able to acquire all necessary knowledge and become qualified to manage architectural projects of all periods (archaeological sites, historical and traditional buildings and complexes, as well as buildings of the modern movement). One important element of the Programme is its interdisciplinary character, as it provides students with the opportunity to come in contact with different subjects from a wide range of scientific fields, as well as to collaborate with each other within the framework of joint, interdisciplinary synergies. In this way, a comprehensive, theoretical, as well as practical, training on issues of conservation and restoration of architectural heritage is achieved, emphasizing the necessary communication and cooperation between scientists from different fields of study.

## Feasibility and Goals

The Programme is targeted at qualified graduates, who are ready to be actively involved in the actual restoration and conservation of historic buildings and sites. The academic objectives of the Programme involve high-level graduate teaching and practical application of the knowledge gained by students through the exploration of case studies; this approach guarantees the comprehensive and interdisciplinary approach of restoration and conservation works on historic buildings and sites by the Programme graduates. At the same time, the Programme aims at advancing and enhancing current research results and methods in the respective fields of restoration and conservation.

The graduates of the M.Sc. in “Conservation and Restoration of Historic Buildings and Sites” are expected to be employed in relevant specialised positions in the public and private sector, both in Cyprus and abroad.

Furthermore, they will be able to provide consulting services in conservation and restoration projects.

The Programme aims at providing the students with novel knowledge in the field of restoration and conservation of historic buildings and sites and aspires to educate them to:

- Develop critical thinking during restoration and conservation works.
- Seek continuous professional development.
- Introduce and adopt innovative concepts/ideas, technologies and methods in their practice.
- Embrace interdisciplinary collaborations for the comprehensive approach and efficient solving of preservation problems of historic buildings and sites.

## Procedure and Criteria of Admission

Candidates for admission to the Interdepartmental Graduate Programme “Conservation and Restoration of Historic Buildings and Sites” must hold a university degree in a relevant field awarded by the University of Cyprus or other accredited university in Cyprus or abroad. They must also submit an official application for admission to one of the participating departments (host department), within the announced deadlines for applications.

Applications are evaluated by the Committee of the Postgraduate Programme, which makes recommendations to the Councils of the respective departments. The Departments are then responsible for the final admission of students. Each department maintains the right not to fill all available positions.

The selection of students is made according to the following criteria:

- Quality of academic career in depth and breadth of knowledge.
- Past achievements in undergraduate/graduate studies.
- Ability to develop independent critical thinking and research activity.

## Master of Science Programme in Conservation

For the award of the Master's Degree M.Sc. in "Conservation and Restoration of Historic Buildings and Sites", students are required to successfully complete the programme of studies, as described in detail below, including the successful attendance of seven courses, the completion of an independent research study, and the participation to an advanced group project (Capstone). The minimum duration of the Programme for full-time students is three academic terms (in addition to a summer semester). The maximum duration allowed for the completion of the Master's degree is four years, as determined by the University regulations. It is clarified that the three compulsory courses are offered every September, whereas the advanced group project (Capstone) starts every January and ends in December.

### Programme of Studies

The workload leading to the Master's degree M.Sc. requires the completion of at least 94 ECTS from a combination of graduate courses, an independent study and the advanced group project (Capstone), as follows:

	ECTS
<b>3 Compulsory Core Courses</b>	<b>26</b>
ARH 517 History and Critical Analysis of Conservation	8
CCE 533 Local and Traditional Building Materials	8
ARCH 652 Introduction to Building Archaeology	10
<b>Specialization Courses (elective)</b>	<b>32</b>
<b>4 Elective Courses from the list of the Programme courses</b>	
2 Graduate courses from the host department	16
2 Graduate courses from the other two departments	16
<b>Capstone Design Project</b>	<b>20</b>
<b>Research Independent Study</b>	<b>16</b>
<b>TOTAL</b>	<b>94</b>

Graduate Master students are considered as full-time students if they are registered in more than 18 ECTS each semester (according to the general rules of the University of Cyprus).

#### CON 500 A-C Capstone Design Project (20 ECTS)

For the successful completion of the Master Degree, students are required to participate in the interdisciplinary Capstone Design Project (CON 500), that is an advanced group project, which forms an important element of the programme. The Capstone Design Project (CON 500A-C) consists of three individual courses of a total duration of three semesters. Through these courses, the three Departments that participate in the Programme, achieve a close collaboration between their individual fields of specialization, as well as between the students who come from different academic disciplines and backgrounds. The goal is the comprehensive, interdisciplinary training of students and the development of their ability to co-operate in real-life

management issues, that cultural heritage is currently facing. It is noted that this course has been awarded and funded by the Teaching and Learning Center of the University of Cyprus, within the framework of the First Call of the action "Teaching Innovations".

The Capstone Design Project is essentially a case study, that combines analytical and design work and includes theoretical and archival research, field work (survey), laboratory experiments and design proposals. The work is performed by groups of students from all three Departments that participate in the Programme. These groups are formed according to the research background of each member and include architects, civil engineers, archaeologists, and conservators. In this way, students are better prepared to apply their knowledge to practical approaches, both academically and professionally. They also gain valuable experience from participating in an interdisciplinary project team, where each member performs part of the work based on their scientific background, but at the same time collaborates with others to reach the common goal of the project. Part-time students should have in mind that part of this project is carried out during the Summer Semester; so they should make the necessary arrangements in order for them to be available.

#### CON 510 Independent Study (16 ECTS)

For the Master Degree, it is required to carry out an individual research project. The topic of each student's research is chosen in collaboration with his/her Research Supervisor, and deals with a subject relevant to the area of conservation. The subject could be related to the Capstone Design Project.

### Indicative Programme

The appropriate combination of courses for each semester is determined by the student in coordination with his/her Academic Advisor. One indicative example of a programme of studies, which can be completed in three academic semesters (in addition to the Summer Semester) by a full-time student, is presented in the table below.

	ECTS
<b>1<sup>st</sup> Semester (Fall)</b>	
3 core courses	26
<b>Total</b>	<b>26</b>
<b>2<sup>nd</sup> Semester (Spring)</b>	
3 Elective Specialization Courses	24
Capstone Design Project CON 500A	5
<b>Total</b>	<b>29</b>
<b>Summer Semester</b>	
1 Elective Specialization Course	8
Capstone Design Project CON 500B	5
<b>Total</b>	<b>13</b>
<b>3<sup>rd</sup> Semester (Fall)</b>	
Capstone Design Project CON 500C	10
Independent Study CON 510	16
<b>Total</b>	<b>26</b>



## List of Courses

A student must successfully attend three postgraduate core courses (one from each Department that participates in the Programme), as well as a number of elective postgraduate courses (from within and outside the host Department), that will ensure the minimum number of ECTS units, according to the requirements of the programme.

A list of core and elective specialization courses, that are normally offered in the programme, is shown below (note that not all courses are available in the same semester or in the same year). Some courses may be offered as crash-courses. The context of the core and elective courses is enriched continually in order to update the students on current trends and new scientific results in the field of conservation.

### List of Core Courses offered by each Department

DEPARTMENT	ECTS
<b>Architecture</b>	
ARH 517 History and Critical Analysis of Conservation	8
<b>History and Archaeology</b>	
ARCH 652 Introduction to Building Archaeology	10
<b>Civil and Environmental Engineering</b>	
CCE 533 Local and Traditional Building Materials	8

### List of Core Courses offered by all three Departments

CON 500 A-C Capstone Design Project (20 ECTS)

CON 510 Independent Study (16 ECTS)

### List of Elective Specialization Courses

DEPARTMENT		ECTS
<b>Architecture</b>		
ARH 538	Environmental Building Design	(8 ECTS: 3-0-12)
ARH 540	Mediterranean Cities and Social Phenomena	(8 ECTS: 3-0-12)
ARH 549	Advanced Topics in Urban Planning	(8 ECTS: 3-0-12)
ARH 550	Special Topics on Recording and Documenting Buildings and Sites	(8 ECTS: 3-0-12)
<b>History and Archaeology</b>		
ARCH 650	Settlement and Landscape Archaeology	(10 ECTS)
ARCH 658	Urban Archaeology	(10 ECTS)
ARCH 663	Introduction to Cultural Heritage Management	(10 ECTS)
ARCH 664	Global Issues and Special Cases in Cultural Heritage Management	(10 ECTS)
ARCH 762	Built Environment from Prehistory to the Late Antiquity	(10 ECTS)

### Civil and Environmental Engineering

CEE 532	Advanced Technology of Materials	(8 ECTS)
CEE 533	Local and Traditional Building Materials	(8 ECTS)
CEE 534	Physical Properties and Related Durability Problems of Construction Materials	(8 ECTS)
CEE 537	Rehabilitation and Strengthening of Structures	(8 ECTS)
CEE 538	Experimental Methods in Structural Engineering	(8 ECTS)
CEE 547	Masonry Structures	(8 ECTS)

### List of Elective Courses offered by all three Departments

CON 520 Conservation Practice (8 ECTS)

### Descriptions of Core and Elective Specialization Courses

#### ARH 517 History and Critical Analysis of Conservation (8 ECTS: 3-0-12)

The course includes a diachronic overview of the history of conservation and an in-depth critical analysis of the most recent trends on the conservation of historic buildings. The course employs a critical analysis of international charters and declarations regarding conservation, and a systematic analysis of remarkable conservation works of historic buildings and works of the modern movement. The course aims to develop a critical analysis of contemporary trends and theories on conservation through the investigation of various criteria, bringing forth the general principles of and an interdisciplinary methodology for the comprehensive protection of outstanding buildings of various periods.

#### ARH 538 Environmental Building Design (8 ECTS: 3-0-12)

This course aims to deepen the theoretical and applied knowledge of students on the Environmental Design of Buildings and to highlight the role of the architectural design, construction and appropriate technical support in order to ensure proper living conditions for the users of a building; minimizing energy consumption and reducing adverse environmental impacts. The course covers issues concerning bioclimatic architecture, which aims to improve the comfort conditions of users – thermal, visual, acoustic comfort, air quality – in the indoor built environment; issues that have to do with energy design aiming to the minimization of energy consumption of the building envelope, as well as issues of ecological construction regarding the minimization of the ecological footprint.

#### ARH 540 Mediterranean Cities and Social Phenomena (8 ECTS: 3-0-12)

The course focuses on the understanding of the ways in which urban social phenomena both influence and are influenced by the morphology and planning of the city. Emphasis will be given on the formulation of novel readings, methodologies and interpretations of the multiple and complex cultural practices in Mediterranean urban space, in an attempt to enrich and broaden knowledge and urban design processes.

#### ARH 549 Advanced Topics in Urban Planning: Territorial Transformations: Urban Planning and Sustainable Development (8 ECTS: 3-0-12)

The monitoring of the development and spread of the urban fabric and the concurrent attention to be paid to the conservation

of arable land and the plant and animal environment are some of the most urgent problems affecting sustainable development. Moreover, better urban planning is one of the primary challenges of sustainable development. This includes not only the design of public space, roads, neighborhoods and houses, but also the development of parks and other green corridors, mass transit networks, water and water supply networks, industrial plant processes, as well as best practices in spatial development. The fundamental principles and tools of urban planning that fall under the adoption of sustainability principles for the development of cities – and especially at the scale of the neighborhood – will be explored in the context of this course.

#### **ARCH 550 Special Topics on Recording and Documenting Buildings and Sites (8 ECTS: 3-0-12)**

The course provides basic and advanced knowledge on recording and documenting buildings and sites using conventional and contemporary digital techniques. It aims at introducing research tools and methodological approaches for the in-situ monitoring of buildings, sites and individual building elements, while it includes methodologies for the evaluation and processing of monitoring data. Moreover, the course refers to the recording and analysis of the indoor comfort and energy efficiency of buildings. Among others, it refers to the documentation of functional particularities and to specific comfort requirements of buildings, while it includes quantitative recordings and analysis of the parameters defining comfort conditions.

#### **ARCH 650 Settlement and Landscape Archaeology (10 ECTS: 3-0-16)**

The aim of this seminar course is to offer students a cohesive and complete theoretical, methodological and practical background of settlement- and landscape archaeology, as a means of studying built space and the natural environment at a higher resolution, in order to identify, quantify and comprehend past human activity. With the use of case studies, in situ visits and drills, students will become familiar with (a) state-of-the-art methods and approaches for examining archaeological landscapes and (b) the technical equipment (e.g. robotic total station, Differential GPS, handheld computers) for recording and documenting archaeological features in the field.

#### **ARCH 652 Introduction to Building Archaeology (10 ECTS: 3-0-16)**

Building Archaeology ('Archéologie du bâti', 'Bauforschung') constitutes a branch of the discipline dealing with the scholarly and scientific analysis of standing historical structures by non-destructive means. Its methodology entails the close 'reading' of extant masonry surfaces, the production, and study of accurate illustrative documentation, the scientific investigation of mortars, pigments, metal, wood and other materials. Written historical records will be studied with a view to reconstructing the history of particular edifices within their immediate architectural and cultural surroundings. The course aims to familiarize students with the basic methods employed in this kind of 'above-ground' archaeology, through the survey of current theoretical approaches and introduction to photographic and graphic documentation.

#### **ARCH 658 Urban Archaeology (10 ECTS: 3-0-16)**

The course aims at familiarising students with the methods and challenges of archaeological research and the study of architectural history in the context of the history of European and Mediterranean urbanism from the Middle Ages until the present day. It attempts to define Urban Archaeology as a distinct and indispensable branch of the discipline, outlining its methodology and highlighting the political, financial, practical and other issues its practitioners tend to be confronted with; it surveys the

development of European urbanism from Late Antiquity through to the present, in order to map out the canvas on which subsequent discussion is drawn; it considers matters of documentation, conservation and presentation / valorisation of urban archaeological and other sites of historical import; and it scrutinises more closely particular case-studies, specifically chosen to throw selected problems and (in certain instances) their remedy into higher relief.

#### **ARCH 663 Introduction to Cultural Heritage Management (CHM) (10 ECTS: 3-0-16)**

The course aims to familiarize students with the concept of cultural heritage, its importance and the dangers that threaten it, as well as the reasons why it is imperative to manage it and what this entails. The students are introduced to the national and international legal instruments that govern Cultural Heritage Management (CHM), as well as to the most important local and international organizations engaged in it. The theoretical framework, ethics, methods and techniques involved in ensuring the protection, conservation and highlighting of cultural resources are examined, and good and bad practices in the field are discussed. By the end of the course, students will be able to recognize the potential contribution of CHM to the promotion of scientific knowledge, sustainable development, the improvement of the quality of life of human societies, the cultivation of respect for all human beings and their achievements, and peace-building.

#### **ARCH 664 Global Issues and Special Cases in Cultural Heritage Management (CHM) (10 ECTS: 3-0-16)**

This seminar will address various current issues in the field of CHM, such as cultural and environmental heritage conservation issues; intangible heritage; archaeological ethics; the ethics of museum collections and the antiquities' market; illicit trafficking in antiquities and the Internet; conservation and its role in the protection and the valorization of cultural heritage; the role of museums in CHM; CHM and sustainable development; CHM and cultural tourism; CHM and education. The focus of the course is on issues related to the preservation and protection of cultural and environmental heritage, the intangible cultural heritage, the archaeological code of conduct, the professional code of conduct of museums regarding the purchase of antiquities, the illegal trade in antiquities in relation to the Internet, conservation and its function in the protection and valorization of cultural resources, the role of museums in cultural heritage management (CHM). Special topics, such as CHM and sustainable development, CHM and cultural tourism, CHM and education, are also discussed.

#### **ARCH 762 Built Environment from Prehistory to the Late Antiquity (10 ECTS: 3-0-16)**

This course focuses on Cypriot and Aegean Archaeology. It aims at approaching and comprehending the social, economic and political connotations of some chosen, representative ancient monuments and sites in various regions of Cyprus and the Aegean and in different periods. These chosen examples will cover a broad chronological spectrum, from Prehistoric times down to the Roman era. For instance: Research on the structure and spatial distribution of Neolithic and Chalcolithic settlements of Cyprus, or the funerary structures of Minoan Crete, will be used to access and evaluate the respective pre-urban societies associated with them; the examination of the spatial settings of the Minoan palaces and of the Mycenaean acropoleis or of the Cypriot and Greek sanctuaries, will provide evidence for the analysis of urbanisation in complex socio-political and economic conditions that led to the formation of the state; and the expansion across the Mediterranean of the standardised spatial

arrangement of 'Agora-Gymnasium-Theater-Baths' will be investigated as a signal for the association of the built urban environment with social institutions from the Archaic down to Hellenistic and Roman times.

#### **CEE 532 Advanced Technology of Materials (8 ECTS: 3-0-12)**

Concrete components, microstructure and properties of Portland cement. Heat of hydration and thermal stress development in concrete. Strength, fatigue, failure mechanisms (fracture mechanics), creep, shrinkage and durability of hardened concrete. Special concretes: Self-compacting, high performance, recycled concrete and ultra-high performance. Fiber reinforced concrete. Behavior and mechanical properties. Mechanics of fiber reinforced concrete. Fiber reinforced polymer composites. High performance materials. Sustainability. Experimental investigation.

#### **CEE 533 Local and Traditional Building Materials (8 ECTS: 3-0-12)**

Natural building and decorative stones and stone structures. Properties of local stones. Decay and protection of stone. Imported stone carbon footprint. Local aggregates: characteristics and their effect on the quality of composite materials. Fired clay bricks. Binders, mortars and plasters. Local and traditional mortars. Earthen architecture and adobe. Timber.

#### **CEE 534 Physical Properties and Related Durability Problems of Construction Materials (8 ECTS: 3-0-12)**

Porosity and porous media, saturated and unsaturated flow, one dimensional flow, sorptivity, sharp front theory, applications of sharp front theory, evaporation and drying, salt crystallization, rising damp.

#### **CEE 537 Rehabilitation and Strengthening of Structures (8 ECTS: 3-0-12)**

Rehabilitation strategy and methods of intervention. Particular emphasis is placed on the detailing of interventions with FRPs in the context of EC8 – III and the Greek Retrofit Code 2010. Assessment of the structural implications of corrosion, particularly with reference to earthquake resistance. Use of FRPs in corrosion repairs. Required global and local interventions for earthquake resistance of old, lightly reinforced construction. Strength implications for foundation redesign and reinforced concrete jackets. Addition of walls, infills, diagonal braces. Detailing of retrofit. Other repair and strengthening methods. Injections of grouts, metallic nets. Local interventions with composites. Debonding. Strengthening for flexure using externally bonded plates and near-surface mounted reinforcement. Confinement, shear strengthening, strengthening of anchorages. Clamping action. Assessment and retrofit against torsional eccentricities in structures. Unreinforced masonry structures: repair and retrofit with advanced composites. Historical constructions, assessment and strengthening.

#### **CEE 538 Experimental Methods in Structural Engineering (8 ECTS: 3-0-12)**

Introduction to experimental mechanics. Structural models. Dimensional analysis-similitude laws. Static and dynamic modeling. Design of an experimental setup. Strain gage instrumentation. Force-displacements-velocity-acceleration-pressure-temperature transducers. Non-destructive testing. Data acquisition systems. Accuracy-reliability-statistical analysis of experimental data. Experimental testing.

#### **CEE 547 Masonry Structures (8 ECTS: 3-0-12)**

Masonry materials (stone, adobe/earth-based brick, mortar, timber) and their mechanical behaviour. Masonry types and construction techniques (unreinforced, reinforced, tier-laced, confined-masonry). Mechanical behaviour of masonry in compression, tension, bending, shear due to in/out-of-plane

actions (mainly as a result of gravitational and seismic loads). Behaviour of interfaces within the masonry and force transfer mechanisms. Construction details of masonry buildings (lintels, arches, etc.). Evaluation of mechanical characteristics of masonry and its constituent materials (in situ or at lab). Assessment, damage/pathology and retrofit/ strengthening of masonry buildings. Eurocodes and other codes for designing/assessing masonry walls and buildings. Simulation of masonry structures and static/dynamic analysis using finite element software.

#### **CON 520 Conservation Practice (8 ECTS)**

The course introduces students to the essentials of conservation required to underpin their practical work. It is a hands-on course with significant time spent in fieldwork and laboratories. Lectures, seminars, site-visits and practical exercises deliver ethical, scientific and practical elements of conservation, which include the use of materials and equipment in conservation practice. Case studies from different historic periods are used to highlight practical conservation problems. The course also covers current legislation and norms relevant to conservation practice in Cyprus and abroad. It aims to provide an underpinning framework for understanding the role of a conservator and the skills required to carry out conservation practice. Through this course students will develop the necessary skills of critical thinking in approaching current conservation practices and problems. This course is designed to develop student's ability to translate conservation theory into practice. The students will devise treatment strategies, with the support of staff and visiting lecturers, using a problem-based learning approach. In essence, the course delivers the necessary knowledge and expertise for graduates to operate as professionals in the heritage sector in Cyprus and abroad. It also provides skills in project and resource management, problem solving and communication, while also offering a solid platform for pursuing research.

## General Information

For updated information, students are advised to have a look at the website of the programme at:  
<https://ucy.ac.cy/conservation>.

For general information regarding the programme of study, registration, organization and support, students are encouraged to contact the secretariat of their host Department.

### **Department of Architecture (ARH)**

Tel.: 22 89 2980, email: [arch@ucy.ac.cy](mailto:arch@ucy.ac.cy)

### **Department of Civil and Environmental Engineering (CEE)**

Tel.: 22 89 2249, email: [cee@ucy.ac.cy](mailto:cee@ucy.ac.cy)

### **Department of History and Archaeology**

Tel.: 22 89 2180, Email: [isa@ucy.ac.cy](mailto:isa@ucy.ac.cy)

For specific information regarding the interdepartmental Postgraduate Programme "Conservation and Restoration of Historic Buildings and Sites", the students may contact the Coordinating Committee of the Programme.

## ACADEMIC COORDINATING COMMITTEE

### **Ioannis Ioannou, Associate Professor**

Department of Civil and Environmental Engineering

Tel.: 22892257, Email: [ioannis@ucy.ac.cy](mailto:ioannis@ucy.ac.cy)

### **George Papasavvas, Associate Professor**

Department of History and Archaeology

Tel.: 22893566, Email: [georgep@ucy.ac.cy](mailto:georgep@ucy.ac.cy)

### **Maria Philokyrou, Associate Professor**

Department of Architecture

Tel.: 22892974, Email: [mphiloky@ucy.ac.cy](mailto:mphiloky@ucy.ac.cy)



# GRADUATE SCHOOL



# Graduate School

[www.ucy.ac.cy/graduateschool](http://www.ucy.ac.cy/graduateschool)

The University of Cyprus anticipates further growth of its graduate education with the establishment of the Graduate School in 2012. The Graduate School aims to develop and promote high quality postgraduate studies at the University of Cyprus and to attract students from Cyprus and abroad.

The Graduate School differs from other Faculties of the University since it does not comprise departments, but it comprises the graduate programmes of the departments instead. The Graduate School provides support for the development, evaluation and promotion of graduate education throughout the University, without intervening in the academic work of the departments.

## Objectives of the School

The objectives of the Graduate School are the following:

- To adopt quality assurance indicators to ensure the quality of the postgraduates programmes and of the degrees awarded.
- To encourage interdepartmental and interdisciplinary programmes of study, including doctoral programmes and further synergies among the departments.
- To strengthen the University's research productivity and its links with the world's best universities.
- To improve the quality of the support offered to postgraduate students and to academic departments.
- To develop programmes of study in international languages other than Greek and Turkish.
- To provide financial support to postgraduate students through scholarships and grants in exchange for research or teaching.

## Contact Details

### Graduate School

Tel.: +357 22894044

E-mail: [fgs@ucy.ac.cy](mailto:fgs@ucy.ac.cy)

University Campus

University House "Anastasios G. Leventis"

Ground Floor

1 University Avenue

2109 Aglantzia

[www.ucy.ac.cy/graduateschool](http://www.ucy.ac.cy/graduateschool)



# Faculty of HUMANITIES







DEPARTMENTS

English Studies

French and  
European Studies

Turkish and  
Middle Eastern Studies



# Department of English Studies

[www.ucy.ac.cy/eng](http://www.ucy.ac.cy/eng)

The Department of English Studies is dedicated to the promotion of research and knowledge in the areas of English Language and Culture. It offers an undergraduate degree in English Language and Philology, with concentrations in Linguistics, Literature and Translation Studies.

The Department also offers the following Master degrees:

- English Studies
- Teaching English to Speakers of Other Languages (TESOL)
- Theoretical and Applied Linguistics (TAAL)

The Department offers Ph.D. programmes in subjects related to all research areas of its academic faculty.

## Research in the Department

The Department is involved in research into anglophone and comparative literature, translation, linguistics and cultural studies. More specifically, research activities of faculty members in the area of literature include theatre studies (especially comparative European theatre and melodrama), critical and cultural theory, early modern literature, Romanticism, 18th and 19th century prose, postcolonial and postmodern literature, continental philosophy, psychoanalysis, feminist and American studies and literary translation in a comparative literature context. Faculty members in the area of linguistics undertake various research projects in theoretical and applied linguistics, including theoretical syntax, comparative syntax, the syntax-semantics and syntax-morphology interfaces, language contact between English and Greek in the sociolinguistic frame of Cyprus (diglossia, lexical borrowing, etc.), as well as the teaching of English in primary schools and the development of language tests and their educational and social impact. Faculty members in the area of translation studies undertake research in literary translation (including drama), intercultural studies, cultural translation, translation theory, translation methodology, translation didactics, text linguistics, and interpreting studies.

## Research Collaborations

The Department, in collaboration with other universities in Cyprus and/or abroad, is involved in the following research programmes:

- Internal research project entitled "The Gradient of Lingualities (GoL): Language Acquisition in Minority Contexts, Incomplete Linguistic Competence and Theoretical Modeling in Heritage Speaker, and Vernacular Varieties" (UCY, 2019-21).
- COST-Action CA19102 entitled "LITHME (Language in the Human-Machine Era)" (2020-24).
- COST Action CA18123: The European Family Support Network. A bottom-up, evidence-based and multidisciplinary approach (2019-2023).  
Funding: European Science Foundation (ESF).

- COST Action CA16105: European Network for Combining Language Learning with Crowdsourcing Techniques (2017-2021).  
Funding: European Science Foundation (ESF).

## Postgraduate Studies

The Department of English Studies offers postgraduate programmes at M.A. and Ph.D. levels. The course of study for the M.A. in TAAL and the M.A. in English Studies is four semesters (three semesters of coursework, followed by one semester for writing the M.A. dissertation), while the programme of the M.A. in TESOL covers two semesters of coursework and the writing of an M.A. dissertation during the summer months.

Students are allowed up to eight semesters to complete an M.A. degree, if necessary. Doctoral candidates must complete at least six and no more than sixteen semesters of study.

In the Spring Semester of each academic year, the University announces which postgraduate programmes will be offered in the following year. The announcement can be found at: [www.ucy.ac.cy/goto/acafsw/en-US/NewEventsAnnouncements2.aspx](http://www.ucy.ac.cy/goto/acafsw/en-US/NewEventsAnnouncements2.aspx)

## Admission Requirements

- Postgraduate programmes at Master's level: Admission to the M.A. programmes offered by the Department requires a first class or upper second class degree (or equivalent) in a subject related to their proposed field of study. All candidates must be competent and fluent in English and, depending on the nature of the programme, in other relevant languages. Although candidates need not have completed their degree at the time of application, they must have received it before they commence the postgraduate programmes.
- Postgraduate programmes at Ph.D. level: Generally, applicants must hold a Master's degree (or equivalent), awarded by a recognized university, in a subject related to their proposed field of study; alternatively, they must show evidence of their ability to conduct research in the humanities.

## Application and Selection Procedures

For more information on application requirements and selection procedures, please refer to Admission and Attendance Regulations – Application Procedures or please consult the Graduate School (tel.: 22894021/44). See also the relevant link: [www.ucy.ac.cy/goto/acafsw/enUS/PostgraduateOffice.aspx](http://www.ucy.ac.cy/goto/acafsw/enUS/PostgraduateOffice.aspx))

### M.A. IN ENGLISH STUDIES

#### Philosophy

This Master's programme is designed for students who wish to pursue advanced study and research in English Studies. Drawing from the fields of Literary and Cultural Studies, Translation Studies, and the study of the English Language, this interdisciplinary, inter-generic programme balances theoretical, cultural and practical concerns. It has the following main objectives:

- To provide graduate students with a holistic understanding of hermeneutic and pedagogical issues of interpretation and transmission.
- To offer an extensive focus on theoretically and historically informed perspectives on Literature.
- To develop a particular focus on the role of the interlingual and intercultural transfer of literary texts through translation and adaptation.
- To provide a vital background in the philosophy and practice of language.

The Programme is divided into two components: The taught component covers the main areas of English Studies and familiarises students with research methodology; the thesis component gives students the opportunity to undertake research in a specialized area of interest. Offered courses will be drawn from a list of broader rubrics (listed below) that represent the philosophy and objectives of the programme. These course offerings may vary from one cycle of the M.A. to another, but by the end of the third semester students will have taken a minimum of one course from each of the four rubrics.

LIST OF RUBRICS	ECTS
<b>I) Topics in Literary and Cultural History</b>	
ENG 700 Aesthetics & Literature: From Romanticism to Postmodernism	10
ENG 713 Gender, Sexuality & Subjectivity in Early Modern Literature & Culture	10
ENG 721 Nation and Narrative	10
ENG 723 Early Modern Literature and Political Theory	10
ENG 724 The Struggle for Shelter: Refugees, the Five Generations, 1935-2020	10
ENG 725 Writing the Anthropocene	10
<b>II) Questions in Comparative Cultural Studies</b>	
ENG 705 The Animal in Literature and Philosophy	10
ENG 716 The Sublime	10

ENG 719 Space and Cultural Production	10
ENG 720 Seminar in Contemporary Feminist Theory: Debates on Aesthetics, Ethics and Politics	10
ENG 726 Advanced Seminar in Literary and Cultural Theory	10
<b>III) Reception, Translation, Adaptation</b>	
ENG 709 Imagined Worlds: The Long Nineteenth Century	10
ENG 727 Reading, Re-reading, Failing to Read: Methodo-logical Questions in Literary and Cultural Criticism	10
ENG 771 Shakespeare's Afterlives	10
ENG 772 Translation Criticism	10
<b>IV) Language, Literature, Pedagogy</b>	
ENG 704 Critical Pedagogy and Shakespeare	10
ENG 740 Language Teaching and Learning	10
ENG 743 Principles of Linguistic Analysis I	10
ENG 748 Principles of Linguistic Analysis II	10
ENG 749 First and Second Language Acquisition	10
ENG 760 Philosophy of Language	10
ENG 761 Pragmatics: Utterance, Context, Communication	10

### COURSE DISTRIBUTION PER SEMESTER

	ECTS
<b>First Semester</b>	
Compulsory course drawn from rubrics 1-4	10
Compulsory course drawn from rubrics 1-4	10
Advanced Research Skills I (Compulsory)	10
<b>Second Semester</b>	
Compulsory course drawn from rubrics 1-4	10
Compulsory course drawn from rubrics 1-4	10
Advanced Research Skills II (Compulsory)	10
<b>Third Semester</b>	
Compulsory course drawn from rubrics 1-4	10
Compulsory course drawn from rubrics 1-4	10
Research Portfolio (Compulsory)	10
<b>Fourth Semester</b>	
Master Thesis in English Studies	30
<b>Total ECTS</b>	<b>120</b>

### M.A. IN TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES (TESOL)

The Programme is primarily designed for those interested in TESOL as an academic field and has the following main objectives:

- To offer students a solid foundation and deepen their knowledge in the main areas of TESOL, from both a theoretical and a practical point of view.

- To acquaint students with new areas in the field (such as computer-assisted language learning, alternative assessment, English as a lingua franca).
- To engage students in research in the field of TESOL and consequently encourage them to further their studies.

The programme is divided into two components: The taught component covers the main areas of TESOL and familiarises students with research methodology; the thesis component gives students the opportunity to undertake research in a specialized area of interest.

### COURSE DISTRIBUTION PER SEMESTER

	ECTS
<b>First Semester</b>	
ENG 740 Language Teaching and Learning	10
ENG 741 Trends in Applied Linguistics	10
ENG 742 Research Methodology	10
ENG 762 Teaching Portfolio Development I	5
<b>Second Semester</b>	
ENG 753 Language Testing and Assessment	10
ENG 754 Materials Development and Course Design	10
ENG 75X Elective Course	10
ENG 764 Teaching Portfolio Development II	5
<b>Third Semester</b>	
ENG 765 Completion of Master Thesis in TESOL	20
<b>Total ECTS</b>	<b>90</b>

### M.A. IN THEORETICAL AND APPLIED LINGUISTICS (TAAL)

The Programme is primarily designed for those interested in the scientific investigation of language and has the following main objectives:

- To offer students a solid foundation and deepen their knowledge in the main areas of English grammar and the structure of language.
- To acquaint students with different areas in the field (such as syntax, semantics, phonology, applied linguistics, etc.).
- To provide guidelines for students conducting research in the field of Linguistics, and consequently encourage them to further their studies.

The Programme is divided into two components: The taught component covers the main areas of Linguistics and familiarises students with research methodology; the thesis component gives students the opportunity to undertake research in a specialized area of interest.

### COURSE DISTRIBUTION PER SEMESTER

	ECTS
<b>First Semester</b>	
ENG 741 Trends in Applied Linguistics	10
ENG 743 Principles of Linguistic Analysis I	10
ENG 766 Portfolio Development I	10
<b>Second Semester</b>	
ENG 748 Principles of Linguistic Analysis II	10
ENG 742 Research Methodology	10
ENG 767 Portfolio Development II	10
<b>Third Semester</b>	
ENG 749 First and Second Language Acquisition	10
ENG 750 Topics in Linguistics	10
ENG 768 Portfolio Development III	10
<b>Fourth Semester</b>	
ENG 769 Master Thesis in TAAL	30
<b>Total ECTS</b>	<b>120</b>

## Research Interests of the Academic Staff

### • Stella Achilleos, Associate Professor

Her research interests concentrate on the literature and the social and cultural history of the early modern period. Her research focuses particularly on the discourses and practices of friendship in early modern literature and culture, literature, community and sociability (with emphasis mainly on the seventeenth-century poetry and sociability), literature and utopia, early modern political theory (emphasizing especially on theories of sovereignty), and the literature of the English Revolution.

### • Spyros Armostis, Lecturer

His research interests lie in the fields of Phonetics, Phonology, Sociolinguistics, and Clinical Linguistics. In particular, his research focuses on the following: Articulatory, acoustic, and perceptual phonetics as well as laboratory phonology for the investigation of first or second/foreign language, variational sociolinguistics, and the investigation of typical and atypical language development.

### • Antonis Balasopoulos, Associate Professor

The literary construction of racial, national and imperial identities (with emphasis on the American novel of the 18th and 19th centuries), the cultural production of space (with a special emphasis on the production of utopian spaces in literary, political and architectural discourse), the politics of representation in the visual arts, and critical theory (especially materialist theories of cultural production, genre theory and post-colonial theory).

### • Georgios Floros, Associate Professor

His research interests focus on theoretical and methodological aspects of translation and interpreting, text linguistics and discourse analysis. More specifically, his main research areas include culture and translation, translation methodology, didactic aspects of translation & interpreting, translation ethics and politics, secondary term formation and terminology in bilingual contexts, and the use of translation in other professional contexts. Regarding the text linguistic and discourse-analytical perspective, he is interested in textual structure, genre theory and textual pragmatics.

### • Vasso Giannakopoulou, Assistant Professor

Her research interests lie in literary translation, style in translation, translation sociology, with a particular interest in the application of Bourdieusian sociology in Translation Studies, the reception of canonical texts through translation, and especially the reception of Shakespeare's works in Greek, translation history, both as theory and as a practice, theatre translation for the page and the stage, the relation between translation and adaptation, and intersemiotic translation with a special focus on comics.

### • Kleantes K. Grohmann, Professor

His research interests lie in the field of Bilingualism, in particular theoretical linguistics, cognitive aspects of the human language faculty, and language acquisition. He is concerned with syntactic theory, synchronic and diachronic study of grammar, and theoretical concerns in psycho- and neurolinguistics. The language families, he is currently most interested in, are Germanic, Greek, Romance, and Slavic.

### • Sviatlana Karpava, Lecturer

Her areas of research are: Applied Linguistics, Syntax, Semantics and Pragmatics, First and Second Language Acquisition, Bilingualism, Multilingualism, Sociolinguistics, Teaching and Education. She is interested in heritage language use, maintenance and transmission, language loss, shift and attrition, family language policy and intercultural communication.

### • Konstantinos Kritsis, Lecturer

His research interests focus on the interfaces between translation/interpreting and theatre/information technology. More specifically, his research areas comprise Theatre and Drama Translation (history, theory, practice, and didactics), the application of actor training techniques and approaches to the training of translators and (community) interpreters, as well as the use of digital tools in (community) interpreter training.

### • Maria Margaroni, Associate Professor

History and Theory of Literary Criticism, Continental Philosophy, Feminist and Gender Studies, Psychoanalysis and Neuropsychology, Trauma Theory, Contemporary Anglophone Literature (especially, fiction and drama).

### • Anastasia Nikolopoulou, Associate Professor

History and Theory of European and American Theatre, Gothic and Romantic Literature, Melodrama, the Victorian Novel, Philosophical Hermeneutics, Popular Culture.

### • Phoevos Panagiotidis, Professor

His research interests comprise general linguistics, language typology and change, morphology, syntax and their acquisition. More precisely, his research concentrates on the syntax and acquisition of nominal phrases and syntactic edges and on issues of grammatical category from a syntactic, morphological and semantic point of view.

### • Evy Varsamopoulou, Associate Professor

English and European Romanticism, aesthetics, the artist novel (Künstlerroman), the sublime (18th to 20th century), comparative literature, the ancient Greek novel, history and theory of the novel, autobiography, literary theory, anti-colonial theory, cultural theory, philosophical approaches to literature and film—particularly, ethics, phenomenology, existentialism, political philosophy, Kantian and post-Kantian aesthetics, psychoanalysis, time and narrative, subjectivity and gender, community and identity.

## Contact Details

### DEPARTMENT SECRETARIAT

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# Department of French and European Studies

[www.ucy.ac.cy/frml](http://www.ucy.ac.cy/frml)

The Department of French and European Studies offers two Postgraduate Master Degrees:

- a) Master in Didactics of French as a Foreign Language and
- b) Master in European Studies

It also offers two Postgraduate Programmes at a Ph.D. level in:

- a) French Studies and
- b) European Studies

## MASTER DEGREE IN DIDACTICS OF FRENCH AS A FOREIGN LANGUAGE

The Master Programme in Didactics of French as a Foreign Language is designed to give students academic knowledge (for example: a theoretical framework, awareness of modern methodologies), professional skills (for example: practice teaching, gaining experience in teaching in schools), and familiarity with educational administration. More specifically, the programme provides students with the theoretical background required to analyse teaching situations, as well as the practical tools they will need in their professional careers.

The Master Degree in Didactics of French as a Foreign Language is suitable for teachers who are currently working in the public or private sector in Cyprus and who are seeking for further specialization on their subject, as well as for future teachers or those who wish to specialize in the French language for other professional reasons. It is also addressed to holders of an undergraduate degree (usually, but not necessarily, in the French language or Linguistics), awarded by the University of Cyprus or by any other accredited university, seeking for specialization in teaching French as a Foreign Language in combination with educational leadership and administration skills. In terms of academics, the programme will educate its students, in accordance with the latest requirements of teaching French as a Foreign Language and according to the current needs of the labor market of Cyprus and abroad. In terms of research, the programme aims to prepare graduates to undertake high-level academic research in this field.

In addition to preparing its graduates for employment as teachers of French as a Foreign Language, the programme also qualifies its graduates for many other professional opportunities, such as becoming foreign language Inspectors, directors of francophone and foreign private schools, directors of language centres and private institutes, instructors of pedagogical institutes, inspectors of French as a foreign language, future francophone cultural attaché, writers of francophone manuals, consultants or specialists in the francophone world, consultants or experts in multilingualism, expert advisors to NGOs active in the francophone world (Asia, Africa, etc.), consultants and officers of francophone programmes, consultants and officers in linguistic programming and policy, consultants and practitioners in

the field of language services, francophone curricula designers, translators/interpreters.

## Terms of Admission

Criteria for admission to the programme include: a) a first degree in any of the areas of Social Sciences or the Humanities, with an overall average of 7/10, an equivalent grade and/or proven research abilities, and/or teaching experience; b) good knowledge of the French language (indicative level B2); c) basic knowledge of another international language, sufficient for passive comprehension of literature relevant to the programme. The Departmental Postgraduate Committee reserves the right to require any selected candidates it deems necessary to take courses outside the programme of studies, that might be missing from their academic background but are considered vital (e.g., a French Language Course, Research Methodology, etc.). The credit for these courses will not affect the total number of ECTS of the postgraduate programme, since the grade will be in the form Pass/Fail and, therefore, will not contribute to the assessment level of the students.

## Application

The application should be submitted electronically and must include:

- 1) A letter of interest with a statement of research and/or professional goals and interests of the candidate (500 words), in French.
- 2) A Curriculum Vitae, in French.
- 3) A copy of the undergraduate degree accompanied by the Diploma Supplement (DS) or the official transcript.
- 4) A writing sample, such as teaching material, a brief article, an excerpt of academic work, etc. (optional).
- 5) Two letters of recommendation to be directly submitted by the referees via the electronic application system of the University.

Applications will be examined by the Departmental Postgraduate Committee. If the Committee deems it necessary, the selected candidates will/might be invited for a personal interview or an interview via video-conference. The Committee's list of selected candidates will be submitted for a final approval to the Board of the Department of French and European Studies.

## Postgraduate Scholarships

There is a limited number of scholarships available, and these are not available every year. Upon acceptance into the programme, all students are eligible to apply. The deadline for submission of applications and the selection criteria will be announced on the Department's website.

## Programme Duration

The Programme extends over three semesters, during which the physical presence of the students at the University is required. However, through the ERASMUS+ Programme students can spend the maximum permitted time by the regulation of the University of Cyprus in institutions abroad. The possibility of a joint Master dissertation supervision, as a part of the exchange and cooperation programmes between the University of Cyprus and Departments, Laboratories or Research Institutes abroad, is viewed positively.

## Programme Structure

The Programme extends over three semesters and requires successful completion of a minimum of 90 ECTS. It concludes in the awarding of the title of Magister Artium. The programme of study per semester is distributed as follows:

	ECTS
<b>First Semester</b>	
FES 730 Methodologies in Teaching French as a Foreign Language	10
FES 731-738 Course from the indicative list of the Department of French and European Studies	10
EDU or PSY Course from the indicative list of the Department of Education or the Department of Psychology	—
<b>Total</b>	<b>30</b>
<b>Second Semester</b>	
FES 731-738 Course from the indicative list of the Department of French and European Studies	10
FES 731-738 Course from the indicative list of the Department of French and European Studies	10
EDU or PSY Course from the indicative list of the Department of Education or the Department of Psychology	—
<b>Total</b>	<b>30</b>
<b>Third Semester</b>	
FES 749 Graduation Project DID	30
<b>Total</b>	<b>30</b>
<b>Grand Total</b>	<b>90</b>

**Note:** The Department of French and European Studies will select the courses offered each semester apart from the compulsory FES 730, Methodologies in Didactics of French as a Foreign Language (See below the indicative list of courses offered by the Department of French and European Studies).

The courses in the Department of Education are credited with 12 ECTS. The courses in the Department of Psychology are credited with 7.5 ECTS. Students who select courses from the Department of Psychology may fulfil the remaining credit requirements with the Research Methodology course offered by the Department of French and European Studies and/or by seminars offered by the collaborating Departments.

**Conferences, workshops and lectures**, organized by the collaborating departments on topics related to the curriculum, are an important complement to the programme. Students may be required to submit written reports associated with these activities.

In exceptional circumstances, and after approval by the Departmental Graduate Studies Committee, students may substitute one course from the Master's curriculum with another course offered in another postgraduate programme at the University of Cyprus, provided it is related to the subject of their thesis and carries an equivalent number of credits.

## Graduation Project

The graduation project is undertaken under the supervision of a member of the academic staff of the Department, or under the supervision of a member of the academic staff of the Department with a second evaluator from a collaborating department, after consulting with the academic advisor. Students should select their subject and Supervisor(s) by the end of the second semester of their studies. The graduation project (8,000-15,000 words) is assessed by a Committee assembled at the end of the programme's third semester and consists of the supervisor and another member of the academic staff. According to relevant regulations, the project should be submitted before the viva voce examination, which occurs during the examination period of the third semester.

## Working Languages

The courses are taught mainly in French, except for those offered by the Department of Education and the Department of Psychology, which courses are taught in Greek. The bibliography for the seminars will be the same as the language in which they are offered. The subject of the thesis must be relevant to the didactics of French as a Foreign Language and it can be written in French or Greek.

## Courses Description (indicative list)

### FES 730 Methodologies in Didactics of French as a Foreign Language (10 ECTS)

Through an interdisciplinary approach that requires students' critical thinking, the course outlines the principles governing the design of the teaching and learning process. It defines the current theoretical framework of the discipline of Didactics of French as a Foreign Language and Culture and outlines the fundamentals of designing and planning a course curriculum. The course discusses the principles of pedagogy which aims to create incentives and thus to improve the teaching and learning practice. More specifically, the course suggests ways of developing methodological skills, including: Identification and

selection of teaching and learning objectives, selection and adaptation of learning material, development of teaching material through lesson plans, the use of interactive whiteboards, lesson planning and classroom management.

#### **FES 731 Information and Communication Technology in Didactics of French as a Foreign Language (10 ECTS)**

The course will familiarize students with methods of teaching French as a Foreign Language, using information technologies and communication technologies. The use of new technologies as teaching tools will enrich the teacher's educational approaches and practices and enhance the student's learning horizons. The first part of the course examines the use of computer technology in teaching languages and in digital learning environments (for instance, computing applications with multimedia, hypermedia and Internet). The second part studies Computer-mediated Communication (English: CMC, French: CMO), Distance Learning (synchronous and asynchronous education), Hybrid Education and Tele-teaching.

#### **FES 732 Acquisition of Language Skills in Oral and Written Communication of French as a Foreign Language (10 ECTS)**

The course will present the theories of learning and particularly the theoretical principles underlying speaking and writing competency in the acquisition of French as a Foreign Language. In this context, we consider the use of various methodologies in teaching a language in its spoken and written form; important among these are the *communicative approach*, the *application of text linguistics to teaching / learning foreign languages*, the *use of comprehension activities* as well as written activities. The course also looks at ways of coping with learning difficulties in the production of spoken and written language (blocking, emotion, anxiety, self-esteem, motivation, formative self-assessment).

#### **FES 733 Sociolinguistics and Didactics of French as a Foreign Language (10 ECTS)**

The course analyzes the relationship between teaching and learning the French language within a wide range of contexts including social, political, cultural, psychological and interpersonal frameworks. More specifically, the course aims to familiarize and sensitize students with issues which are part of the broad interplay of language and society, namely in the field of Sociolinguistics. The focus will be on becoming aware of issues that deal with language diversity, language change, language contact and language policies, as well as the influence of the principles and conclusions of Modern Sociolinguistics regarding the educational practice.

#### **FES 734 Teaching the Grammar of French as a Foreign Language (10 ECTS)**

The course examines modern ways of teaching grammar. The way to teach grammatical structures and the rules of the French language is, especially at novice levels, inductive and starts with examples taken from texts (i.e., it is contextualized, as required by modern, communication-oriented language teaching). Grammar is not an independent discipline but it is a part of the language course, as one of the components that make communication possible (for example, vocabulary, production and understanding of spoken language, etc.). Grammar is presented as a structure that functions as a means of effecting communication, as well as a means of stylistic differentiation, of textual cohesion and a mechanism of textual modulation.

#### **FES 735 Teaching with Francophone Literary Texts (10 ECTS)**

In this course, literature is viewed as a means of acquiring cognitive tools that can enhance the learning of the French language. The aim of this course is to enable students to use a

francophone literary text in the context of communication and action. More specifically, through contemporary and classic French-language literary texts we approach the French language and grammar, idiomatic expressions and specific structures and their function in linguistic and textual environments. Finally, through a literary perspective, data offers answers to the following questions: How can one include the literary discourse in the process of building the communicative competence? How can one articulate literature and linguistic, socio-cultural as well as pragmatic skills with discourse skills? How can reading skills be developed through literacy texts?

#### **FES 736 Strategies for Learning the French Language: Analysis and Evaluation of Errors (10 ECTS)**

The course will help students analyze strategies, evaluation and learning mistakes that learners make, when studying French as a Foreign Language. More specifically, it focuses on identifying, recording and interpreting frequent errors, that appear in the writing of Greek-speakers who are learning French. The teacher, who knows the language elements with a high frequency of error, knows what to focus on. The study and analysis of errors can also help teachers understand the cognitive and linguistic processes involved in learning the language. Finally, students will consider the importance of analyzing errors from a communication perspective: What is evaluation? What is to be evaluated? When? How and why?

#### **FES 737 The Action-oriented Approach in Teaching French as a Foreign Language (10 ECTS)**

The course presents a new technique of learning French as a Foreign Language, which mainly focuses on the role of experience in the process of learning. Through the action-oriented approach, the teacher stimulates the student, coordinates and monitors the learning process while he emphasizes on the importance of active involvement in language learning. This method also reinforces the relevance between the classroom, the daily lives of the students and the reality of the Francophone society. Students participate in a variety of activities such as research, observation, interviews, simulations, creative compositions, etc. Within this framework, the course seeks to enhance communication and cooperation between the learner and the teacher, in order to develop knowledge in francophone environments.

#### **FES 749 Graduation Project DID (30 ECTS)**

The Graduation Project (30 ECTS) is an introduction to autonomous theoretical and applied research, that seeks to exploit the acquired expertise of the graduate programme and put it into practice. Specifically, the student seeks to gain expertise in a particular subject and, after working on an independent research, to be able to draw conclusions that will have research and scientific interests.

**Indicative List of Courses  
of the Department of Education  
(See Descriptions in the Department of Education)**

EDU 603	Comparative Education
EDU 610	Evaluation of Educational Programmes
EDU 617	Management in Education and Change Management
EDU 620	Introductions to Educational Administration
EDU 621	Exploitation and Development of Human Resources
EDU 622	School Organization and Administration
EDU 623	Observation and Evaluation of Teaching and Educational Personnel
EDU 624	Planning and Decision Making in Education
EDU 625	The Application of New Technologies in Educational Administration
EDU 627	Introduction of Innovations in Education
EDU 628	Political Aspects of Education
EDU 629	Pedagogical Leadership
EDU 630	Financial Aspects of Education
EDU 631	Effectiveness and School Improvement
EDU 635	Organizational Behaviour and Leadership
EDU 642	Basic Principles of Measurement and Evaluation in Education
EDU 649	Educational Management in Europe

**Indicative List of Courses  
of the Department of Psychology  
(See descriptions in the Department of Psychology)**

PSY 605	Psychometrics
PSY 610	Psychology in Education
PSY 616	Mental Representations
PSY 617	Counselling Psychology
PSY 620	Learning and Cognition
PSY 630	Contemporary Theories of Human Development
PSY 637	Social Development and Social Settings
PSY 701	Psychology of Instruction
PSY 707	Family and Child Development
PSY 712	Cognitive Science
PSY 715	Language Development and Language Disorders

## MASTER DEGREE IN EUROPEAN STUDIES

The Master degree in European Studies is offered in Greek and other international Languages. However, its courses are usually taught in English. According to the linguistic profile of students, some courses can occasionally be taught in Greek or French. The aims of the Master's programme can be summarized as follows:

- From an academic point of view, the Programme aims to cover an obvious gap between the programmes offered internationally in the field of Postgraduate European

Studies. More specifically, it aims to move away from the usual frame of such programmes which are usually based on a dominant politico-economic approach.

- Thus, the postgraduate Programme aims to investigate specific issues related to cultural Europe and to see how these issues relate to the philosophical, literary, visual and other cultural narratives. The programme puts forward ways of studying European cultural phenomena in a synthetic way, combining a specific European conjuncture with its diachronic depth.
- From a research point of view, the aim of the Programme is for its graduates to be able to carry out doctoral studies in specific fields of European cultural studies, combining them with European literature studies, comparative literature, visual and art studies, European history, sociology, anthropology and political sciences.

## Conditions of Admission

To be eligible, candidates must fulfil the following criteria:

1. A first degree in one of the wider fields of the Humanities and Social Sciences with an average of 7/10, or equivalent grade, and/or certified skills in research, and/or previous experience in European-related Institutions.
2. Satisfactory knowledge of at least one International Language (indicative Common European Framework of Reference for Languages level: B2).
3. Basic knowledge of a second international language, sufficient for elementary comprehension of relevant literature.

The Department has the right, if it deems necessary, to ask the selected students to attend courses outside of the programme (e.g. Research Methodology), in case weaknesses are noted in their training. The credit for these courses will not affect the total number of ECTS of the postgraduate Programme, since the grade will be in the form of Pass/Fail and therefore, will not contribute to the assessment level of the students.

## Application

The application is to be submitted electronically and should include:

1. A letter of intent with a brief report stating the research and/or career targets and interests of the candidate (500 words in an International Language).
2. A Curriculum Vitae in an International Language.
3. A copy of the Undergraduate Degree accompanied by a Diploma Supplement (DS) or an Analytical Assessment Report.
4. A sample of written work such as a brief article, excerpt from University work, etc. (optional).
5. Two reference letters.

Applications are examined by the Departmental Postgraduate Committee. If the Committee deems it necessary, the selected candidates will be invited to a



personal interview or will be interviewed via video-conference. The Committee's proposal will be submitted for final approval to the Board of the Department of French and European Studies of the University of Cyprus.

## Duration

The Programme extends over three semesters, during which the physical presence of the students at the University is required. However, through the ERASMUS+ Programme students can spend the maximum permitted time by the regulation of the University of Cyprus in institutions abroad. As part of the exchange and cooperation programmes between the University of Cyprus and departments, laboratories or research institutes abroad, the possibility of a joint master dissertation supervision is viewed positively.

## Structure

The Programme extends over three semesters and requires a minimum of 90 ECTS. It concludes in the awarding of a Magister Artium. The programme of study per semester is distributed as follows:

	ECTS
<b>First Semester</b>	
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
<b>Total</b>	<b>30</b>
<b>Second Semester</b>	
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
FES 761-790 Course from the indicative list of the Department of French and European Studies	10
<b>Total</b>	<b>30</b>
<b>Third Semester</b>	
FES 750 Graduation Project EUR	30
<b>Total</b>	<b>30</b>
<b>Grand Total</b>	<b>90</b>

The compulsory courses that the students of the programme need to take are announced before each semester begins.

Students may substitute one course from the Master's curriculum with another course offered in another postgraduate programme at the University of Cyprus,

provided that it is related to the subject of their thesis and carries an equivalent number of credits.

Conferences, workshops and lectures organized by the University on topics related to the curriculum are an important complement to the programme as their content may be the subject of evaluated written exercises.

## Graduation Project

The graduation project is undertaken under the supervision of a member of the academic staff of the department, or under the supervision of a member of the academic staff of the department with a second evaluator from a collaborating department, after consulting with the academic advisor. Students should select their subject and supervisor(s) by the end of the second semester of their studies. The graduation project (8,000-15,000 words) is assessed by a Committee, assembled at the end of the programme's third semester and consists of the Supervisor and another member of the academic staff. According to relevant regulations, the project should be submitted before the viva voce examination, which occurs during the examination period of the third semester.

## Working Languages

The Programme's seminars are delivered in Greek and/or in an international language which needs to be specified each time, depending on the language skills of the participating students. The bibliography of the seminars is in Greek and/or in an international language. Seminar work is written in a language to be agreed each time between the instructors and the students. The postgraduate dissertation is to be carried out in an international language.

## Scholarships

Upon acceptance into the Programme, students are eligible to apply for a limited number of scholarships, provided that scholarships are available that year. The deadline for submission of applications and the selection criteria will be announced on the Department's website.

## Courses Description (indicative list)

### FES 750 Graduation Project EUR (30 ECTS)

The Graduation Project (30 ECTS) is an introduction to autonomous theoretical and applied research that seeks to exploit the acquired expertise of the graduate programme and put it into practice. Specifically, the student seeks to gain expertise in a particular subject and after working on an independent research to be able to draw conclusions that will have research and scientific interests.

### FES 758 Discourse, Borders and Migration (10 ECTS)

The course covers the fundamental research focused on the discursive and multimodal construction of identities, borders and migration within the European 'space'. We first examine the historical discourse on migration (within Europe), including the presentation of the official discourse of the EU regarding the issue. We also address how identities of migrants, their reasons for

migrating, etc. within and towards Europe are constructed during the most important migrant waves, giving a special attention to the discursive definitions of refugees, migrants, etc. within the European mass media. We, finally, focus on comparative cases studies found in mass media using Critical Discourse Analysis.

#### **FES 761 Elusive Definition(s) of Europe (10 ECTS)**

In antiquity, the term 'Europe' referred to Zeus' beautiful lover as far as mythology was concerned, but geographically speaking it also denoted an entire continent. Later on, the word Europe was associated with a closed space hosting a common culture shared by many people. For example, after the Fall of Constantinople (1453), the term appears in the confrontation of the West with the Ottomans, noted in the speeches of Enea Silvio Piccolomini. From the 15th century and onwards, the meaning of the term develops rapidly. Humanists and people of the Enlightenment such as Erasmus, Bodin, Comenius, Grotius, Leibniz, Shaftesbury, Bolingbroke, Montesquieu, Locke, Hume, Voltaire, Rousseau, Kant and Novalis develop the idea of Europe in their political and cultural theories, while at the same time they perceive Islam as a challenge as far as the re-examination of the relationship between Judaism, Islam and Christianity is concerned. It is due to their work that the secular meaning of the term prevailed: the various models of tolerance arise, the fear of the stranger, as well as the image of the 'other' begins to be discussed. In the same framework, human rights, minority rights and gender rights become ideas worth struggling for. In the 19th century the term 'Europe' is used in order to combat various nationalisms. Finally, after the two World Wars of the last century, political theory perceived Europe as a great leap towards establishing an Ecumenical Community (Habermas). These changes in Europe's character demand a constant revision of it.

#### **FES 762 The Discourse of Culture in Europe, from Plato to Popper (10 ECTS)**

Plato's *Politeia* ('Republic') is a challenging text concerning the rearing and education ('paideia') of people, which had a great effect on the European mentality throughout the ages. In his quest for justice, Plato proposed the tripartite distinction of the human soul (the 'logikon'-logical, the 'thymoeides'-the high spirited and the 'epithymitikon'-the appetitive), as well as the theory of the four virtues (wisdom, courage, reason and justice). Furthermore, he combined the Theory of 'Paideia' with the Philosophy of the State, the Theory of Science and the sharp viewing of Fine Arts. Europe's later pedagogues developed their own theories based on these Platonic preconditions. For example, the pedagogical texts of Castiglione, More, Rousseau, Schiller, Karl Popper and others, all discuss Plato's positions either directly or indirectly. This theoretical lesson allows a wider accessibility to pedagogy, which contains elements taken from anthropology, psychology, theory of the state and the philosophy of History.

#### **FES 763 Tragedy in Europe and Europe in Tragedy (10 ECTS)**

Although tragedy is a Greek invention, it, however, came to be a common cultural asset of the European culture as a whole, since it was developed in England (Marlowe, Shakespeare), Spain (Calderón, Lope de Vega), France (Racine, Voltaire), Germany (Goethe, Schiller, Kleist) and Scandinavia (Ibsen, Strindberg). Tragedy allows for social problems and tensions to be enacted and analyzed. From directing to the theatrical adaptation of a tragedy a close relation with the public is developed. Its initial ritual dimension (the interchange between dialogue and chorus and reference to myth) is presented in increasingly more modern forms. From the wide range of tragedy material, cultural conflict and wartime experiences are investigated (e.g. Aeschylus, *The Persians*), as well as the problems of political power (e.g.

Shakespeare, *King Lear*), social conflicts (e.g. Büchner, *Woyzeck*), the battle between the two genders (e.g. Ibsen, *Hedda Gabler*) and more recently, criticism of the Bourgeois Society (e.g. Brecht, *The Threepenny Opera*) come to light. Towards the end of the module, themes such as the special meaning and the possible interpretations of tragedy in Europe's modern societies are investigated, based on the *Short Organum* (Brecht) and the *Théâtre de la cruauté* (Artaud).

#### **FES 766 From Europe's Abduction to Huntington's Clash: Models of Cultural Interpenetration (10 ECTS)**

This course examines various models of cultural co-existence.

- Models of Isolation: religious or nationalist discourses of distinction or superiority, marking-off of bounded spaces both in and beyond Europe, natural boundaries like those mapping the Utopias, homogeneous and tautological concepts of (supra) national identity such as the Aristotelian hellenocentricity, medieval allegories of superiority, modern nation-states.
- 'Polemos': Titanomachy, Abductions and their Variations.
- Models of Peaceful Interaction: mythological narratives of marriage and various discourses of cosmopolitan idealism (Zeus, Xenos, Diogenes, 18th to 21st-century philosophers: Kant, Derrida, Levinas, Appiah, Sen, Thich Nhat Han), contemporary narratives of peaceful interaction (European Neighbourhood Policy).

#### **FES 767 Cultural Hegemonies in European Space (10 ECTS)**

Although art is generally subversive, it has also been used to serve absolute conformism. In its supposedly civilising manifestations, art served to disseminate the image of a specific culture/nation. However, European history offers many examples of the association of cultural hegemony, in the Gramscian sense, with the promotion of a dominant power or ideology. Cultural hegemony has thus been deployed in order to glorify certain leaders, to push propaganda or even to impose a particular belief system. Thus, European art has often been on the side of the powerful. This course examines several examples of the mobilisation of art in the service of hegemony.

#### **FES 768 The Critique of Justice in European Culture (10 ECTS)**

Europe could be described as a Space of Law. However, from very early on, the founding texts were accompanied by the intellectual scepticism of writers questioning both the theory and practice of the Law as well as its aspirations towards an ideal Justice. This critique appears in many forms in the European culture and speaks in many different idioms, from Aeschylus to Brecht, from 'ύβρις' to Utopia, from philosophy to satire, from sculpture to cinema. Its numerous indictments in European culture both of the legal profession and of the Law itself is an important part of Europe's permanent re-evaluation of the very idea of Justice.

#### **FES 769 Europe under Siege (10 ECTS)**

Since 2008, Europe faces a series of problems (debt crisis, jihadist terrorism, refugee's crisis, coronavirus sanitary and economic crisis), that endanger European integration. Many contemporary thinkers and analysts point to similarities and differences between the current European crisis and the historical experience of the Weimar Republic (1918-1933) and the rise of the Nazis (1933-1940). What this period shares mainly with the actual European political experience is the antiliberal rhetoric that discredited parliamentary democracy and opened the road to totalitarianism. The seminary will discuss the importance of these antiliberal ideas in today's situation.

### **FES 770 Which Political Form for which Europe? (10 ECTS)**

What could a unified Europe be? This seminary will examine three political forms that suit the importance and the size of the European experiment: The empire, the church and the federation. The first two permit the coexistence under one rule of individuals of different nations and cultures, and of ethnic groups or national groups. The third one leads to a union of nations under a common legal and political framework. As the transition from the national States to a European State proves to be more difficult than imagined, can Europe be understood as a democratic empire or a Christian club?

### **FES 771 European Spirit in the Globalized Era (10 ECTS)**

This seminary will examine a series of philosophers that contributed in the making and understanding of the European way of life. We will mainly, but not exclusively, discuss important works of Kant, Hegel, Husserl, Patočka, and Foucault. Each one of these philosophers emphasized in a certain aspect of the European unity and spiritual identity, the European "living environment", as Edmund Husserl described it. Through the thought of these philosophers, the seminary will examine a series of ideas like peace, freedom, science, philosophy, free speech, all pertaining to a European way of life.

### **FES 772 Gender Roles within the European Space (10 ECTS)**

Equal treatment for women and men is one of the European Union's fundamental values, and one that can be traced back to 1957 when the Treaty of Rome laid down the principle of equal pay. Ever since then, the European Union (EU) has worked to eliminate discrimination and achieve gender equality, in part through legislation. However equal treatment has also been the motivation behind a number of important grass-roots movements, such as the suffragettes' movement in the UK or the more recent FEMEN activism- originally from Ukraine and now based in Paris. After offering a historical survey of these grass-root movements (Duby & Perrot, Offen, Scott), and the EU stance on the issue (Reding's proposals for instance), we investigate how key concepts such as 'gender roles' (Goffman), 'stereotype' (Lippman, Amossy) and 'prejudice' (Allport, Dovidio) structure these gender equality movements. We also consider how the same concepts are constructed, reproduced or challenged in popular cultural artefacts such as advertisements, comic strips, songs, etc. Students will become well informed about official EU legislation and the grass-root movements advocating gender equality through a historical and multi-modal approach. The course encourages students' independent thought and constructive criticism.

### **FES 773 The Europe of Nations (10 ECTS)**

The devotees of a federal Europe recognize today that the Nation-State is a very stable political form that enjoys the confidence of Europeans. The "resistance of the nations" proved to be stronger than expected, to the extent that the folding to protectionism seems today plausible. The "Europe of Nations" storyline is instead proposed, out of the heart of the 19th century and the reflection of Giuseppe Mazzini (1805-1872), who saw in the newly established National-State (république) a hope for the emancipation of nations. The seminary will follow the emergence of the National-State model from Vico (1668-1744), and the "common nature of the nations", to Kant (1724-1804) and Mazzini.

### **FES 774 Hate Speech in the European Space (10 ECTS)**

Research shows that in Europe, hate speech is often not seen as a serious offence. Yet these type of incidents are increasing in most countries, and the use of hate speech against certain groups of people is no longer limited to extremist groups. First, the course investigates the importance and differences within

definitions of this phenomenon amongst European countries, distinguishing overt and covert hate speech. Secondly, it introduces theoretical interpretations of hate speech through the focus on discursive strategies of Othering. Thirdly, it presents methodological tools to investigate hate speech and offers students a possibility to try their research skills.

### **FES 775 European Spiritualities (10 ECTS)**

"And spirituality, my dear Claude? What is politics without spirituality?" Through the work of the Foucault, it appears that the problem of the European identity and politics is the problem of the loss of European spirituality. His seminars and interventions from 1975 to 1984 are essentially a survey on the European liberal spirituality. Through a dynamic discontinuous transformation process, the Greco-Roman and Christian legacies infuse the tradition of the critical thinking and the Enlightenment. The seminary will examine how Western individualism becomes conscious of his own spirituality as an essential orchestration of human autonomy of the European man..

### **FES 776 The Spirit of Nations (10 ECTS)**

Under what conditions did the national-state model that accompanied Europe from triumph to its tragedy operates in today's European and global reality? At a time, when even the most romantic and ardent Europeans, devotees of a federal Europe, recognize that the "resistance of the nations" proved to be much stronger than expected, it is necessary to study the democratic-republican and spiritual-religious roots of the modern nation-state. In an effort to understand the metaphysical roots of the nation-state phenomenon, texts of Vico (1668-1744), Maistre (1753-1821), Fichte (1762-1814), Hegel (1770-1831), Gentile (1875-1944) and Heidegger (1889-1976) shall be studied.

## **PH.D. PROGRAMME IN FRENCH STUDIES OR EUROPEAN STUDIES**

The Ph.D. Programme in French Studies or European Studies provides students with a contemporary and specialised education and gives them the opportunity to acquire scientific expertise. The programme trains students for research and research methodology in compliance with the current requirements of academic knowledge as it is very important to be aware of the new European reality.

Graduated students of this Programme may work in various sectors and institutions of the Republic of Cyprus as well as in the European Union, and practise academic teaching, public and private teaching, provide cultural and linguistic services, public services at international institutions, diplomatic bodies, translation centres, in the tourism and hotel industry, media, multinational companies, NGOs, etc.

### **Terms of Admission**

The date for submission of applications for the doctoral programme (Doctorate level, according to the European Framework 3-5-8) will be announced by the department; the date will apply to all Ph.D. programmes of the Department. Students, who have not yet obtained their Master's degree but will have completed their studies by the 31st of July of the year that they wish to enter the Ph.D. programme, will be eligible. Applicants with a relevant degree in Science must demonstrate proficiency in the French language (writing, reading and speaking skills);

knowledge of additional foreign languages will be considered as an additional qualification.

## Applications and Number of Admissions

The applications must be submitted to the Graduate Programme Coordinator by the date specified by the University. The number of admissions per year is five (5) Ph.D. students.

Applications must include the following:

1. A sample of scholarly writing: short article, a chapter from the Master's thesis, etc..
2. Evidence of proficiency in the Greek, English, French or German language.

All applications will be reviewed by the Graduate Programme Committee of the Department. If the Committee deems it necessary, selected candidates may be invited to a personal interview or teleconference interview. The Committee submits its final selection of candidates to the Department Council for final approval.

## Duration

The doctoral degree must be completed within eight (8) years from the day of admission to the doctoral programme. Doctoral students are encouraged to spend up to one calendar year of study at Universities abroad through an exchange programme.

## Regulations

The doctoral studies are regulated by the Postgraduate Students Regulations of the University of Cyprus.

## Structure

The Ph.D. Programme in European Studies comprises a minimum of 240 ECTS. The distribution of the ECTS in the different stages of the programme is as follows:

	ECTS
<b>Master II</b>	<b>60</b>
FES 650 Research Stage I	30
FES 651 Research Stage II	30
FES 652 Research Stage III	30
FES 653 Research Stage IV	30
FES 655 MT180 (Doctoral Day)	0
FES 660 Comprehensive Exam	0
FES 661 Thesis Proposal	10
FES 670 Writing Stage I	15
FES 671 Writing Stage II	15
FES 680 Thesis Defence	20
<b>Total</b>	<b>240</b>

Each semester is equivalent to 30 ECTS, either at the Research stage or at the Thesis writing stage. However, the student may divide each research stage in two semesters and complete 15 ECTS per semester. Students must

register for each stage of the programme and thus must pay the fees for each semester unless they formally wish to take a leave.

**Research Supervisor:** The doctoral thesis has to be conducted by a supervisor, assigned by the Departmental Board, following a proposal from the Department Graduate Programme Committee, and in consultation with the doctoral student and the proposed Supervisor. The Supervisor monitors the research work of the student and provides all necessary support and guidance.

**Tripartite Committee:** At the end of the second semester of the programme (at the latest), a tripartite research committee is selected, which will monitor the Ph.D. thesis writing. This Committee is chosen during a Department Board meeting on the recommendation of the Department Postgraduate Studies Coordinator and the Ph.D. Supervisor. The Ph.D. Committee consists of: a) The Research Supervisor who is the main coordinator of the Ph.D. thesis; b) Another member of the Department of French and European Studies; c) Another member from either the Department of French and European Studies or from another department of the University of Cyprus, or from another university or research centre, to the extent that this member works in a related discipline. The Committee evaluates the student's progress in his/her Ph.D. studies and defines the examination type of the Comprehensive Exam.

**Courses Attendance:** The Supervisor may request that the Ph.D. candidate attends extra undergraduate and/or postgraduate courses and/or seminars offered by the University of Cyprus, if necessary for the candidate's research.

**Doctoral Day:** Each year in December, the Department organises a compulsory Doctoral Day for all Ph.D. Students, who are required to present their work to their fellow students, as well as the Department's (and other) professors. This annual presentation, based on the My Thesis in 180 Seconds Model, aims to enhance the research work carried out within the Department, and to encourage scientific exchanges. The date of the Doctoral Day is communicated at the beginning of the academic year.

**Comprehensive Exam:** The doctoral student must take a comprehensive examination, preferably by the end of the fourth semester. In case of a failure, the doctoral student must repeat the comprehensive examination by the end of the sixth semester at the latest. In the event of a second failure, the studies are terminated. The Department is responsible for planning the comprehensive exam.

**Thesis Proposal:** The proposal must be submitted no later than two semesters after success on the comprehensive examination and before the expiration date of each course. The presentation of the proposal must be made within the current examination period. In case of a rejection of the thesis proposal, or if modifications are suggested, the Ph.D. candidate must submit a new thesis proposal to the Committee, the latest before the end of the following semester. In the event of a second failure, the studies are terminated. From the moment the thesis proposal has been approved, the candidate starts to write his/her thesis.



**Ph.D. Thesis:** The thesis must be original and should make a significant contribution to the student's chosen field. It should be between 80,000 and 100,000 words - the exact length can be discussed between the candidate and the Research Supervisor.

**Language of the Thesis:** For the Ph.D. in French Studies, the thesis must be written in French. For the Ph.D. in European Studies, the thesis may be written in Greek, English, French or German.

**Thesis Defense:** The thesis defense is open to the public. The Jury is composed of 5 members, selected by the Departmental Board on the recommendations of the Postgraduate Committee and the Research Supervisor. The Jury must be composed of: a) the Tripartite Committee, b) a member of another university or a research center at the university level; c) a member of another department of the University of Cyprus in a related discipline or another university or a research center at the university level. The President of the Jury must be a member of the Department, but not the Research Supervisor.

**Non-Award:** If the Jury votes for non-award of the doctorate, the candidate is allowed to resubmit the thesis for a second and final time, after complying with the recommendations of the Jury. In this case, the whole process is repeated. The Jury must remain the same for the second submission, with the replacement of a member allowed only for a very serious reason.

**Participation in Exchange Programmes:** The Ph.D. candidate may and is encouraged to spend up to one academic year of his/her studies in universities overviews.

### • Fabienne Baider, Professor

Discourse analysis and ideology (political journalistic and advertising discourse, rhetoric of the extremes, social media and fake news), gender studies and European discourses on gender equality and sexual minorities, European discourses on Discrimination / Migration / Ethnic and linguistic minorities, Language Learning and the Emotional Development, Sociolinguistics and FFL: Textbooks and representations, classroom interactions and humor, integration of plurality and diversity.

### • May Chehab, Professor

Comparative literature: Relations between French literature and a) Ancient Greek philosophy, b) Scientific discourse, c) Human rights, d) the Arts, Study of various aspects of the European culture (myth, history, law, cartography, literature, arts, cinema), Projects of European union, from the Fall of Constantinople to the contemporary 28/27 member-States construction, and their future, Europe and the other continents.

### • Panagiotis Christias, Associate Professor

Fields of Competence Philosophy, Politics and Society, Ancient Philosophy, Enlightenment and Modernity, Philosophy and Literature Fields of Specialization, Plato, Paul, and the Theological Political Problem, Plato, Europe, and the Social Sciences, Classical Political Philosophy & Modern Political Thought, History of Philosophy, History of Sociology, Economy and Society, Liberalism.

### • Yiannis E. Ioannou, Professor

French and comparative literature, 19th and 20th centuries:

- Surrealism movement
- The phenomenon of poetic creation
- Odysseas Elytis' work and his relations with French literature and thought
- French poetry from Baudelaire to surrealism
- Political culture

### • Fryni Kakoyianni-Doa, Associate Professor

French and comparative linguistic: Morphology, Syntax (parts of speech and semantic classes, adverbs, utterance, enunciation, syntactic structures of phrases, syntactic grammar, proposition and transformation theories), Lexicology (lexical semantics, polysemy function, lexical classes, taxonomy and vocabulary classification), Phonetics and phonology, Parallel Corpora, Neurolinguistics Didactics: Didactics of French as Foreign Language (pedagogical approaches, grammar, image semiotics, sound and image, new technologies).

### • Christakis Christofi, Lecturer

Arts – Literature – Civilization: France – Europe - Theory and literary, artistic and theatre practices, European studies (arts, literature & civilization), 20th-century French literature (poetry, theatre, novel), Literature, arts and civilization (interdisciplinarity).

## Contact Details

### DEPARTMENT SECRETARIAT

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# Department of Turkish and Middle Eastern Studies

[www.ucy.ac.cy/tms](http://www.ucy.ac.cy/tms)

The Department of Turkish and Middle Eastern Studies offers a Programme of Postgraduate Studies which leads to the degrees of M.A. (Master) and Ph.D.

## MASTER IN TURKISH STUDIES

### Introduction/Aim of the Programme

Turkish Studies comprise the study of the Turkish and other Turkic languages, as well as the history, the literatures and the civilizations of Turkic peoples from the 8th century AD to the present day. The various fields of Turkish Studies are: Turkology or Turkic Studies, which deal with the whole spectrum of Turkic languages and literatures; Ottoman Studies, which focus on the linguistic varieties, the history and the civilization of the Ottoman Empire (14th-20th century); Modern Turkish Studies, which deal with the politics, the literature, the economy and the society of Turkey in the 20th century; Islamic Studies, which are an integral part of Ottoman and Modern Turkish Studies and are related to Middle Eastern Studies, which cover the study of the Middle Eastern peoples (particularly Arab and Iranian), their languages and civilizations. Moreover, Turkish Studies also include the study of the Balkan peoples, in relation to the Ottoman and Turkish world.

Turkish Studies at the University of Cyprus cover the majority of the above-mentioned fields of Turkish and Middle Eastern Studies. There is particular thematic emphasis on the context of the island and especially the Turkish-Cypriot community, as well as the broader region, the interests and orientations of the staff and the academic and professional prospects of the graduates. Members of the academic staff in the Department of Turkish and Middle Eastern Studies participate in the Master's Programme as instructors and academic advisors, while sometimes visiting professors will also participate in the Programme.

The aim of the Master's Programme is to equip students with the knowledge and skills necessary in order to be able to work independently in regard to the language, history, civilization, literature and politics of the Ottoman Empire, Turkey and subjects related to the Turkish-Cypriot community. The specialization courses will help students improve their linguistic skills, while gaining in-depth knowledge of one particular field. This specialization will determine the subject of their original Master's Thesis.

### Programme Organization

The Master's Programme requires the completion of 120 ECTS and consists of four elements. The Master degree requires the successful completion of all four elements of the Programme:

- Courses.
- Attending the Department's Lectures and Graduate Seminars.
- Participation in the Colloquium.
- Writing a Master's Thesis.

**Courses:** Three introductory courses, three Turkish Texts Courses – Reading and Dialogue and six courses covering all scholarly fields of Turkish Studies. The three introductory courses focus on the primary and secondary source materials and on the methodology appropriate to the analysis of various fields of Turkish Studies, the three Turkish Texts Courses – Reading and Dialogue concern the study of texts related with the courses taught during the semester. The other courses are specialization courses in different fields of Turkish Studies. The specialization courses offered each semester will be decided by the Department Board.

**Attendance at Lectures and Seminars:** Attendance at the lectures that comprise the Department of Turkish and Middle Eastern Studies Lecture Series is mandatory. Attendance at the Graduate Seminar Series, held throughout the course of the semester, is also required.

**Participation in the Colloquium:** All candidates for the Master's degree must present a paper, which will be on a topic of their choice and based on their own research. The Colloquium will take place in the fourth semester of study and the student's topic should be decided in collaboration with his/her Research Advisor.

**Master's Thesis:** The thesis must be at least 15.000 words long. The completion and presentation of the thesis takes place after the completion of the first three semesters.

### Criteria for Acceptance

Graduate students are admitted to the Programme in accordance with the criteria outlined in the General Rules of Postgraduate Studies. Admission to the Master's Programme requires a Bachelor's degree in either Turkish Studies, Cultural Studies, or a subject in the Humanities or the Social Sciences. The degree must be from an accredited university. Admission may require a personal interview or additional relevant testing, at the discretion of the Department.

Classes will be taught in one of three languages, Greek, Turkish or English, while course materials will include texts in Turkish as well as other languages. Candidates must know Turkish well enough to study texts in Turkish at an

academic level. Borderline cases will be examined during the interview. The minimum requirement is a certificate of coursework in the Turkish language corresponding to 50 ECTS. If the Department deems it necessary, there may be a special examination to test the applicant's proficiency in the Turkish language. Knowledge of at least one foreign language (other than Turkish) is essential. In case that language is not English, the student must at least have the basic competence to respond to texts in English. Knowledge of additional languages will be considered an additional qualification.

Graduates of Greek universities and of the University of Cyprus must have a minimum grade of 6.5/10. The equivalent grade is also required from graduates of other universities.

The Department's Graduate Studies Committee evaluates applications, interviews candidates when necessary and recommends to the Department Board a list of proposed candidates to the Programme. The final decision rests with the Department Board.

## Rules of Study

Postgraduate studies are regulated by the General Rules of Postgraduate Studies of the University of Cyprus and the Internal Rules of Graduate Studies of the Department of Turkish and Middle Eastern Studies.

## Requirements for the Master Degree

All students in the Master's Programme will be assigned an Academic Advisor. This may be the Graduate Programme Coordinator or a member of the Department's Board of Graduate Studies (in the absence of the Coordinator). Students work closely with their Academic Advisor throughout the entire programme of studies.

Full-time attendance for at least four semesters and completion of the thesis by the eighth semester following initial enrollment are essential.

Successful completion of 120 ECTS is required. These are distributed as follows:

	ECTS
Three Introductory Courses (3x8)	24
Six Specialization Courses (6x8)	48
Three Turkish Texts Courses Reading and Dialogue (3X3)	9
Attendance at Lectures and Seminars (4x1)	4
Participation in the Colloquium	2
Master's Thesis	33
<b>Total</b>	<b>120</b>

For workload equivalents, the General Rules of Postgraduate Studies of the University of Cyprus apply; 1 ECTS represents 25 to 30 hours of student workload.

## Programme of Studies

	ECTS
<b>First Semester</b>	
Modernity and Historical Evolution in Turkey	8
Issues in Turkish Linguistics	8
Turkish Literature and Social Issues after 1980	8
Turkish Texts – Reading and Dialogue I	3
Attendance at Lectures and Seminars I	1
<b>Total</b>	<b>28</b>
<b>Second Semester</b>	
Specialization Course	8
Specialization Course	8
Specialization Course	8
Turkish Texts – Reading and Dialogue II	3
Attendance at Lectures and Seminars II	1
<b>Total</b>	<b>28</b>
<b>Third Semester</b>	
Specialization Course	8
Specialization Course	8
Turkish Texts – Reading and Dialogue III	3
Attendance at Lectures and Seminar III	1
Master's Thesis Writing I	11
<b>Total</b>	<b>31</b>
<b>Fourth Semester</b>	
Specialization Course	8
Attendance at Lectures and Seminars IV	1
Participation in the Colloquium	2
Master's Thesis Writing II	22
<b>Total</b>	<b>33</b>
<b>Grand Total</b>	<b>120</b>

## Courses Description

### INTRODUCTORY COURSES [TUM 601-604]

#### TOM 601 Modernity and Historical Evolution in Turkey (8 ECTS)

The aim of this course is to analyse the complex and multifaceted process of Turkish modernity. Beginning with the Ottoman attempt to form a modern state and the ideologies that existed in the Ottoman Empire during the second half of the nineteenth century, this course analyses the transition of the Ottoman Empire into a modern state, its attempts for secularization and the Tanzimat reforms. The course focuses on the Late Ottoman Period, the emergence of Turkish nationalism and the process of formation of the Turkish nation state.

#### TOM 602 Issues in Turkish Linguistics (8 ECTS)

This course gives a survey of Turkish linguistics, starting with the concept of related languages (language families), the criteria for their classification, and the inclusion of Modern Turkish within the Turkic language family. From a typological point of view, the term 'Turkic' represents the agglutinative type of languages. The course examines how agglutinative language systems function, how they interact with typologically different languages, like, for example, the Indo-European (such as Iranian, Armenian, Greek etc.) and the Semitic (Arabic, Aramaic) language families. Turkish



is stratified into various spoken varieties, such as sociolects (vertical stratification into social registers) and dialects (horizontal division into geographic varieties). The spoken varieties of both categories may display strong influences of genetically unrelated languages, such as the local and neighboring (minority) languages of past and present. Many of these aspects of diversification and contact-influenced linguistic developments can also be observed in Cyprus. The course will introduce the current linguistic terminology, methodology, reference works, and sources of linguistic Turkology, sociolinguistics, and dialectology, which are required to deal with the description and analysis of various issues in Turkish linguistics.

#### **TUM 603 Turkish Literature and Social Issues after 1980 (8 ECTS)**

This course is a continuation of the undergraduate course TOM 342 "Literature and Society in Turkey". Turkish society has changed a lot since the mid-1980s. On the one hand, a liberal economic policy was pursued during this period, in order to connect the Turkish economy to the world market. On the other hand, the influence of conservative forces on political and cultural life has increased, while previously influential ideologies, such as Marxism and ultra-nationalism, have lost their influence. In the area of tension between these developments, movements, such as feminism and Islamism, have gained importance and new movements, such as environmentalism, human rights activism or LGBT have emerged. Non-Turkish and/or Non-Muslim communities in Turkey became more visible and have become more active culturally and politically. The aim of this course is to examine more deeply how these developments are treated in contemporary Turkish literature. In addition to reading original texts, we will discuss the social, cultural and political circumstances, under which these texts were produced, and we will get acquainted with new academic works on the subject.

### **SPECIALIZATION COURSES**

#### **[TUM 610 – 700 and TUM 701 - 800]**

These courses focus on different areas of Turkish Studies, for example, Linguistics, Literature, History and Politics. Each course covers the analysis and presentation of specialized topics in one of the above-mentioned fields.

### **OTTOMAN HISTORY COURSES [TUM 610-650]**

#### **TUM 610 Historians and Chroniclers of Ottoman History (8 ECTS)**

This course focuses on the study of the texts of historians and chroniclers of Ottoman history. Students will study, in the original and/or in translation, extended extracts from the work of authors from various periods of Ottoman history from the 15th until the 19th century, like Aşıkpaşazade, Neşri, Kemalpaşazade, Mustafa Ali, Mustafa Selânikî, Kâtib Çelebi, İbrahim Peçevi, Mustafa Naima, Ahmed Resmi Efendi and Ahmed Cevdet Pasha. Based on the texts themselves, as well as on contemporary bibliography, we will discuss the historical framework that produced these works, their conception of history and of the Ottoman dynasty, as well as their attitudes towards topics, like the formation of the Ottoman state and the transformation of its institutions.

#### **TUM 611 Ottoman Political Thought during the Tanzimat (8 ECTS)**

The aim of this course is to analyze the major ideologies and the policies applied in the Ottoman state during the period of the Tanzimat reforms. The attempts to transition to an Ottoman national monarchy, as well as the efforts to create a modern type of state, form the main axis of the study of the period. The political thought of the Ottomans, as manifested in specific decrees of the Sublime Porte, as well as in other documents from

this period, combined with the efforts for reforms in the political administration of the empire, are examined in depth, in order to better understand the political thought and realities of the period of reforms.

#### **TUM 612 Ottoman Istanbul (8 ECTS)**

This course focuses on the study of Istanbul as an Ottoman city. There will be a particular emphasis on the city's significance in the Ottoman Empire, as an administrative as well as an economic and cultural center. Through Ottoman sources of the period, as well as recent studies, we will study in depth various aspects of the history of Istanbul, like the transformation of the Byzantine city into an Ottoman one in the 15th century, urban growth and expansion, the city's image at different times, e.g., during the Tulip Period, and the attempts at modernization in the 19th century.

#### **TUM 613 Ottoman Empire: Reforms and Modernity (8 ECTS)**

This course focuses on the question of modernity and the attempts of the Sublime Porte to form a new type of state in the period of the Ottoman reforms of the 19th century. The main axes of analysis will be the efforts of the Ottoman state to create a new administrative model, the reorganization of the basic structures, the inclusion of non-Muslims in this new model and the new conditions that made possible the emergence of new ideologies in the Ottoman lands. The course will be conducted in the form of seminars, using archival material and secondary literature.

#### **TUM 614 Communal Organisation in the Ottoman State (8 ECTS)**

The aim of the course is to analyze the community organization in the Ottoman state, both during the classical period of its history (until the sixteenth century) and during the long period of modifications (until the eighteenth century) and the reforms of the nineteenth century. The aim is to understand the functioning of the Community system in the Ottoman state, with emphasis on developments concerning the Orthodox community. As far as the Ottoman reforms and community organization are concerned, the course analyzes the modifications in the relationship between the communities and the central state, as well as the internal organization of the communities.

#### **TUM 615 Continuities and Discontinuities in the Transition from Ottoman to Colonial Space (8 ECTS)**

This course will analyze the transition from Ottoman to Colonial Space, using the case of Cyprus as an example. The Ottoman administrative model, as it was manifested on the island, as well as the administrative structures that were subsequently changed after the reforms of the 19th century, are analyzed and compared with the structures created when the administration of Cyprus was transferred to Britain and a new administrative model was imposed. The purpose is to study continuity and discontinuity with respect to the two administrative models. The course will be conducted in the form of seminars, using archival material and secondary literature.

#### **TUM 616 Embassies and Consulates in the Ottoman State (8 ECTS)**

This course will analyze the operation of embassies and consulates in the Ottoman Empire during the 18th and 19th centuries. The archival material of the consulates, in conjunction with archival material of the Ottoman administration, provide a wealth of information about the functions of consulates, their importance for the countries they represented, the Ottoman administration and the peoples living in the areas in which they operated. The course will be conducted in the form of seminars, using archival material and secondary literature.

## **COURSES ON THE HISTORY/POLITICS OF TURKEY [TUM 651-700]**

### **TUM 651 The Kurdish Question in Turkey (8 ECTS)**

The Kurdish question is a significant problem of the Turkish Republic. Some measures for secularization, modernization and Turkification met with resistance from the Kurds (and others) and led to uprisings, which were suppressed. From the 1960s onwards, we may observe, on the one hand, a process of assimilation, even inclusion of Kurds in the Turkish state and society. On the other hand, the Kurds are demanding more rights and greater participation in social developments in Turkey.

### **TUM 652 Ethnic and Religious Minorities in Turkey (8 ECTS)**

According to the official view, the term "minorities" in Turkey means only the non-Muslim minorities of Armenians, Greeks and Jews. This view, which is based on the Ottoman millet system, ignores Muslim groups, such as the Kurds, Laz and Circassians. Next to the Sunni majority, there is a significant minority of Alawites. This course aims to deepen the student's knowledge of the religious and ethnic mosaic that composes modern Turkey.

### **TUM 653 Atatürk: Elements of a Biography (8 ECTS)**

The founder of modern Turkey is one of the most fascinating figures of the 20th century. After the collapse of the Ottoman Empire, he imposed the westernization of the country almost single-handedly. His legacy continues to shape Turkey even today. Turkey's relationship with Kemalism plays a decisive role in the process of its accession to the European Union. The course follows the itinerary of the "Father of the Turks", from his beginnings as a military officer to his rise as an authoritarian reformer and politician.

### **TUM 654 Political Economy of Turkey (8 ECTS)**

A middle – income country with a fragile democracy, Turkey, has been shaped by much the same dynamics and constraints as other countries in the semi-periphery of global capitalism. Major interacting forces have determined its evolutionary fortunes. Different socio-political coalitions have underpinned different economic policy regimes in different periods. External market, economic and policy forces have produced powerful dynamics upon Turkey's economic choices and strategies. Frequent economic crises have led to revisions in policy regimes and socio-political coalitions and also inspired initiatives for institutional reform. Based on the above framework this course offers a detailed and analytical introduction to the dynamics and some enduring problems of the Turkish economy from a political economy perspective.

### **TUM 656 Turkish Modernity and its Dilemmas. Kemalism, Tradition and Religion (8 ECTS)**

In this course, students will research and analyze modernity in relation to the modern Turkish state, its peculiarities and diversity. Kemalism will be analyzed in relation to modernity, which it imposes, while tradition and religion will be analyzed in terms of their relationship to and their impact on Turkish modernity.

### **TUM 657 Greece, Turkey, Cyprus. The History of a Complex Relationship (8 ECTS)**

This course focuses on the complexity of the relationship between Greece, Turkey and Cyprus, as well as the changes in this relationship over time. We will consider Greek-Turkish relations from the time of the establishment of the Turkish state to the present, as well as how Cyprus features as an integral part

of these relations. The complexity of the 20th century - in relation to international developments, developments between Greece and Turkey and developments in Cyprus - is the basic framework of analysis.

### **TUM 658 Collective Memory and National Identity in Turkey (8 ECTS)**

The subject of the course is the question of national identity in Turkey over the years, since the establishment of the Turkish state, connected with developments in relation to the formation of a collective memory in Turkish society. In the same context, research focuses on minority groups in the Turkish state and the elements of diversity they express.

### **TUM 659 Political and Historical Themes and Issues of the Turkish Cypriot Community (8 ECTS)**

This course examines themes and issues in the political life and history of the Turkish Cypriot community. It examines the history of the Turkish Cypriot community from the beginning of the British Colonial administration until the Independence of the Republic of Cyprus, as well as the developments in the sixties and after the Turkish Invasion in 1974. In parallel with the historical developments, it focuses on political developments such as the Rise of Turkish Nationalism, Political Movements and Organizations, and the Civil Society.

## **LITERATURE COURSES [TUM 701-750]**

### **TUM 701 Literary and Historical Dimensions of First-Person Narratives in Turkish Literature (8 ECTS)**

This course focuses on texts, in which Turkish writers of the 19th to 21st centuries write about their own or a fictitious life. The differences between the main genres of autobiographical texts, such as autobiography, letters, memoirs, and autobiographical novel will be examined in the Turkish context and will be discussed in a comparative perspective with Western literature.

### **TUM 702 Ottoman Travel Literature (8 ECTS)**

Ottoman travel reports were until the 17th century mostly integrated into texts such as historical and geographical works, reports about military campaigns or pilgrimage narratives. In this course, students will be introduced to examples of Ottoman travel writing from the 17th century up to the early 20th century. We will read and analyze selected passages from well-known Ottoman travelogues, such as Evliya Celebi's Seyahatname from the 17th century, Yirmisekiz Çelebizade Mehmed Efendi's Sefaretname from the 18th century and Ahmed Midhat's report of his travel to Europe from the late 19th century.

### **TUM 703 "Writing about the Nation": Turkish Authors as Creators of a New Ideology (8 ECTS)**

In this course, students will read and analyze texts written during the period of transition from the Ottoman Empire to the modern Turkish Republic, such as those of Ziya Gökalp and Ömer Seyfeddin among others. The aim of the course is to study and discuss the role of contemporary Turkish literature in the emergence of the Turkish nation.

### **TUM 704 Non-Turkish Authors Writing in the Turkish Language (8 ECTS)**

In this course, students will be offered an overview of the history of the literature of non-Turkish and/or non-Muslim authors who write in Turkish. In the context of this course, we will read and analyze texts by Kurdish, Armenian, Greek and Jewish writers of the 19th, 20th and 21st centuries.

### **TUM 705 Culture of Memory in Turkish Literature (8 ECTS)**

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This course focuses on Turkish literature as a medium of cultural memory. In the context of the course, students will study and discuss Turkish texts from various literary genres and historical periods (as novels, autobiographical texts, poetry, theater plays) with regard to their qualities as formers, carriers and preservers of Turkish cultural memory. Every student will prepare a project (presentation in class and written paper) on a literary memory text of his or her choice. Works from Turkish and international memory studies will provide the theoretical framework of the course.

### **TUM 706 The Historical Novel in Turkish Literature (8 ECTS)**

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Over the last two decades, the historical novel (*tarihi roman*/*tarihsel roman*) has been one of the main types of Turkish Literature. This course studies, analyzes and discusses theoretical texts concerning the emergence of a “new historical novel” in Turkey and the ongoing discussion around the theme of “History and Literature”. In the context of the course, we will study and analyze historical novels from different periods.

### **TUM 707 Generic and Thematic Characteristics of Turkish-Cypriot Literature (8 ECTS)**

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Literature written in the Turkish language has been produced in Cyprus since the 16th century. But only in the late 19th century did this literature begin to diverge significantly from the literary developments in (Ottoman, and later Republican) Turkey. In this seminar, the specific developments in Turkish-Cypriot literature since the British colonization of the island in 1878 will be examined. While they first were strongly influenced by the literary developments in Turkey (Tanzimat literature, national literature, poetry movements like “Garip” and the “Second New”), they eventually found entirely new themes and forms of expression (the “74 generation” and later developments).

## **LINGUISTICS COURSES [TUM 751-800]**

### **TOM 751 Comparative Turkology (8 ECTS)**

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The seminar presents characteristic features of the Turkic language family/branch, with an emphasis on structural similarities, Intra-Turkic developments and contact-induced change from a comparative perspective, based on written or oral texts (or other media) in the target language, and on articles/sources reflecting current trends and discussions of these topics in the field of Turkology.

### **TOM 752 Historical Linguistic (8 ECTS)**

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The seminar deals with historical aspects of Turkic languages. The instructor chooses one of the following topics, or one topic across several thematic groups, such as: Older forms of the languages of the Oghuz group (Pre-Ottoman/Old Anatolian Turkic, Ottoman Turkish, Azeri etc.) or historical stages of the Turkish language used by minorities, as reflected in the Karamanlidika; the Turkish language reform and the making of the lexicon; historical grammar.

### **TOM 753 Methods in Analyzing Spoken Language (8 ECTS)**

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The seminar deals with the analysis of spoken varieties of Turkish, such as regional varieties/dialects, or social varieties/registers. It offers a survey of current methods applied in dialectology, socio-linguistics and/or contact linguistics. Students learn how to collect data, how to handle instruments applying to the analysis of spoken varieties (such as acoustic phonetics/the reading of spectrograms, notations in the IPA-alphabet, inter-linear

morpheme analysis), and how to interpret dialect markers, stigmatized features, and structural changes reflecting language contact influence. The regional focus is on Anatolian dialects and Cyprus Turkish, as well as constellations of Turkish in contact with Greek, Iranian, Slavic, Armenian, etc.

### **TUM 754 Didactics/Applied Grammar (8 ECTS)**

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The seminar gives an overview of current trends and methods in the field of language teaching/Teaching Turkish as a Foreign Language, and didactics. It presents concepts of language teaching, applied grammar and didactics, and the use of teaching materials (textbooks, grammars, media) in class.

### **TUM 755 Turkish-Greek Literary Translation (8 ECTS)**

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From a linguistic point of view, translations from Turkish into Greek present various significant problems. These partly originate from different semantic fields in lexicon and idiomatic expressions, structural or typological differences between the underlying language systems, different systems of tense, aspect and mood, as well as diametrically opposed structures in syntax (hypotactic vs. paratactic structures). These differences will be discussed comparing examples of Turkish literary texts and their translations into Greek.

### **TUM 756 Contemporary Turkic Languages and Literatures (8 ECTS)**

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This course offers an overview of developments in the modern Turkic literatures of Turkic-speaking peoples outside of Turkey, including types of oral literature and their formal characteristics. Using literary texts as a primary source, we analyze the various forms of language use, the development of independent national identities, and reflections of Islamic identity, as they appear in the national literatures of the “new” Turkic Republics, such as Azerbaijan, Uzbekistan and Turkmenistan. Since the early 1990s, most texts are available in a reformed Latin alphabet or in an alphabet based on the Latin alphabet of Turkey.

## Doctoral Programme

The main purpose of the Doctoral Programme is the research for, and composition of, an original academic work on a subject which belongs generally to the subject of Turkish Studies. In case the candidate has not obtained a Master's degree in a relevant subject, the Doctoral Programme also contains taught classes at postgraduate level on the specific field of Turkish Studies in which the subject of the dissertation falls. If the doctoral candidate already possesses a Master's degree, which the Department judges to be an adequate preparation for the proposed subject of the doctoral dissertation, then the student is exempted from the taught classes.

Taught classes are followed by the research stage of the dissertation and then by the writing stage. The credits are allocated as follows:

### Analytical Programme for Master Holders

Semester	Stage (research, etc.)	ECTS
	Master credit	60
1st	TOM 891 Research Level I	30
2nd	TOM 892 Research Level II	30
3rd	TOM 893 Research Level III	30
4th	TOM 894 Research Level IV	30
4th	TOM 500 Comprehensive Examination	0
5th	TOM 895 Writing Stage I	30
6th	TOM 896 Writing Stage II	30
6th	TOM 877 Presentation of Final Research Proposal	0
<b>Total</b>		<b>240</b>

### Analytical Programme for Non Master Holders

Semester	Stage (research, etc.)	ECTS
1st	Taught Classes	30
2nd	Taught Classes	30
3rd	TOM 891 Research Level I	30
4th	TOM 892 Research Level II	30
5th	TOM 893 Research Level III	30
6th	TOM 894 Research Level IV	30
6th	TOM 500 Comprehensive Examination	0
7th	TOM 895 Writing Stage I	30
7th	TOM 896 Writing Stage II	30
8th	TOM 877 Presentation of Final Research Proposal	0
<b>Total</b>		<b>240</b>

Students can graduate by the end of the 6th semester (for M.A. holders) or the 8th semester (for non-holders of a Master) of their studies, if they have completed the required credits (240 ECTS) and have deposited and supported their thesis in front of the Postgraduate Committee. Otherwise, students will still have to be

enrolled in the next Writing levels, until they are ready to submit their dissertation (the study duration must not exceed the 16 semesters).

## Research Stage

The Research Stage consists of the following:

- Submission of a research proposal, which must include a description of the sources proposed and the methodology to be employed.
- Appointment of a Supervisor for each student and Dissertation Committee by the Department.
- Comprehensive Examination (written and oral examination). The basic fields of Turkish Studies, into one of which the dissertation's subject must fall, are the following: Ottoman History, History and Politics of the Turkish Republic, Ottoman Literature, Contemporary Turkish Literature, Turkish/Turkic Linguistics.

## Presentation of the Final Research Proposal

According to the Regulations of the University of Cyprus, each postgraduate student (Ph.D. level) must present his/her research proposal in front of the three members of the Advisory Committee.

## Writing Stage and Examination of Dissertation

The dissertation is examined by a five-member Committee, whose members are outlined in the Admissions and Attendance Regulations – Application Requirements.

## Acceptance in the Doctoral Programme

A. Candidates, who already have a Master degree, must submit in their application a brief dissertation proposal, which includes the sources to be consulted and the proposed methodology. Candidates must know a foreign language, preferably English. A second foreign language would be considered an advantage.

B. Candidates, who do not already possess a Master's degree, must have a first degree either in Turkish Studies or in other fields of the Humanities, as described in the Regulations for Acceptance in the Master's programme. Candidates must in any case, be competent in Turkish.

For more information, please refer to the Attendance Regulations of Postgraduate Studies or consult the Graduate School (tel.: 22894021/44) or the Department's Secretariat (tel.: 22893950) or web page.



• **Niyazi Kızılyürek, Professor**  
(unpaid leave 2019-2023)

Political History of Cyprus, Political History of Modern Turkey, Nationalism.

• **Christiane Bulut, Associate Professor**

Spoken varieties of Turkic in Iran and Iraq (Empirical Linguistics), Linguistic Contacts, Old Turkish/Ottoman, History of the Eastern Califate, Ottoman/Turkish Literature, Turkic Dialects, Minority Languages and Dialects in Cyprus.

• **Michalis N. Michael, Associate Professor**

History of the Ottoman Empire and its Institutions; History of Cyprus in the Ottoman Period, with special emphasis on the status and role of the Church of Cyprus; The Transition from Ottoman to British Colonial Rule, especially in relation to the status and role of the Orthodox Church; Analysis of Post-Ottoman Cypriot Historiography on the Ottoman Period.

• **Börte Sagaster, Associate Professor**

The Transition from Late Ottoman to Modern Turkish Literature; Modern Turkish Literature; Identity and Society in Turkish Literature; Memoirs in Turkish Literature.

• **Theocharis Stavrides, Associate Professor**

Early Ottoman History; Ottoman Civilization; History of Cyprus in the Ottoman Period, with special emphasis on Society and Culture.

• **Gulshen Sakhatova, Assistant Professor**

Mood and modality in general linguistics, Verb system of Turkic languages, Modality in Turkic languages, Spoken Turkish, Turkish as a Foreign Language: Learning and Teaching, Turkic in written monuments.

• **Nikos Moudouros, Lecturer**

Contemporary history of political Islam in Turkey, political economy in Turkey, contemporary political thought as well as the transformation of the relations between Turkey and the Turkish Cypriot community. He is teaching courses on issues like Islam in Turkey, Turkish foreign policy, social changes in Turkey and the development of the Turkish Cypriot community.

• **Ahmet Yikik, Lecturer**

Modern Turkish literature since the Westernization period (Tanzimat) in the 19th century, Non-Muslims writing in Turkish, Genre developments, Literary Theory and Sociology of Literature, Ottoman/Turkish literature in Cyprus from the 19th century to the present.

## Contact Details

### PROGRAMME COORDINATOR

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# Faculty of LETTERS



## DEPARTMENTS

Byzantine and  
Modern Greek Studies

Classics and Philosophy

History and Archaeology



# Department of Byzantine and Modern Greek Studies

www.ucy.ac.cy/bmg

The Department of Byzantine and Modern Greek Studies covers the fields of Byzantine Philology, Modern Greek Studies, Comparative Literature, Theory of Literature and Linguistics.

The Department offers:

- A Postgraduate Programme in Modern Greek Studies, and
- A Postgraduate Programme in Byzantine Studies (in collaboration with the Department of History and Archaeology)

## Introduction

Both postgraduate programmes of the Department are offered at two levels: a Master Degree and a Ph.D. Degree. The main focus of the postgraduate programme in Modern Greek Studies is the in-depth examination of Modern Greek literature texts from the 11th century to the present. In this context, the programme offers seminars in a number of related areas (i.e. comparative literature, theory of literature, linguistics, history of art and theatre studies), with the aim of encouraging interdisciplinary approaches. The Interdepartmental Postgraduate Programme in Byzantine Studies similarly aims at promoting an interdisciplinary approach in the broader field of Byzantine Studies.

The Postgraduate Programme in Modern Greek Studies, at the Master and Ph.D. levels, was launched in 1999. The Interdepartmental Programme in Byzantine Studies at the level of Master Degree started in September 2007.

Among the Department's immediate priorities are: (a) to develop postgraduate programmes in all the academic fields of the Department and (b) to establish stronger links with postgraduate programmes of other departments of the University of Cyprus, as well as with other European universities.

To this end and in order to promote interdisciplinary research in the framework of postgraduate programmes, the Department framework runs exchange programmes with important departments in other universities.

## INTERDEPARTMENTAL POSTGRADUATE PROGRAMME IN BYZANTINE STUDIES AND THE LATIN EAST

(See relevant pages 168-175)

## MODERN GREEK STUDIES

The Programme at both levels (M.A. and Ph.D.) offers students the following specialisations:

- (a) History of Literature - Grammatology (critical editions of Modern Greek literary texts, Metrics, archival research, etc.).
- (b) Theory of Literature (analyses and explanatory approaches to texts on the basis of generally established theoretical principles and types, e.g.

literary genres, the rhetorical and narrative organisation of literary texts, the readers' reception of the text, etc.).

- (c) Literary Criticism (history and theoretical principles of Modern Greek literary criticism).
- (d) Comparative Literature (approaches based on comparing national literatures in terms of concepts such as influence, the readers' reception of the text, analogy, etc.).

## A. M.A. in Modern Greek Studies Programme

### Number of Students

Twelve, including Ph.D. students.

### Admission Requirements

1. B.A. in Modern Greek Literature or related subject (upper second-class honours minimum) and detailed list of courses taken during undergraduate studies.
2. Brief Curriculum Vitae and a report on academic and research interests.
3. Two reference letters.
4. Written or oral examination in:
  - a) Modern Greek Literature, b) one foreign language.
5. Interview with the Programme's Postgraduate Committee.

### Duration

Four semesters for the full-time programme. With the approval of the Supervisor, the course duration may extend to four more semesters.

### Academic Requirements

1. Completion of 120 ECTS, of which:
  - 78 ECTS are obtained through successful attendance of the postgraduate seminars (13 ECTS correspond to each seminar).
  - 30 ECTS with the completion of the dissertation.
  - 12 ECTS by attending the programme's Colloquium (lecture series).

Regarding the Colloquium, see point 4 in the Structure of the Programme.

2. Viva on the M.A. dissertation.

## Analytical Programme of Studies

	ECTS
<b>First Semester</b>	
Completion of two postgraduate Seminars	26
Colloquium I	4
<b>Second Semester</b>	
Completion of two postgraduate Seminars	26
Colloquium II	4
<b>Third Semester</b>	
Completion of two postgraduate Seminars	26
Colloquium III	4
<b>Fourth Semester</b>	
Writing of the M.A. dissertation under supervision and defending it before a three-member examination committee	30
Colloquium IV	0

## Structure

1. Postgraduate seminars cover five periods:

### A. 11<sup>th</sup>–14<sup>th</sup> centuries (codes: BMG 640-650)

This unit examines the vernacular production of the transition period, from the end of the Byzantine era to the rise of Modern Greek Literature. Topics of interest include: the evolution of the Greek language, but mainly the Literaricity of the poetic-epic, and satiric production of the 11<sup>th</sup>–12<sup>th</sup> c. (Digenis Akritas, Ptochoprodromos); allegoric poetry (logos parigoritikos, istoria ton tetrapodon zoon); the romances (Livistros and Rhodamne, Kallimachos and Chrysoroi, Imperios and Margarona) and other historical narratives (istoria Velissariou, diegesis Achilleos). Acritic songs are also examined while special attention is given to the early period of Cretan literature, and poets such as Stephanos Sachlikis and Marinos Falieros.

### B. 15<sup>th</sup>–17<sup>th</sup> centuries (codes: BMG 651-660)

This unit begins with the Fall of Constantinople and ends with the Fall of Crete (1669). It examines literary production in those regions of Greece under Latin and Franc occupation. Topics of interest include: The medieval-renaissance literature of Cyprus (from the chronicle of Leontios Machairas to rimes agapis) and the literature Production of Crete from the early renaissance (Bergadis' apokopos) to the period of the "Cretan bloom" (Erotokritos, thysia to Avraam, Erofilo, etc.). This period also includes the examination of medieval folk songs (Arodafnousa, rizitika, etc.).

### C. 18<sup>th</sup>–19<sup>th</sup> centuries (codes: BMG 661-670)

This unit examines the texts of the Greek Enlightenment (1750-1821), paying particular attention to the prose writings of E. Voulgaris, R. Ferraios, I. Moisioudax, D. Katartzis, A. Koraes, and the poetic production of I. Vilaras and A. Christopoulos. This unit also includes folk (Kleptic) poetry, the school of the ionian islands (1800-1860), the poetic works of A. Kalvos, D. Solomos and A. Valaoritis, the first school of athens (1830-1880), the poetic production of the second athenian school (generation of the 1880s) and especially the work of K. Palamas, the historical novel, the first period in the production of prose narratives (1830-1880), and, finally, the ethnographic short stories of the 1880s-1900s (Papadiamantis, Vizyenos, Karkavitsas). This unit also includes the study of medieval cypriot demotic songs ("Arodaphnousa" etc.).

### D. 20<sup>th</sup>–21<sup>st</sup> centuries (codes: BMG 671-680)

This unit examines the literary innovations of the 1920s and 1930s, as reflected in the works of representative authors of the relevant generations. It also examines the post-war production, up to the present day. Topics of special interest include: Interwar fiction (D. Voutiras, K. Chatzopoulos, K. Theotokis, K. Paroritis, etc.), the poetic work of A. Sikelianos, N. Kazantzakis, and the 'Generation of the 1920s' (K. Karyotakis, T. Agras, N. Lapathiotis, etc.), the poetry of C.P. Cavafy, Greek modernism (Seferis, Elytis, Ritsos, Montis), Greek surrealism (N. Kalas, A. Empeirikos, N. Engonopoulos), the novels of the 1930s generation, post-war poetry (T. Sinopoulos, M. Anagnostakis, M. Sachtouris, G. Pavlopoulos, T. Pieridis, P. Michanikos and others), post-war prose (S. Tsirkas, D. Hatzis, Y. Ioannou, etc.), contemporary poetry (L. Poullos, M. Ganas, K. Charalampides) and prose (S. Dimitriou, R. Galanaki, V. Gourogiannis).

### E. Methodology (codes: BMG 681-690)

This unit examines issues that relate to the methodological field (historiography-theory-criticism-comparative literature) of literary practices. The seminars in this unit primarily explore the theories and the methods hitherto applied to the interpretation and analysis of literary texts, placing particular emphasis on their application to the study of Modern Greek literary texts.

- Students may attend seminars in each period depending on the offered seminars; however no more than three seminars in a single unit may be selected.
- In consultation with the director of the postgraduate programme, students may attend seminars offered in other postgraduate programmes within the Department or within the Faculty of Letters.
- In parallel with the seminars, the Department runs regular research meetings (Colloquia), where members of staff, Ph.D. students and invited speakers present their research. Attendance and participation in the Colloquium are mandatory.

5. The M.A. dissertation in Modern Greek Studies carries the course code BMG 695.

## **B) Ph.D. in Modern Greek Studies Programme**

### **Duration**

The course duration may not exceed eight academic years. The Ph.D. dissertation may be submitted only after the sixth semester from the start of the programme.

### **Admission Requirements**

The admission requirements for the Ph.D. programmes are the same as those for the Master's programmes (see relevant paragraph above). In addition, the Department requires the following:

1. Postgraduate Degree (M.A./D.E.A. etc.) in Modern Greek Studies.
2. A copy of M.A. Dissertation.
3. Examination in one foreign language (where this is deemed necessary).

### **Academic Requirements**

1. A comprehensive oral examination before a three-member examination committee, prior to the seventh semester. Candidates are examined in grammatological, methodological and theoretical subjects.
2. Presentation and approval of the dissertation proposal.
3. Attendance of the Departmental Colloquia.
4. Submission and approval of the Ph.D. dissertation.

For more information on the academic requirements, see the Admission and Attendance Regulations – Application Requirements or, consult the Graduate School or the Department's Secretariat.

### **Additional Information on the Postgraduate Programmes**

The students in both the M.A. and the Ph.D. programmes are encouraged to spend part of their studies abroad, so that they have the opportunity to work in specialized research libraries. For that purpose, the Department of Byzantine and Modern Greek Studies has established a wide network of cooperation and exchange programmes (ERASMUS) with related postgraduate programmes in Byzantine and Modern Greek Studies and Comparative Literature at Greek and other European universities.



## Research Interests of the Academic Staff

### • Yoryia Agouraki, Associate Professor

Syntactic theory, Comparative syntax as well as the interfaces between syntax and the other branches of theoretical linguistics, namely phonology, morphology and semantics.

### • Aphrodite Athanasopoulou, Assistant Professor

Modern Greek literature (from the literature of the Cretan heyday to the post-World War II generation) with a focus on 19th and 20th-century literary production and criticism. More specifically: Greek romanticism – Heptanesian and Athenian Schools – with a focus on the oeuvre of Dionysios Solomos, the Greek language question (from the Enlightenment onwards), realism in prose (Greek and European), Greek modernism with a focus on the 1930s generation. Also: Literary theory with a focus on topology and narratology, methods and approaches to teaching literature, relationship between history and literature (19th-century historical poetry – historical novel, the historical Cavafy, the post-World War II generation).

### • Julia Chatzipanagioti-Sangmeister, Professor

Modern Greek literature from the 18th until the early 20th century, Travel literature (Greek and European), edition of manuscripts, Comparative literature, Cultural history of the 18th and 19th centuries, and bibliography.

### • Stavroula Constantinou, Associate Professor

Hagiography, Byzantine literary genres, poetics, performance, narrative and feminist approaches, The body in Byzantine literature and culture and the literary image of the Other.

### • Antonia Giannouli, Associate Professor

Byzantine theological literature, in particular religious poetry, hymnography and their commentaries, The history of theological commentaries and homiletical texts, Byzantine lexicography, Prosopography and the critical edition and study of texts.

### • Martin Hinterberger, Professor

Late-byzantine literature, in particular hagiography as well as vernacular literature, The history of medieval Greek, Byzantine Autobiography, The cultural history of Byzantium, especially the topic of "Envy", The edition and study of Byzantine documents, in particular the documents of the patriarchal archives of Constantinople.

### • Marilena Karyolemou, Associate Professor

Language policy and language planning, Language attitudes, Sociolinguistics, Dialectology.

### • Marianne Katsoyannou, Associate Professor

Theoretical linguistics research with the description of the varieties of the Greek language as main application field, Language engineering with emphasis on issues of translation, lexicography and terminology.

### • Eleftherios Papaleontiou, Assistant Professor

Satirical Poetry of 19<sup>th</sup> and 20<sup>th</sup> centuries, Poetry in Cyprus Dialect, Modern Greek Prose of 19<sup>th</sup> and 20<sup>th</sup> centuries, Modern Greek Poetry between the two Wars, Parodies in Modern Greek Poetry, Literary Magazines, Cyprus Literature.

### • Marinos Pourgouris, Associate Professor

Modern Greek and comparative literature (with an emphasis on Modernism), Literary theory, particularly the critique of poststructuralism; Psychoanalytic criticism, postcolonial theory and philosophy, Cultural history (concentrating on the Balkans and the Mediterranean).

### • Alexandra Samuel, Professor

European modernism and literary avant-garde, Modern Greek literature of the 19<sup>th</sup> and 20<sup>th</sup> centuries in relation to the European literature of the same period, History of Modern Greek criticism.

### • Pantelis Voutouris, Professor

Modern Greek Literature and criticism of the 19<sup>th</sup> and 20<sup>th</sup> centuries.

## Contact Details

### COORDINATORS OF THE INTERDEPARTMENTAL PROGRAMME IN BYZANTINE STUDIES AND THE LATIN EAST

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**Angel Nicolaou-Konnari,**  
Associate Professor (HIS/ARCH)

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### PROGRAMME COORDINATOR IN MODERN GREEK STUDIES

**Julia Chatzipanagioti-Sangmeister, Professor**

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### DEPARTMENT SECRETARIAT

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# Department of Classics and Philosophy

www.ucy.ac.cy/cph

The aim of the programme is the study and the solid specialization in the following areas: Ancient Greek Philology, Latin Philology, Comparative Study of Classical Texts, Ancient Greek Dialectology and other pertinent disciplines such as Epigraphy, Papyrology and Greek and Latin Paleography. The second cycle (first postgraduate) lasts two years and leads to a Magister Artium (M.A.), and the third cycle (second postgraduate) leads to a Doctor of Philosophy Degree (Ph.D.) and lasts three years.

## General Principles and Characteristics of the Programme

The Department offers postgraduate programmes at the M.A. and Ph.D. levels. In the context of significant developments in Classical Studies in the international academic community, the Department has put together a curriculum of carefully designed Postgraduate Seminars which reflect the particular research interests of the academic staff members, who are personally and intimately involved in the organisation and instruction. Moreover, visiting scholars complement and enrich the Programme. This allows the postgraduate students to choose from a wide range of courses and methodology options, and contributes to the development of an environment of support and constructive criticism, which is necessary for the attainment of academic standards.

## Admission Requirements and Procedures

### Admission Requirements for the M.A. Programme

- A. B.A. degree in Classics or a related field from a recognized University.
- B. Good knowledge of one of the languages internationally used in Classics, preferably English.
- C. Two reference letters from the Academic Faculty of Classics or a related field. Candidates holding a B.A. Degree from the Faculty of Letters of the University of Cyprus are exempted from this obligation.
- D. Any other additional qualifications held by the candidate, such as other degrees, will be evaluated on an individual basis.

### Admission Procedure for the M.A. Programme

*Candidates fulfilling the formal requirements are admitted to the programme as follows:*

- A. Holders of a B.A. Degree from the Faculty of Letters of the University of Cyprus with "First Class Honours" are admitted on the basis of their application file.
- B. Holders of a B.A. Degree in Classics with a grade of 7 (seven) and above are admitted on the basis of their application file.

- C. Candidates who do not fall into the above categories A or B, may be invited by the Departmental Postgraduate Programmes Committee for an interview or might be asked to take a written examination in the subject area of the Programme.

*Students admitted to the Programme are subject to the general Postgraduate Studies Regulations.*

- A. Research Advisor from the academic staff of the Department will be appointed to each student that has been admitted to the Programme.

### Admission Requirements for the Ph.D. Programme

- A. A Master Degree in Classics or a related field from a recognized University.
- B. Good knowledge of at least two of the languages internationally used in Classics.
- C. Two reference letters from the academic faculty of Classics or a related field.
- D. Additional qualifications will be taken into consideration as appropriate.

The Departmental Postgraduate Programmes Committee examines the candidate's application file and according to their decision may invite him to an interview.

### Postgraduate Degrees

The Department offers a postgraduate programme at two levels, which lead to the following degrees:

1. Magister Artium (M.A.)
2. Doctor of Philosophy (Ph.D.)

### M.A. (MAGISTER ARTIUM) PROGRAMME

In order to obtain a Magister Artium Degree, the following qualifications are required: Full attendance at the Postgraduate Seminars for a minimum period of three semesters, successful completion of at least 120 ECTS and writing a thesis. The thesis must be 60-100 pages long (A4 paper size, 1.5 line spacing), demonstrating the students' ability in methodical treatment of a given subject, judicious use of ancient sources as well as secondary

literature, originality of ideas and scholarly presentation of results.

A. Postgraduate Seminars offered within the Programme will be structured around the following areas of Classical Studies:

1. Ancient Greek Literature
2. Latin Literature
3. Comparative Study of Greek and Latin Literature
4. Text Criticism and Editorial Technique as applied to Classical Texts
5. Auxiliary Disciplines of Classical Studies (Greek and Latin Palaeography, Papyrology, Epigraphy)
6. Ancient Greek Dialectology
7. History of the Latin Language
8. Political Thought of the Ancient Greeks and the Romans
9. Interpretative Approaches to Classical Texts
10. Issues in the Translation of Ancient Greek and Latin Texts
11. Classical Survivals in Modern Literatures
12. History of Classical Scholarship

B. The range of seminars offered is meant to enable post-graduate students to select such courses, depending on the orientation of their research interests, and will assist them in building their own research profile in order to finally compose their thesis.

C. In special cases a part of the ECTS required may be acquired by successful participation in under-graduate seminars offered by the Department. A part of the ECTS may also be obtained through successful participation in postgraduate seminars at other recognized universities within the framework of student exchange programmes. Students' mobility will be encouraged and facilitated.

It is recommended that one of the two courses in Historical Linguistics (AGL) covers the area of Greek or Latin Epigraphy.

## Courses Offered

### First Semester

(3 Courses x 9 ECTS = 27 ECTS)

AGP I 6 ..

LAT I 6 ..

AGL I 6 ..

### Second Semester

(3 Courses x 9 ECTS = 27 ECTS and the commencement of the work on the M.A. Thesis [search for bibliography] = 6 ECTS, Total: 33 ECTS)

AGP II 6 ..

LAT II 6 ..

AGP 690 M.A. Research I (6 ECTS)

HIS ..., ARC ..., BMG ...

### Third Semester

(2 Courses x 9 ECTS = 18 ECTS and continuation of the writing of the M.A. Thesis = 12 ECTS, Total: 30 ECTS)

AGP 601 Papyrology

AGL II 6 ..

AGP 691 M.A. Research II (12 ECTS)

### Fourth Semester

M.A. Thesis (30 ECTS)

Grand Total: 120 ECTS

(Credits from 8 three-hour long courses = 72 ECTS)

(Credits from M.A. Thesis = 48 ECTS)

## Ph.D. PROGRAMME

### Requirements

For the completion of the doctoral programme the following are required: successful completion of at least 240 ECTS from the doctoral programme including the successful completion of the thesis.

The 240 ECTS workload that leads to the completion of the Ph.D. consists of graduate level courses, participation in seminars and conferences organised by the Department, and the completion of the thesis.

Candidates who already hold an M.A., M.Phil. or equivalent degree from another university will be called for an interview before a three-member Committee, consisting of members of the Programme's teaching staff, in order to demonstrate their scholarly competence and their ability to enter the Programme.

### Doctoral Thesis

The proposal for a doctoral (Ph.D.) thesis must be presented before a three-member Committee, consisting of members of the Programme's teaching staff. Successful applicants must subsequently write an original thesis, which should contribute substantially to their respective fields of research. The degree is awarded after the successful defence of the thesis before a five-member board.

## Research Interests of the Academic Staff

• **Demokritos Kaltsas, Associate Professor**

Papyrology, The ancient book, Ancient tachygraphy, Koine and Atticism.

• **Anna Panayotou - Triantaphyllopoulou, Professor**

Syllabic scripts of the Greek-speaking world, Greek alphabets and dialects, Koine Greek, the Greek inscriptions of Macedonia and Cyprus and the Cypriot dialect (ancient, medieval and modern).

• **Antonios Tsakmakis, Associate Professor**

Archaic lyric poetry, Greek historiography and biography, Old comedy (Aristophanes), philosophy and political theory of the 5th and 4th cent. BC, Narratological and cognitive approaches to literary texts, Didactics of classical Greek.

• **Spyridon Tzounakas, Associate Professor**

Roman epic, Roman satire, Roman epistolography, Latin elegy, Cicero's orations, Latin historiography.

• **Georgios A. Xenis, Professor**

Greek textual criticism, Editorial practice, Scholiasts and grammarians, Ancient literary criticism, History of classical scholarship, Teaching ancient Greek in secondary education: Methodological issues.

• **Maria Ypsilanti, Associate Professor**

Epigram, Poetry of Hellenistic period and late antiquity, Tragedy, Textual criticism.

## Contact Details

### PROGRAMME COORDINATOR

**Anna Panayotou - Triantaphyllopoulou, Professor**

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### DEPARTMENT SECRETARIAT

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# Department of History and Archaeology

[www.ucy.ac.cy/hisarch](http://www.ucy.ac.cy/hisarch)

The Department of History and Archaeology encompasses the disciplines of History and Archaeology/Art History. Its chief aims are teaching and academic research in those fields. Since its establishment in 1992, the Archaeological Research Unit (A.R.U.) has been operating as a centre of archaeological study. It has been functioning as part of the Department since 1996.

The Department offers the following postgraduate programmes:

- Mediterranean Archaeology: from Prehistory to Late Antiquity (Master and Ph.D.)
- Ancient History (Master and Ph.D.)
- Modern and Contemporary History (19th-20th centuries) (Master and Ph.D.)
- Field Archaeology on Land and Under the Sea (Master)
- Interdepartmental postgraduate programme in Byzantine Studies and the Latin East in association with the Department of Byzantine and Modern Greek Studies (Master and Ph.D.)
- Interdepartmental postgraduate programme in Conservation and Restoration of Historic Buildings and Sites in association with the Departments of Civil and Environmental Engineering and Architecture (Master)

## Research Activity

The Department has inaugurated research programmes and projects which postgraduate research assistants and postgraduate students participate in. Their goal is original research, with special emphasis on Cyprus in relation to the rest of the Greek world and the Eastern Mediterranean.

For information on the research programmes of the Department faculty, please visit the Department of History and Archaeology and the Archaeological Research Unit websites ([www.ucy.ac.cy/hisarch-en](http://www.ucy.ac.cy/hisarch-en), [www.ucy.ac.cy/hisarch/aru-en](http://www.ucy.ac.cy/hisarch/aru-en) respectively).

### POSTGRADUATE PROGRAMME IN MEDITERRANEAN ARCHAEOLOGY: FROM PREHISTORY TO LATE ANTIQUITY

The objective of the programme is the study of the Archaeology, History and Culture of the Mediterranean region from Prehistory to Late Antiquity. The members of the Academic Staff of the Department of History and Archaeology in the following specializations participate in the programme as instructors and academic advisors:

- Prehistoric and Protohistoric Archaeology
- Environmental Archaeology and Archaeometry
- Archaeology of the Geometric, Archaic and Classical Periods
- Hellenistic and Roman Archaeology
- Ancient History and Epigraphy
- Folk Art and Architecture

## Programme Leading to a Master of Arts Degree

### Structure

For the postgraduate programme leading to the acquisition of a Master of Arts Degree in Mediterranean Archaeology: From Prehistory to Late Antiquity, 120 ECTS must be completed, as follows: Course work, equal to 80 ECTS, and a master's thesis, equal to 40 ECTS (see requirements for a master degree).

Postgraduate students choose eight courses (each course equals 10 ECTS) from the following thematic units, which are offered on a two-year cycle:

ARC 700 - ARC 709	The Mediterranean in Early Prehistory
ARC 710 - ARC 719	The Mediterranean in the 3rd Millennium B.C.
ARC 720 - ARC 729	The Mediterranean in the 2nd Millennium B.C.
ARC 730 - ARC 739	The Mediterranean in the Iron Age
ARC 740 - ARC 749	Art: Production and Circulation (Architecture, Sculpture, Ceramics, Minor Arts, etc.) of the Geometric, Archaic and Classical Periods
ARC 750 - ARC 759	Topography of the Main Centres of Classical Antiquity (urban centres, necropoleis and sanctuaries)
ARC 760 - ARC 769	Art: Production and Circulation (Architecture, Sculpture, Ceramics, Minor Arts, etc.) of the Hellenistic and Roman Periods
ARC 770 - ARC 779	Topography of the Main Centres of Hellenistic and Roman Antiquity (urban centres, necropoleis and sanctuaries)



ARC 780 - ARC 789	Protection, Preservation and Management of Cultural Heritage
ARC 790 - ARC 799	Theoretical Archaeology, Methodology, Archaeometry and Environmental Archaeology: The directions of modern research
ARC 800 - ARC 809	Ancient Technology (Ceramics, Metal, Stone, Glass, etc.)
HIS 700 - HIS 709	Ancient Greek and Roman History: The directions of modern research
HIS 710 - HIS 711	Ancient Greek and Latin Epigraphy

Full-time postgraduate students must take three of the above courses in the first semester, of their studies and three in the second. In the third semester they must take two of the offered courses and also the compulsory course ARC 810 Preparation and writing of a master's thesis I (10 ECTS). In the fourth semester postgraduate students continue and complete the master's thesis ARC 811 Preparation and writing of a master's thesis II (30 ECTS).

## Programme of Studies

### First Semester

ARC 720	The Mediterranean in the 2nd Millennium B.C.
ARC 740	Art: Production and Circulation (Architecture, Sculpture, Ceramics, Minor Arts, etc.) of the Geometric, Archaic and Classical Periods
ARC 760	Art: Production and Circulation (Architecture, Sculpture, Ceramics, Minor Arts, etc.) of the Hellenistic and Roman Periods

### Second Semester

ARC 700	The Mediterranean in Early Prehistory
ARC 790	Theoretical Archaeology, Methodology, Archaeometry and Environmental Archaeology: The directions of modern research
HIS 702	Documents of the Hellenistic and Roman Periods in the Eastern Mediterranean

### Third Semester

ARC 730	The Mediterranean in the Iron Age
ARC 750	Topography of the Main Centres of Classical Antiquity (urban centres, necropoleis and sanctuaries)
ARC 770	Topography of the Main Centres of Hellenistic and Roman Antiquity (urban centres, necropoleis and sanctuaries)
HIS 711	Inscriptions of Cyprus
ARC 810	Preparation and Writing of Stage I of the Master's Thesis (offered only to 3rd semester students and is compulsory)

### Fourth Semester

ARC 710	The Mediterranean in the 3rd Millennium B.C.
ARC 780	Protection, Preservation and Management of Cultural Heritage
ARC 800	Ancient Technology (Ceramics, Metals, Stone, Glass, etc.)
ARC 811	Preparation and Writing of Stage II of the Master's Thesis (offered only to 4th semester students and is compulsory)

## Prerequisites for Admission to the M.A. Programme

1. Candidates must be:

- Graduates of the Department of History and Archaeology of the University of Cyprus or the Departments of History and Archaeology of Greek universities.
- Graduates of the Department of Classical Studies and Philosophy of the University of Cyprus or equivalent departments of Greek universities.
- Graduates of Departments of Archaeology and/or Classical Studies of recognized universities.
- Graduates with a degree in related fields of research (history, history of art, architecture, anthropology, or other disciplines that have applications in archaeology, such as geology, physics and chemistry) from recognized universities.
- Graduates of the School of Letters with a minor degree in History and Archaeology.

2. The Committee of the above Programme will examine on their own merit applications from candidates who do not have a degree in Archaeology or History.

3. Graduates of the University of Cyprus and Greek universities must have an undergraduate diploma with a cumulative grade of 7.5/10.0 or higher. The equivalent is required for candidates who have graduated from other universities.

4. Candidates who meet the above requirements will be called for an interview and/or a written exam. They must also pass written exams in one of the main European languages (other than their mother tongue), namely English, French, German, Italian, Spanish.

5. Greek is the official language of instruction and for writing the master's thesis.

## Submission of Application

Applications must be submitted to the Department's Postgraduate Programme Coordinator within the announced deadlines.

For information on application/admission procedures and requirements, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department's Secretariat.

In addition to the general requirements, candidates must also include the following in their application: a) two undergraduate essays on archaeological themes, or, in the case of applicants who fall under categories 1(a), 1(b) and 1(c), two undergraduate essays on related themes and b) certificates proving good knowledge of a foreign language.

## DOCTOR OF PHILOSOPHY DEGREE

### Prerequisites for Admission to the Ph.D. Programme

1. Candidates must have a postgraduate degree from a recognized university, in Archaeology or in a related field (history of art, architecture, anthropology and other subjects that have applications in archaeology, such as geology, physics and chemistry).
2. Candidates who meet the above requirements will be called for an interview. They must also pass written exams in two of the main European languages (other than their mother tongue), namely English, French, German, Italian, Spanish.

### Submission of Application

Applications must be submitted to the Department's Postgraduate Programme Coordinator within the announced deadlines (please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School, or the Department Secretariat).

In addition, applications must include: a) a copy of the M.A. thesis and copies of published articles, if any, b) certificates proving good knowledge of two foreign languages, and c) statement regarding the research topic for the Doctoral Dissertation.

### Contact Details

#### PROGRAMME COORDINATOR FOR GSP

**George Papasavvas, Associate Professor**

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## POSTGRADUATE PROGRAMME IN ANCIENT HISTORY (MASTER)

The Programme focuses on the in-depth study of Ancient Greek History, Roman History, and Ancient Cypriot History. The study of these subjects is confined within the geographical limits of the Mediterranean region and the Near East.

The postgraduate programme leading to the Master degree in Ancient History requires 120 ECTS, as follows:

- 80 ECTS in eight courses (8 X 10)

- 40 ECTS for the Master's thesis

The duration of the Programme is two years (four semesters); the fourth semester is devoted to writing the Master's thesis.

Of the eight courses required for the Master degree, six courses must be taken from the following thematic units:

- Ancient Greek History-East
- Phoenicians-History and Culture
- Roman History-East
- Late Antiquity-East
- History of Ancient Cyprus
- Epigraphy

The remaining two courses are electives to be chosen from similar postgraduate programmes of the University of Cyprus. These may include, but are not limited to:

- Mediterranean Archaeology
- Classical Philology
- Byzantine Studies (see relevant pages)

### Prerequisites for Admission to the Programme

Each year, the Department of History and Archaeology admits eight postgraduate students.

Candidates must be:

- Graduates of the Department of History and Archaeology at the University of Cyprus or equivalent departments at other universities.
- Graduates of the Department of Classical Studies at the University of Cyprus or equivalent departments at other universities.

Applications must be submitted to the Secretary of the Department of History and Archaeology within the announced deadline. Applications must include the following:

1. Curriculum Vitae.
2. Short essay on the scholarly and research interests of the candidate.
3. Two letters of recommendation from university professors or research institutions.

Candidates who meet these criteria will be invited for an interview.



## POSTGRADUATE PROGRAMME IN ANCIENT HISTORY (DOCTORATE)

Each year, the Department of History and Archaeology admits four doctoral students.

Candidates must have a postgraduate degree (Master) from the University of Cyprus or from another recognized university in Ancient History, Classical Archaeology (or in Mediterranean Archaeology from the University of Cyprus).

Applications must be submitted to the Secretary of the Department of History and Archaeology prior to the announced deadline. Applications must include the following:

1. Curriculum Vitae.
2. Short essay (about three pages) on the proposed Ph.D. research topic.
3. Certificate(s) attesting to the good knowledge of a foreign language.
4. Publications (if applicable).
5. Two letters of recommendation from university professors or research institutions.

Candidates who meet these criteria will be invited for an interview.

## Contact Details

### PROGRAMME COORDINATOR (MASTER AND DOCTORAL)

**Theodoros Mavroyiannis, Professor**

### DEPARTMENT SECRETARIAT

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## POSTGRADUATE PROGRAMME IN MODERN AND CONTEMPORARY HISTORY (19<sup>th</sup>-20<sup>th</sup> CENTURY)

### Master Degree

The aim of the Programme is to offer specialized study of Modern Greek and European History (since the 19<sup>th</sup> c.), and highlight its connection with the history of the wider area of the Mediterranean and Southeastern Europe; and to map the course of Cyprus and its political and cultural relations with the broader European world.

The personnel teaching in the Programme comprises the academic staff appointed to the Department of History and Archaeology, in the following specialized areas:

- Modern Greek History
- Contemporary Greek History
- Modern European History
- Contemporary European History

The same members of staff will also act as academic advisors to the students.

Additional teaching can also be offered by visiting academic staff and short term visiting academic staff in the above specializations. Academics of other departments of the University may also offer classes following the Department's invitation.

## Organization of the Programme

The Postgraduate Programme consists of three elements:

- I. Taught courses.
- II. Independent study, attendance and participation in the Colloquium.
- III. M.A. dissertation.

Students have to fulfil successfully all three elements of the programme in order to obtain the M.A.

## I. Courses

The taught element of the Programme is organized around groups of courses. Every candidate has to attend seven courses, four of which have to be from two different categories. The remaining three courses have to be selected, a) from courses which belong to the categories that have already been selected, b) from courses from other categories of courses, c) up to two courses may be selected from the postgraduate programmes of other Departments of the Faculty of Letters. At the suggestion of the Coordinator of the Postgraduate Programme and with the approval of the Council of the Department, one of the two courses may be selected from a postgraduate programme outside the Faculty of Letters.

The categories of courses and the courses which will be offered are:

**Category A: History of the Mediterranean Area in the Modern and Contemporary Period**

- HIS 740 National Movements, Revolutions, Irredentism and the "Great Idea" in Europe and the Mediterranean Basin (19th-20th c.)
- HIS 761 Navigation in the Mediterranean - Shipping Lanes of the Mediterranean
- HIS 781 British Colonialism and the Eastern Mediterranean

**Category B: History of Cyprus (19<sup>th</sup>-20<sup>th</sup> c.) – Cypriot Studies**

- HIS 742 Political Life and Conflicts in the Republic of Cyprus, 1960-1974
- HIS 762 Plans for the Solution of the Cyprus Problem
- HIS 763 Social and Economic History of Cyprus
- HIS 782 The National Movement and Political Parties in Cyprus during the 20th c.
- HIS 783 Press, Education and Intellectual Life in Cyprus
- HIS 784 The Greek Cypriot Church and the "Enosis" issue

**Category C: Modern and Contemporary Greek and European History**

- HIS 744 "Hot" Conflicts during the Cold War: the Greek Civil War, the Korean war, the Vietnam war
- HIS 740 National Movements, Revolutions, Irredentism and the "Great Idea" in Europe and the Mediterranean basin (19th-20th c.)
- HIS 785 Authoritarian Regimes in Greece during the 20th c.

It is possible in the future to add new categories or to add/replace courses in the existing categories.

**II. Independent Study/Colloquium**

A colloquium is offered as part of the Programme. Postgraduate students, Ph.D. candidates, teaching staff of the postgraduate programme and visitors of the Department who present their research, participate in the meetings of the colloquium.

During the first semester, students have to complete the Independent Study (graded with Pass/Fail) and to participate in the colloquium. The presentation of the Independent Study may take place during the first semester or the second semester (together with the presentation of the research proposal).

In the second semester of study, all the postgraduate students present the research proposal for their M.A. dissertation at the Colloquium.

**III. M.A. Dissertation**

In the third semester of studies, postgraduate students attend one course and begin work on their M.A. dissertation. The M.A. dissertation is expected to be in the region of 15.000 words.

During the fourth semester of studies, postgraduate students continue and complete their M.A. dissertation.

**Entry Criteria**

1. Candidates in the Postgraduate Programme may be graduates of departments from recognized universities.

Priority will be given to: Graduates of departments of History, graduates of faculties of Letters, graduates of departments of Political Studies, European Studies or Turkish Studies.

2. Graduates of Greek universities and of the University of Cyprus must have a GPA of at least 7,0 and above. Equivalent grades are required from graduates of other universities.
3. A good knowledge of the English language is required. Knowledge of a second European language is considered an advantage.
4. The final decision for the admission to the Postgraduate Programme is taken by a committee that is appointed by the academic staff of the Department (academic staff appointed to the Department and teaching in the programme), which evaluates the candidates' applications. The Committee reserves the right to invite for an interview and/or a written examination the candidates, even if they fulfil all the criteria for acceptance.
5. The language of teaching and assessment is Greek.
6. Number of students admitted to the M.A. per year: 15.

**Study Regulations**

Postgraduate studies are organized according to the Postgraduate Study Regulations of the University of Cyprus (see relevant Regulations).

**M.A. Degree Requirements**

- The Department appoints an Academic Advisor for every new postgraduate student.
- The minimum period of full-time study for the M.A. is three semesters.
- Successful completion of 120 ECTS is required for the M.A. degree. These are allocated as following:

	ECTS
Taught Courses (7 X 9)	63
Independent Study (1 X 3)	3
Participation-presentation of the research proposal at the Colloquium (1 X 3)	3
Preparation and writing of the dissertation I and Preparation and writing of the dissertation II (21 + 30)	51
<b>Total</b>	<b>120</b>

The Programme may be offered either on a full-time or part-time basis. Students (either full-time or part-time) have to follow the programme as organized (see below). The general postgraduate study regulations are applicable as regards the general work load.

Part-time students may begin writing their dissertation after the completion of six of the seven compulsory courses of the programme.

## Suggested Programme of Studies

	ECTS
<b>First Semester</b>	
Three Courses from two categories of courses X 9 ECTS (optionally: 3 courses from one category of courses X 9 ECTS)	27
Independent study and participation in the Colloquium	3
<b>Total</b>	<b>30</b>
<b>Second Semester</b>	
Three Courses from two or three categories of courses X 9 ECTS (optionally: three Courses from a different category from the one that has been followed during the previous semester X 9 ECTS)	27
Presentation of the Research Proposal/of the Independent Study at the Colloquium	3
<b>Total</b>	<b>30</b>
<b>Third Semester</b>	
1 course from the offered categories of courses X 9 ECTS	9
M.A. Dissertation I X 21 ECTS	21
<b>Total</b>	<b>30</b>
<b>Fourth Semester</b>	
M.A. Dissertation II X 30 ECTS	30
<b>Total</b>	<b>30</b>

## Crediting ECTS from a Previous M.A. Degree

Applications are submitted to the Coordinator of the Postgraduate programme during the dates the University sets, as advertised in the press and/or the University and departmental website. Applications must include the following:

- Copy of the university degree or certification of forthcoming graduation.
- Grades for courses attended in the first and/or M.A. degree.
- Short Curriculum Vitae.
- Two undergraduate essays or published work in Modern History.
- Proof of good knowledge of English, and of other languages.
- Letters of reference from at least two academics.
- Short statement (up to two pages) of research interests of the candidate and research proposal.

## Calculation of the Workload (ECTS)

The unit of credit is based on the calculation of the student workload during every semester. One ECTS unit is equivalent to 25-30 hours work per semester.

Consequently, courses of 9 ECTS correspond to 225-270 hours of work, and are allocated as follows:

### A. For Courses with Codes HIS 720-740 (9 ECTS)

- 3 hours of teaching X 13 weeks: 39 ECTS.
- 6 hours of meetings for academic guidance: 6 ECTS.
- Study time required during the semester (10 hours preparation for every course per week average, including the study and the preparation for presentations, presentation of the essay for every course, and the time for archival and bibliographical research required for the writing of the essays): 140.
- Preparation and writing of the final essay for every course: 60.

Total working hours per course per semester: 245.

### B. HIS 808 Independent Study/HIS 809 Colloquium (3 ECTS)

- 1,5 hours attendance X 13 weeks: 19,5.
- 2 hours of meetings for academic guidance: 2,5.
- Study time required during the semester (total 40 hours preparation for the independent study/the research proposal, including the study and preparation for the presentations at the course and the time of archival and bibliographic research, required for the writing of the independent study/research proposal): 40.
- Preparation and writing of the independent study/research proposal for the M.A. dissertation: 18.

Total working hours per course per semester: 80.

### C. HIS 810 Preparation and Writing of the M.A. Dissertation I (21 ECTS)

- Meeting with the research advisors: 26.
- Research [indicatively: Locating and reviewing the existing bibliography, selection and application of the research methodology, finding primary material in archives and private collections.] Photographing material, indexing. Documentation and cross-checking information. Familiarization with software programmes (when necessary): 300.
- Writing pilot parts of the dissertation: 254.

Total working hours: 580.

### D. HIS 811 Preparation and Writing of the M.A. Dissertation II (30 ECTS)

- Meeting with the academic advisors: 39.
- Research [indicatively: Finding and review of existing bibliography, selection and application of the research methodology, finding primary material in archives and private collections]. Photographing material, indexing. Documenting and cross-checking of information. Familiarization with software programmes (when needed): 271.
- Writing of the dissertation: 460.

Total working hours: 770.

## DOCTOR OF PHILOSOPHY DEGREE

### Criteria for Admission to the Ph.D. Programme

1. The candidates must hold an M.A. degree in History from a recognized University. Candidates, whose M.A. degree is in other fields (such as political science, European studies or Turkish studies) and who fulfil all the criteria of the programme, may also apply.

Candidates, whose M.A. degree is in fields other than the above, may also apply for a Ph.D. in the history of their specialization in Cyprus and/or the Greek World during the modern and contemporary periods. These candidates will be supervised in cooperation with the academic staff of the relevant departments.

2. Good knowledge of the English language is required. The knowledge of a second European language will be considered an added qualification.

Admission to the programme: A committee comprised of the permanent academic staff teaching in the programme will be responsible for the evaluation of the applicants. This committee reserves the right to invite candidates for an interview and/or a written examination.

### Requirements and Organization of the Ph.D. Programme

Course attendance: Students with an M.A. degree or equivalent in Modern and/or Contemporary History or other relevant M.A. Degree, who satisfy all the requirements of the programme, are exempted from the obligation of attending courses. Candidates may be required to attend M.A. degree programme courses, if the Department considers this necessary for the candidate's research.

Colloquia: Within the framework of the programme a cycle of scholarly meetings (colloquia) will be held. M.A. and Ph.D. students, academic staff and visiting academics will participate in these meetings and present their research. Ph.D. students must present their research proposal and/or part of the Ph.D. dissertation during this cycle of meetings.

### Contact Details

#### PROGRAMME COORDINATOR FOR GSP

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## POSTGRADUATE PROGRAMME IN FIELD ARCHAEOLOGY ON LAND AND UNDER THE SEA

The aim of the programme in Field Archaeology On Land and Under the Sea is to provide advanced knowledge of the theory and methodology of archaeological fieldwork on land as well as under the sea, and to furnish young professionals with the requisite training to rise up to the challenges of both the public and the research aspects of archaeology. The courses on offer examine the nature, the study and the documentation of archaeological finds and sites (both landlocked and maritime), while practical field training is duly encouraged, on land, sea and in the laboratory.

The programme is offered in English and Greek and is addressed to:

- Archaeologists already working in the public sector (archaeological services or in museums), who need to optimize their professional performance in various aspects of fieldwork.
- Young archaeologists who wish to enhance their training and experience in order to pursue a career in the public or private sector.
- Young researchers who need to expand their fieldwork activities or be trained in new/specific methods and techniques.
- Non-archaeology graduates from disciplines closely linked to archaeology, who wish to become familiar with archaeological fieldwork.

### Structure

The postgraduate programme in Field Archaeology On Land and Under the Sea can be completed in a minimum of three semesters. Successful completion is predicated on the acquisition of 90 ECTS, as follows:

- 1<sup>st</sup> semester** (30 ECTS). Three courses on Landscape Archaeology\*
- 2<sup>nd</sup> semester** (30 ECTS). Three courses on Materials and Artefacts Studies\*
- 3<sup>rd</sup> Semester** (30 ECTS). One course on Practical Training in Field Archaeology\*

In order to complete the remaining 20 ECTS, students have two options:

- either conduct an M.A. thesis (12,000-15,000 words) (20 ECTS), or
- attend two elective courses (2 x 10 ECTS).

\* For each course, valued at 10 ECTS, students are required to prepare oral presentations, write at least one essay and participate in organised visits.



## Courses on Offer

### 1. Landscape Archaeology

#### **ARCH 650 Settlement and Landscape Archaeology**

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The aim of this seminar course is to offer students a cohesive and complete theoretical, methodological and practical background in settlement- and landscape archaeology as a means of studying built space and the natural environment at a higher resolution, in order to identify, quantify and comprehend past human activity. With the use of case studies, in situ visits and drills, students will become familiar with (a) state-of-the-art methods and approaches for examining archaeological landscapes and (b) the technical equipment (e.g. robotic total station, Differential GPS, handheld computers) for recording and documenting archaeological features in the field.

#### **ARCH 653 Introduction to Geographical Information Systems (GIS) in Archaeology**

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The aim of this course is to provide theoretical knowledge and the fundamental principles in the application of Geographical Information Systems (GIS) in Archaeology. The course will provide theoretical information regarding the different types of digital data (raster and vector format), their analysis and editing, the digitization of historical, topographical or geological maps and their georeferencing, the analysis of Digital Terrain Models (e.g. derivatives of it, viewshed analysis, least cost surface, etc.) and the creation of digital thematic maps. The examples that will be provided will be drawn from previous investigations that address various archaeological and historical questions.

The course aims to give a theoretical background to students wishing to pursue research in the fields of Landscape Archaeology and applications related to analyses of the environment and space in History and Archaeology (e.g. Predictive Modelling, risk assessment, linking information from historical sources with spatial data, communication networks, etc.). With the completion of the laboratory section of this course, students will get a hands-on experience of the ArcGIS environment, the digitization of maps, the import of their own historical/archaeological datasets and the creation of thematic archaeological maps.

#### **ARCH 654 Maritime Cultural Landscape**

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The purpose of the course is to convey to the students the concept of maritime landscape and its components so that they are able to plan a comprehensive fieldwork project in the coastal zone. Upon completion of the seminar, students are expected to a) have a grasp of the contemporary research regarding the theoretical discussion and the methodological approaches of the concept of maritime cultural landscape, b) be in a position to date and analyse sites of coastal settlements and harbour installations, taking into consideration the coastal changes and the dynamics of human presence in the coastal zone, and c) be able to assess the role of certain elements of the seascape (weather conditions and coastal topography, landmarks and orientation) in the development of pre-industrial shipping. The theoretical discussions are always complemented with examples of completed projects so that the students become familiar with the archaeological record and the latest developments in the field.

### 2. Materials and Artefacts Studies

#### **ARCH 655 Shipwreck Archaeology**

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Shipwrecks are entities of special value in the archaeological record because of their distinctive synchronic nature and the direct evidence they provide for trade and contacts in antiquity. The seminar will discuss the main types of archaeological finds discovered on shipwrecks (assemblages of cargo, ship-related material [hull and gear], the personal possessions of those on board), the available methods and techniques for in situ preservation, and the excavation and conservation of recovered, waterlogged material. Particular emphasis will be given to surveying and mapping techniques, which enable more accurate results, and the development of research tools for documenting site formation processes (cultural and natural). Students will be offered the opportunity to implement in the field much of the knowledge they acquire in the classroom, through their participation in the University of Cyprus excavation project on the Mazotos shipwreck, and a practical seminar at the Department of Antiquities' Conservation Laboratory for Underwater Finds.

#### **ARCH 659 The Interdisciplinary Study of Ancient Materials**

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Today it is widely accepted that the most comprehensive archaeological studies are those which combine traditional methods of typological and stylistic classification with analytical techniques deriving from the natural and digital sciences. The aim of this course is to introduce students to a variety of analytical techniques used for the characterization of ancient materials. The focus will be on the physical, chemical and microscopic analysis of the main groups of inorganic materials namely stone, ceramics, glass, plasters and metals. The students will also be instructed on how the analytical data procured can then be used to answer questions regarding ancient technology, economy, organization of production and trade.

#### **ARCH 661 Study of Pottery and Small Finds**

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This seminar course focuses on methodologies employed to recognize, record, and quantify ceramics from both excavated and survey contexts. Special attention will be given to (a) basic principles applied for the classification of ceramics by ware type and identifying chronological ware-groups, (b) methods for reading (interpreting) pottery functions, (c) models used to record and quantify ceramic assemblages (with the use of the relevant software), (d) practical-classes for both hand-drawing and 3D-scanning and reconstruction of pottery sherds (with the aid of a 3D scanner). Students will also have the opportunity to get involved in the quantification of already dated assemblages and/or participate in the study of ceramic finds.

### 3. Practical Training

#### **ARCH 615 Practical Training in Field Archaeology**

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The purpose of this course is the on-site training in generic and specific practical archaeological skills, supplemented by formal lectures. The students expose themselves to the particular conditions of teamwork in the field and develop communication and collaboration skills. They also experience the challenges and rewards of discovering material remains of the past, while at the same time they get a grasp on the research related to archaeological fieldwork. In total, they complete **at least 20 days of practical training in the field (180 hours)**. They should also write an essay on a related subject, under the supervision of the course instructor. Upon completion of the seminar, they are expected to have comprehended the nature, potential and purpose of archaeological fieldwork.

## 4. Electives

### **ARCH 651 Mediterranean Island Landscapes**

The primary purpose of the course is (a) to become acquainted with the cultural distinctiveness of the Mediterranean islands, especially the mega islands of Cyprus, Crete, Sicily and Sardinia, but also smaller ones, like the Cyclades in the Aegean Archipelago; (b) to define their cultural choices and their socio-economic resilience through comparisons with each other and with the nearest continents; (c) to investigate how the island populations exploited the landscape and the natural resources; and (d) to ask why some developed early complex societies (e.g. Crete) while others chose to avoid political complexity (e.g. Sardinia).

### **ARCH 652 Introduction to Building Archaeology**

Building Archaeology ('Archéologie du bâti', 'Bauforschung') constitutes a branch of the discipline dealing with the scholarly and scientific analysis of standing historical structures by non-destructive means. Its methodology entails the close 'reading' of extant masonry surfaces, the production and study of accurate illustrative documentation, the scientific investigation of mortars, pigments, metal, wood and other materials, and the scrutiny of the documentary record with a view to reconstructing the history of particular edifices within their immediate architectural and cultural surroundings. The course aims to familiarize students with the basic methods employed in this kind of 'above-ground' archaeology through the survey of current theoretical approaches and an introduction to photographic and graphic documentation.

### **ARCH 663 Introduction to Cultural Heritage Management (CHM)**

The course aims to familiarize students with the concept of cultural heritage, its importance and the dangers that threaten it, as well as the reasons why it is imperative to manage it and what this entails. The students are introduced to the national and international legal instruments that govern Cultural Heritage Management (CHM) as well as to the most important local and international organizations engaged in it. The theoretical framework, ethics, methods and techniques involved in ensuring the protection, conservation and highlighting of cultural resources are examined, and good and bad practices in the field are discussed. By the end of the course, students will be able to recognize the potential contribution of CHM to the promotion of scientific knowledge, sustainable development, the improvement of the quality of life of human societies, the cultivation of respect for all human beings and their achievements, and peace-building.

## Admission Criteria

Prospective students must have completed an undergraduate degree in Archaeology, History, Classics, Anthropology or other related fields of research (history of art, architecture, geography, geology, physics, chemistry, engineering) in recognized universities.

Graduates of the University of Cyprus and universities in Greece must have an undergraduate diploma with a cumulative grade of 6.5 or higher. The equivalent is required for graduates from other universities. Applicants must speak English at a satisfactory level (IELTS 5.5 or equivalent).

## Applications Submission

The application must be submitted online, according to the general rules of the Graduate School of the University of Cyprus.

Candidates who meet the requirements will be called for an interview. Overseas applicants will be interviewed via teleconference.

## Contact Details

### **PROGRAMME COORDINATORS**

**Stella Demesticha, Associate Professor**

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**Athanasios K. Vionis, Associate Professor**

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### **INTERDEPARTMENTAL POSTGRADUATE PROGRAMME IN BYZANTINE STUDIES AND THE LATIN EAST**

(see relevant pages 168-175)

## Contact Details

### **PROGRAMME COORDINATOR FOR THE DEPARTMENT OF HISTORY AND ARCHAEOLOGY**

**Angel Nicolaou-Konnari, Associate Professor**

Tel.: 22892175

Fax: 22895078

E-mail: gpkonari@ucy.ac.cy

## Research Interests of the Academic Staff

### • **Natasha Constantinidou, Assistant Professor**

History of (western) Europe, 1600-1800. History of religious and intellectual movements (the Renaissance, the Reformation, the religious wars of the 16th and 17th centuries and their implications, scientific discoveries, etc.), Intellectual history, History of political thought, Cultural history, History of the book. Relationship between politics and religion, church and state, circulation of ideas, communication networks and intellectual exchanges, patronage and ideology (ideology expressed in texts, rituals and pageants, images and iconography), Cultural and intellectual production of royal and religious courts, Rise of the dynastic states.

### • **Stella Demesticha, Associate Professor**

Maritime archaeology with focus on shipwrecks, amphorae, ancient sea routes, trade mechanisms and economy in the Eastern Mediterranean, Late Roman pottery, Ancient and pre-industrial ceramic technology.

### • **Maria Iacovou, Professor**

The historical dimension of the passage from prehistory to protohistory. Cyprus protohistory and the foundation of the city-kingdoms in the 11th century B.C. ceramic typology of the late Bronze Age and the early Iron Age. Distribution of 11th century Cypriot pottery in the Mediterranean. Historical cartography and the topographical development of the cities in Cyprus.

### • **Vassiliki Kassianidou, Professor**

Extractive metallurgy, Ancient technology, Conservation of metals, Production and trade of Cypriot copper in antiquity.

### • **George Kazamias, Associate Professor**

Contemporary European history (WWII, Cold War, unification of Europe, Europeanization), History of south-eastern Europe (19th - 20th c.), Greek minorities, Diaspora and refugees in the Balkans, Eastern Mediterranean and the Middle East, Oral history.

### • **Angel Nicolaou-Konnari, Associate Professor**

Hellenism under Latin rule. This mainly involves the various aspects of cultural interaction and exchanges between Greeks and Latins in Latin Greece in general and Cyprus in particular (late twelfth-seventeenth centuries) and related phenomena in the domains of language, religion, and social institutions, as well as ethnicity, self-perception, and the perception of the Other. The important corpus of Cypriot historiographers (late twelfth-eighteenth centuries). A prosopographical study of the Cypriots in the Middle Ages and Early Modern Times and particularly of the Cypriots of the diaspora (sixteenth-eighteenth centuries). The place of women in Latin Greece and particularly Cyprus.

### • **Dimitrios Kontogeorgis, Lecturer**

His research interests lie in Modern Greek and Balkan political and social history, the history of diaspora and migration, and the economic and social history of Greece and Southeastern Europe in particular during the eighteenth and nineteenth centuries.

### • **Ourania Kouka, Associate Professor**

Historiography of prehistoric archaeology in Europe and the Eastern Mediterranean. Theoretical and methodological approaches in prehistory. Stone and Bronze Ages in the Aegean, Anatolia and the Eastern Mediterranean. Island archaeology.

Inter- and intra-site organisation in prehistory. Policy, economy and society in prehistory. Industrial installations, early metallurgy, ceramic technology in prehistoric Aegean and Anatolia. Trade and cultural networks in the Balkans and the Eastern Mediterranean during the Stone and Bronze Ages.

### • **Theodoros Mavroyiannis, Professor**

The history of ancient historiography, The history of the Hellenistic and Roman East, The monumental topography of Greece and Italy, Ancient religion and epigraphy.

### • **Michalis Olympios, Associate Professor**

History of medieval art and architecture (6th-16th centuries). More specifically, history of gothic architecture (12th-16th centuries) in Europe and the Latin East: Typology, design, construction techniques, issues of patronage; ecclesiastical art in Latin Europe (altarpieces and assorted altar furnishings, liturgical vessels, etc.), monumental sculpture and small-scale carving in various media (stone, metal, ivory), History of the crusades and art history of the Latin East, History and art history of Lusignan Cyprus (1192-1489).

### • **Petros Papapolyviou, Associate Professor**

Contemporary Greek history (WWII: occupation and resistance, civil war, Greek national claims), Political history of Cyprus, 1878-1960 (British rule, Enosis movement, liberation struggle 1955-1959, Cypriot volunteerism).

### • **George Papasavvas, Associate Professor**

Metalwork of the Late Bronze Age and Early Iron Age, Bronze sculpture, Sculpture of the archaic and classical periods, Greek structures, Relations between the Aegean and the Eastern Mediterranean in the Early Iron Age.

### • **Maria Parani, Associate Professor**

Formation processes of Byzantine art, Representation of reality, The relationship between centre and periphery in Byzantine art in Cyprus, Cultural exchange in the fields of court ceremonial, Dress and art, Daily life in Byzantium and the exploration of alternative sources for the study of Byzantine material culture, Byzantine dress.

### • **Apostolos Sarris, Professor**

- Applied Shallow depth Geophysics & Remote Sensing.
- Application on Digital Heritage, spatial modelling, networking, Geodatabases
- Integrated Shallow Depth Geophysical Prospection. Signal Processing, mapping and modelling.
- Site Assessment & Spatial analysis and modelling through the application of Satellite Remote Sensing and Geographical Information Systems (G.I.S.).
- Satellite image processing and classification techniques.
- Landscape Archaeology, Spatial History, Digital Humanities.
- Digital archaeological maps. Cultural Resources Management (CRM). Web\_GIS applications.
- Environmental research. Development Strategies.
- Bridging the gap between Innovative Technologies and Cultural Studies.
- Mediterranean Collaborations on Cultural Heritage Issues.

• **Chris Schabel, Professor**

Medieval and Renaissance intellectual history (philosophy, theology, science and educational institutions), History of Cyprus 1191-1571, Textual criticism, Medieval Latin palaeography.

• **Dionysios Stathakopoulos, Assistant Professor**

His research interests are on the social history of the Byzantine Empire with an emphasis on environmental history as well as the history of medicine. He is currently working on wealth and its uses in the late Byzantine empire (1261-1453), particularly investments in afterlife management strategies such as charity and the cult of remembrance.

• **Athanasios K. Vionis, Associate Professor**

Methodological approaches to the study of urban and rural landscapes and material culture of the Byzantine and post-Byzantine Aegean and the Eastern Mediterranean (6th-19th c. AD): The transition from Late Antiquity to the Early Middle Ages; The archaeology of death (pagans and Christians); The archaeology of identity (social, religious, ethnic), War, Defence, the built environment (cities, castles, towers, rural settlements-villages) and the use of domestic space, Urban and rural life-ways and economy through the sources (texts – pictorial evidence – material culture), The history and archaeology of food consumption, Technology/production – distribution – use of ceramic vessels.

## Contact Details

### DEPARTMENT SECRETARIAT

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## THE ARCHAEOLOGICAL RESEARCH UNIT

The Archaeological Research Unit (ARU) collaborates with scholarly organisations in Cyprus and abroad to realize its research objectives. In Cyprus this cooperation involves various governmental services (e.g. the Department of Antiquities and the Geological Survey Department), local authorities (e.g. the Municipality of Yeroskipou, the Community of Kouklia) and other departments of the University of Cyprus. Abroad, the ARU works with scholars from various European, American and Australian universities and research centres.

The range of research foci is determined in accordance with the areas of specialization of the members of the ARU and in view of the need to investigate sectors of Cypriot archaeology that have not yet been studied in depth.

In addition, members of the academic faculty and students of the Department participate in and conduct archaeological excavations in Cyprus and abroad (Greece, Turkey).

For information on the research programmes, please visit the ARU and Department of History and Archaeology websites.

### Director

**Athanasios K. Vionis, Associate Professor**

## Contact Details

### ARCHAEOLOGICAL RESEARCH UNIT SECRETARIAT

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# Interdepartmental Programme in Byzantine Studies and the Latin East

The Department of Byzantine and Modern Greek Studies and the Department of History and Archaeology offer a joint specialised postgraduate programme in Byzantine Studies leading to an M.A. and/or Ph.D. degree.

The goal of the programme is to promote interdisciplinary approaches in the various fields of Byzantine Studies. More specifically, the programme aims at a multilevel and multifaceted study of Byzantine culture that combines the various theoretical and practical methodological tools of Philology, History, History of Art and Archaeology. In this way, the historical phenomenon “Byzantium” is firmly placed within the broader geographical framework of Medieval Europe and the Middle East.

## Introduction

The Department of Byzantine and Modern Greek Studies (BMGS) and the Department of History and Archaeology (HA) are offering a joint specialised postgraduate programme in Byzantine Studies and the Latin East at the M.A. and Ph.D. levels. There are two options available for the M.A. degree, either with or without writing a thesis.

## History of the Programme

The Interdepartmental Postgraduate Programme (IPP) in Byzantine Studies and the Latin East was established as the first programme of its kind at the University of Cyprus in September 2007 (originally as the IPP in Byzantine Studies). The creation of the IPP became possible due to the felicitous circumstance of several high-calibre philologists, historians, art historians and archaeologists being employed at the Departments of History and Archaeology and Byzantine and Modern Greek Studies and willing to work together. This synergy between the various disciplines of Byzantine and Medieval Studies in the form of an IPP remains uniquely innovative and presents an excellent opportunity to explore the Byzantine and, more generally, the medieval world from various complementary perspectives. This holistic approach is crucially supplemented by Cyprus' own cultural heritage, thanks to which the University of Cyprus is exceptionally well-suited to promoting the advancement and teaching of Byzantine and Medieval Studies. From the very foundation of the IPP, special emphasis has been placed on the balanced representation of all disciplines and on a variety of methodological approaches. In response to the need for continuous reassessment and improvement of the instruction on offer, the programme's structure was radically revised in 2020, ushering in today's simpler and more user-friendly format.

## The Programme's Fields of Study and Aims

The Programme is run by academic staff members of the BMGS and HA Departments, whose specialisms fall within the following fields of study: Byzantine Language and Literature, Byzantine History, Medieval History, the History

of Greeks under Latin Rule, Byzantine and Post-Byzantine Art and Archaeology, and Medieval Art and Archaeology. At least three (3) seminars are taught in each semester, one (1) in each of the following areas: (A) Byzantine Language and Literature, (B) Byzantine/Medieval History, (C) Byzantine/Medieval Art and Archaeology.

In order to ensure that, in the course of their studies, students will become acquainted with the full range of the fields and the various methodological approaches involved, the seminars offered are organised on the basis of the three-area scheme outlined above and address the following themes:

- a) Political, social, economic, and ecclesiastical history.
- b) Ideology and identity, cultural traditions, and intercultural contacts.
- c) Intellectual production and artistic creation.
- d) Daily life and material culture.
- e) Cyprus within the wider social, historical, and cultural context of the Eastern Mediterranean.

More specifically, the courses on offer within the framework of this IPP aim to further the students' acquaintance with:

- The principles and tools of the scientific fields of Byzantine Philology, Byzantine and Medieval History, Archaeology and Art History.
- Issues and reflections on the gradual transformation of the ancient into the medieval world.
- Phenomena of social stratification in Byzantium, such as the concept of social class, the self-perception of various social groups, as well as their relation to imperial authority.
- Various aspects of Byzantine relations with the Islamic world, on the one hand, and with the Latin world, on the other.
- The history, literary production, art and material culture of Byzantium and the Latin East from the fourth to the sixteenth century and the transition from Byzantine to Post-Byzantine culture.

## Learning Outcomes

At the programme's successful completion, students will:

- Be acquainted with and in a position to appreciate characteristic facets of the literary production, history, material culture, and artistic output of Byzantium and the Latin East.
- Be in a position to appreciate and discuss how the literary genres, texts, events, institutions, practices, monumental constructions, artefacts, and works of art that are the products of Byzantine and medieval culture are integrated into, shaped and invested with meaning by their context, whether historical, political, social, economic, or ideological.
- Be familiar with the theoretical framework of and the current methodological approaches to the analysis of various aspects of Byzantine and medieval culture.
- Appreciate the need (a) to adopt a critical stance towards traditional views and interpretations of Byzantine culture and (b) to re-evaluate them in the light of the results of current research and by employing the appropriate methodological tools.
- Be familiar with the nature of scholarly discourse as well as the methodology and the research tools of the Humanities (e.g., the use of manuscript and printed textual sources, visual testimonies, archaeological evidence, as well as digital technologies), and be in a position to present their views and to write research essays in a well-structured and rationally articulated manner, supported by the appropriate documentation.

Seminars are enriched by visits to archaeological sites, museums, monuments, and monastic libraries in Cyprus. Furthermore, students are afforded the opportunity to familiarise themselves with the research of local and visiting scholars, by attending the lectures organised within the framework of the Colloquium of Byzantine and Medieval Studies, while also being encouraged to participate in research projects coordinated by their instructors.

## MASTER OF ARTS IN BYZANTINE STUDIES AND THE LATIN EAST

### Admission

A maximum of ten (10) new students are admitted every September and January. The minimum duration of full-time enrolment is set at three (3) semesters, while the maximum duration of enrolment is eight (8) semesters. The language of instruction is Greek, except in the case of non-Greek-speaking students, in which English is used.

For admission to the M.A. Programme, the following documents and skills are required:

1. Undergraduate degree in Byzantine Language and Literature, History, Archaeology, History of Art, Classical Studies or a related field with a degree of First or Upper Second Class.
2. In addition to Modern Greek, satisfactory knowledge of one (1) other language from the remaining five (5)

international languages of Byzantine Studies (English, French, German, Italian, and Russian). Beside their first language, non-Greek speakers should have a good working knowledge of English.

Candidates who meet the requirements will be called for an interview at the premises of the University of Cyprus. Overseas applicants will be interviewed via teleconference.

### Application Procedure

Candidates may apply for the M.A. Programme in Byzantine Studies and the Latin East by using the online application system of the Graduate School of the University of Cyprus ([https://applications.ucy.ac.cy/postgraduate\\_appl/MNG\\_USER\\_en.login\\_frm](https://applications.ucy.ac.cy/postgraduate_appl/MNG_USER_en.login_frm)).

The closing date for applications is announced by the Graduate School (in spring for admission in September and in the fall for admission in January). For more information, consult the Graduate School's webpage: <https://ucy.ac.cy/graduateschool/en/>

All applications must be accompanied by the following documents:

1. The completed application form for admission into the M.A. Programme. Applications can be submitted in Greek or in English.
2. Brief CV and description of scholarly and research interests.
3. Scanned copies of university diplomas and other postgraduate diplomas (if applicable), or a verification of expected graduation in the summer or fall preceding enrolment in the postgraduate programme. In case of admission, the candidate will be asked to show the original diplomas.
4. A transcript and a detailed list of the courses taken by the candidate at the undergraduate level.
5. An essay (at least 4,000 words in length) on a topic of the candidate's choice in the fields of Byzantine Language and Literature, Byzantine and Medieval History and Archaeology, Byzantine and Medieval History of Art, Classical Studies, or a related field.
6. Two letters of recommendation from specialists, preferably university professors or renowned researchers.
7. A certificate of satisfactory knowledge of one (1) of the five (5) main languages of Byzantine Studies (English, French, German, Italian, and Russian).

### Academic Requirements

The M.A. Programme consists of 90 ECTS (1 ECTS = 25 working hours), for the completion of which two options are available: (a) with Master's thesis or (b) without Master's thesis. Students are expected to choose either of these options, after the successful completion of six (6) seminars.

#### (a) Option I: With M.A. Thesis

- A. Successful completion of six (6) postgraduate seminars, credited with 60 ECTS (each seminar is valued at 10

ECTS). Note that every semester full-time students are required to attend seminars classed under the programme's three (3) areas: (A) Philology, (B) History, and (C) Art and Archaeology. At the completion of their studies, students will have passed two (2) seminars in each area.

More specifically, the 250 hours corresponding to the 10 ECTS allotted each seminar are allocated as follows:

- 39 contact hours in class.
- 26 hours of preparation for the seminar.
- 120 hours of study and research for writing the seminar essay.
- 65 hours of writing the seminar essay.

B. Writing and defence of the M.A. thesis, which is credited with 30 ECTS, as follows:

- 20 ECTS for the research stage.
- 8 ECTS for the writing stage.
- 2 ECTS for presenting the thesis at the Colloquium of Byzantine and Medieval Studies.
- Defence of the M.A. thesis before a three-member examination committee.

The length of the M.A. thesis should normally be 20,000-25,000 words. The complete work should not exceed 100 pages. At the supervisor's discretion, the length of the thesis may be negotiable.

C. Attendance and participation in the Colloquium of Byzantine and Medieval Studies. Attendance is mandatory during the first three (3) semesters of study, and a brief summary (200-300 words) of each lecture must be submitted at the end of each semester.

### **(b) Option II: Without M.A. Thesis**

A. Successful completion of nine (9) postgraduate seminars, credited with 90 ECTS (each seminar is valued at 10 ECTS). Note that every semester full-time students are required to attend seminars classed under the programme's three (3) areas: (A) Philology, (B) History, and (C) Art and Archaeology. At the completion of their studies, students will have passed three (3) seminars in each area.

More specifically, the 250 hours corresponding to the 10 ECTS allotted each seminar are allocated as follows:

- 39 contact hours in class.
- 26 hours of preparation for the seminar.
- 120 hours of study and research for writing the seminar essay.
- 65 hours of writing the seminar essay.

B. Attendance and participation in the Colloquium of Byzantine and Medieval Studies. Attendance is mandatory during the first three semesters of study, and a brief summary (200-300 words) of each lecture must be submitted at the end of each semester.

### **Additional Information**

1. At least three (3) postgraduate seminars are offered every semester, one (1) in each area, from a set catalogue of courses (see 'Course Descriptions' below).
2. In compliance with the Postgraduate Studies Rules ([https://ucy.ac.cy/graduateschool/documents/Kanones/RULES\\_METAPTIXIAKIS\\_FOITISIS\\_ENGLISH1.pdf](https://ucy.ac.cy/graduateschool/documents/Kanones/RULES_METAPTIXIAKIS_FOITISIS_ENGLISH1.pdf)), the following assessment methods are used in postgraduate seminars:
  - Active and constructive participation in class and punctual submission of coursework: up to 10%.
  - Oral and written assignments (e.g., critical review of bibliography, short essays on assigned topics, seminar paper outline, etc.): up to 30%.
  - Seminar paper (oral presentation in class and written form ± 6000 words): up to 60% (evaluation criteria: content, structure, argumentation, methodology, critical thinking, use of sources, expression, honouring of the word limit). The final decision about the word limit rests with the instructor. The percentage may vary according to the field of specialisation and the instructor. In any case, students are informed of current assessment methods during the first week of any given semester, as mandated by the Postgraduate Studies Rules §1.7.
3. At the Colloquium of Byzantine and Medieval Studies, members of the academic staff of the University of Cyprus, invited researchers, and Ph.D. candidates present their research. M.A. students are required to actively participate with questions and comments. In the context of writing their M.A. theses (Option I), students present their work at the Colloquium.

For a more detailed breakdown of the curriculum (per semester), see the Programme's website (<https://ucy.ac.cy/byz/en/master/academic-requirements-master>).



## Course Description

Seminars are classified under the Programme's three areas of study, as attested to by the three letters opening each course code. In each area, in-depth examination of particular research issues is combined with broader interdisciplinary considerations.

### A. Byzantine Language and Literature (BMG 500-511)

#### **BMG 500 Editorial Theory and Practice**

This seminar examines the problems involved in editing Byzantine texts from a broad theoretical perspective in contrast to the traditional methods of reconstructing 'textual archetypes'. Following an in-depth study of various editorial theories, the students are expected to edit passages from prose and poetry in the learned and the vernacular idioms.

#### **BMG 501 Genre Issues**

Genre constitutes an important tool in the study, the reception, and interpretation of literature. However, Byzantinists have shown little interest in the history and development of the literary genres produced in Byzantium. In the framework of this seminar, issues referring to Byzantine literary genres and their interrelations are thoroughly discussed.

#### **BMG 502 Byzantine Narratives**

This seminar examines (through the use of narratological theory) the various narrative techniques and structural devices used by Byzantine authors to construct a narrative. During the seminar, students read texts such as historiographical works, lives of saints, romances, and epic narratives.

#### **BMG 503 Language and Literature**

This seminar examines the diachronic changes that medieval Greek went through, and the formation of dialects, as well as the development of the written language, which had to strike a balance between the constantly changing necessities of everyday communication, the ambitions of conservative education, and a literature based on antique models. Special emphasis is given to the analysis of a wide range of different linguistic and stylistic levels of the written language.

#### **BMG 504 Religious Poetry and Hymnography**

This seminar focuses on the history and the role of religious and ecclesiastical poetry in the intellectual life of Byzantium. The form and content of this poetry is studied through representative religious and ecclesiastical hymns from the beginning of the Christian era until the end of the Byzantine Empire. Based on selected genres of Byzantine hymnography, we examine the following issues: the origins of this hymnography, the conditions and reasons that led to the development and decline of specific forms, as well as the hymnographical production, innovative choices and particularities of well-known poets and melodists.

#### **BMG 505 Biography and Autobiography**

This seminar examines the different ways of self-representation in literary and non-literary texts. These different ways are closely connected with specific Byzantine mentalities and the possibilities of conceiving the Self. For the understanding of Byzantine autobiographical writing, the investigation into today's conventions that define one's self-image are indispensable.

#### **BMG 506 Byzantine Law**

This seminar provides an introduction both to the principles of Byzantine law (Justinian's Code and its Byzantine redactions, canon law) and to legal institutions (e.g., law courts), as well as to Byzantine jurisprudence (judicial decisions, opinions, etc.). Moreover, we examine texts witnessing everyday judicial procedures that concern primarily family and inheritance law (court decisions, wills), and which make clear that relations between legal theory and social reality were strained.

#### **BMG 507 Aspects of the Male and Female World**

What did it mean to be a man or a woman in Byzantine society? What were the masculine and feminine ideals of the Byzantine world? How did they evolve over time and vary according to social milieu? How are the male and female realms represented in Byzantine literature? These are some of the questions addressed in the context of this seminar through an examination of various texts from different genres and eras.

#### **BMG 508 Authors and their Audiences**

Rhetoric was an indispensable part of education in antiquity and, in spite of various transformations, it maintained its essential role until the end of Byzantium. The influence of rhetoric on the development of Byzantine literature was broad and deep. Based on rhetorical texts of religious and secular content, we examine the relation of the author with his public, the rhetorical rules, and the practices he followed, as well as the level of the language, and the style employed in connection with his education, his aims, and the public that he was addressing.

#### **BMG 509 Emotions and Mentalities**

This seminar examines the Byzantine emotional and intellectual world, and investigates what kind of emotions the Byzantines had, and how they conceived of both these emotions and themselves. The variability of apparent constants of human life and problems of interpretation connected to this variability are emphasised.

#### **BMG 510 Representations of the Body**

The meaning of the human body changes across cultures and periods. Different societies and cultures understand and treat the body in dissimilar ways. The relation that the Byzantines had with their bodies, and the meanings they attributed to them, are subjects that have not been sufficiently studied. In the framework of this seminar, the meanings that the body had in Byzantium and its representations in art and literature are examined.

#### **BMG 511 Conquests of Cities**

This seminar focuses on the subject of the conquest of Byzantine cities as presented in various literary genres. Characteristic examples are studied, beginning with historical accounts of the events and continuing with texts of rhetoric or poetry (monodies, Threnoi, etc.). Special emphasis is placed on works concerning the captures of Thessalonike and Constantinople.

## B. Byzantine and Medieval History (HIS 500-511)

### **HIS 500 Latin Palaeography and Diplomatics**

After a historical survey of the Latin scripts from Late Antiquity to the invention of movable print in the fifteenth century, this seminar investigates various genres of Latin documents and texts from the Middle Ages in manuscript form. Special emphasis is placed on transcription, with a goal to edit the texts, and create the pertinent scientific apparatus.

### **HIS 501 Byzantine Diplomatics**

This seminar provides students with the necessary skills for the scholarly investigation of official acts of the Byzantine State. In particular, we discuss the different forms of transmission of archival sources and the external and internal characteristics of official acts according to the usages of each issuing authority (for example, imperial and ecclesiastical acts, acts of public officials, and private acts). In addition, we treat research problems relating to the terminology and content of the documents. Finally, we present the modern techniques employed in the scholarly edition of documents.

### **HIS 502 Byzantine Social History**

This seminar focuses on the specifics of the State machinery and social structures in medieval political units. On the basis of selected examples from Byzantine history, we investigate fundamental notions, such as the bearers and exertion of State authority, the meaning of sovereignty, the dissemination and implementation of political decisions, the role of ceremony in political life, and so on. The second part of the seminar involves phenomena of the social stratification of Byzantium, such as the concept of social class, the self-perception of social groups, as well as their relationship with imperial authority.

### **HIS 503 Byzantium: Politics and Ideology**

After the Christianisation of the Roman Empire the emperor, who used to be considered as a god, became a ruler chosen by God, and embodied the idea of oecumenicity, and the Living Law. However, the emperor never ceased to flirt with the idea of his divine identity. In this seminar, we examine these and other aspects of imperial ideology through ceremonial texts, arengas of imperial documents and laws, literary texts, and Byzantine works of art.

### **HIS 504 Byzantium and Its Neighbours**

This seminar examines certain aspects of the relations between Byzantine culture and the neighbouring Islamic world, from the emergence of the Arabic caliphate in the seventh century until the final struggle of the Empire with the Ottoman Sultanate. Special emphasis is placed on the ambivalent character of these relations, which on a political-ideological level present harsh conflicts, whereas on a cultural level they are inspired by a true interest in the other side, and, in turn, lead to fruitful mutual influences.

### **HIS 505 Byzantine Economic History**

The Byzantine economic system, just as that of every other medieval state, was based to a great degree on agriculture, while trade did not surpass the level of local exchanges until this sector became a vital factor in economic development with the appearance of the Italian trading republics in the Byzantine world. In this context, we examine sub-topics relating to the methods of production, the transportation of goods, taxation, the circulation of money, the market, etc. Special emphasis is placed on assessing to what extent the economic history of a region can be written when statistical data are completely lacking.

### **HIS 506 The Crusades and the Latin East**

The aim of the seminar is to compare the institutions that were created as a result of the conquest and settlement of areas in the Eastern Mediterranean and the Byzantine world by Westerners within the context of the crusades (Kingdom of Jerusalem, Lusignan Kingdom of Cyprus, Latin Empire of Constantinople, Principality of the Morea, and Venetian Crete). The study of the relationship between, on the one hand, the imported feudal political, legal, social, and economic institutions and, on the other, the preexisting ones allows the drawing of conclusions regarding the nature of the resulting system (whether it was entirely feudal, 'colonial', or hybrid) and the extent of the survival of the Byzantine institutions. Furthermore, it allows a better understanding of the formation of a cohabitation framework for the Latin settlers with the indigenous Greek and other groups in both the religious and the cultural domains, as well as of those factors that determined the degree of adaptability and interaction and the creation of new identities.

### **HIS 507 Latin Rule in the Greek World**

This seminar investigates various aspects of the history of regions in which Greeks lived under Latin rule during the Middle Ages, namely Sicily and Southern Italy, Syria and Palestine, Cyprus, Frankish Greece, Constantinople, and Crete and other islands. Special attention is devoted to the political, ecclesiastical, and social position and situation of the Greeks.

### **HIS 508 Oriens et Occidens**

This seminar examines the image of the Other that Western authors formed about the Byzantines in the Middle Ages and vice versa. It focuses on the question of how this image varies according to the social position of the author, the genre of the text, and the historical period in which it was written.

### **HIS 509 Byzantine Cyprus**

Using the example of Byzantine Cyprus, this seminar examines the various difficulties that the investigation and interpretation of the periphery and the border areas of Byzantium present, since the centralisation tendencies of the capital clashed with local traditions and particularities, as well as with the spheres of influence of neighbouring political powers.

### **HIS 510 Frankish and Venetian Cyprus**

This course looks at different aspects of the political, social, economic, cultural, ideological, and religious history of Cyprus from the conquest of Richard the Lionheart in 1191 down to the Ottoman conquest of 1571. Under the Lusignan dynasty, the Kingdom of Cyprus gradually evolved from a fragmented cluster of indigenous and alien linguistic and religious communities into a more unified yet still multicultural society of Cypriots by the end of the reign of King Hugh IV (1324-1359). Following Peter I's murder in 1369, however, this process was radically redirected in the wake of the Genoese and Mamluk invasions of the 1370s and 1420s and finally with the Venetian takeover in the 1470s.

### **HIS 511 Historiography: Problems of Historicity and Ideology in the Latin-Ruled Greek World**

The seminar aims at the comparative study of historical texts of a varied nature (chronicles, annals, narratives in prose, narrative poems, manuscript historical notes, memoranda, and relazioni) from the Latin-ruled Greek world (Cyprus, Morea, Ionian Sea, Crete, the Aegean) during the Byzantine and Post-Byzantine periods. Various aspects of the process of history writing will be investigated, such as historiographical genres, language and style, historicity and reliability of the texts, and the projected ideology in connection with each text's socio-political context and

authorial subjectivity. A comparison with texts of the Byzantine and western historiographical traditions as well as with texts from the Latin East will allow us to trace relationships and influences and will reveal those factors that favoured a historiographical production on Cyprus that surpassed significantly that in other areas in volume, span of time, and variety.

## C. Byzantine and Medieval Art and Archaeology (ARC 500-511)

### **ARC 500 Survey of Research and Interpretative Approaches to Byzantine Archaeology**

Beyond the materiality of archaeological remains and their positivist documentation, Byzantine culture, very much like any other culture, encompasses symbolic meanings and ideas. Despite the fact that Byzantine archaeology was long located in the periphery of modern archaeological research, it has recently begun to acquire a new dimension in the international academic scene by applying methodological approaches and interpretative models 'borrowed' from other fields of research, such as history, anthropology, sociology, and psychology. The aim of this seminar is to (a) examine the interpretative approaches and advances of Byzantine archaeology in the international sphere of archaeological research, and (b) to evaluate the methodological approaches that are currently followed for understanding the Byzantine material remains through the exploration of specific case-studies.

### **ARC 501 The Study of Ceramics in Byzantine Archaeology**

Pottery comprises the most common find in an archaeological excavation. The study of Byzantine and Post-Byzantine ceramics, however, had long been overlooked and its precise chronology is being continually refined. The aim of this seminar is the examination of the typo-chronology of Byzantine and Post-Byzantine common- and table-wares, as well as the evaluation of the information they provide for understanding Byzantine society.

### **ARC 502 The Archaeology of the Byzantine Economy**

This seminar examines issues related to economy and commercial enterprises in the Byzantine Empire, focusing not only on the study of archaeological finds, such as coins, amphorae, and other items of commercial value, but also on the study of urban economy, the relationship between town and country, and the exploitation of agricultural lands.

### **ARC 503 The Archaeology of Death in Byzantium**

Popular reactions to the idea of death and the afterlife, the preparation of the dead, and burial practices are aspects that belong to the sphere of Byzantine ideology. This seminar examines issues related to death and burial in the Byzantine world (fifth-fifteenth centuries) on the basis of archaeological remains and the visual arts, and the aid of written sources. More specifically, the seminar examines the typological development of cemeteries and graves, the decoration of grave monuments and its meaning, items accompanying graves and their symbolism, as well as the evaluation of conclusions regarding Byzantine living standards and conditions through the study of skeletal remains.

### **ARC 504 Byzantine Material Culture and Identity**

This seminar aims to study the various 'identities' of the Byzantine people, as these are expressed in the material remains of the period. Emphasis is given to the 'identification' of identity in aspects of the material culture (e.g., the built environment, the Byzantine house, costume, items of domestic comfort), in other words, the expression of religious, political, cultural, social,

'ethnic', or other identity. Moreover, the seminar examines the role of the Byzantine civilisation in the formation of the socio-political and / or cultural ideology of contemporary states, such as Greece, Cyprus, and Turkey.

### **ARC 505 Byzantine Icon Theory**

The Byzantines' perception of the role of religious art dictated to a great extent the latter's formal characteristics and iconography. Through the study of relevant written sources and the analysis of works of art, the principles that governed the creation of religious images in Byzantium are investigated, and the stages of the theoretical discussion that led to the definition of the role of religious images within the context of Orthodox worship are explored.

### **ARC 506 Byzantine 'Secular' Art**

It is commonly thought that Byzantine art, architecture included, was a predominantly religious art and that its main purposes were the expression and dissemination of Christian dogma and the consolidation of the position of the Church. Still, works of art with a non-Christian content or character were created throughout the Byzantine millennium, ranging from palaces and public buildings to ivory caskets adorned with mythological themes. It is on the study of such works that the present seminar focuses. Theoretical issues concerning the definition of the term 'secular' within the context of a Christianocentric culture will be examined parallel to issues relating to the typology, iconography, function, and reception of secular art in Byzantium.

### **ARC 507 Dress: The Mirror of Byzantine Society**

In Byzantium, dress was one of the most important means by which individuals and social groups constructed and projected their identity outwards, and by which this identity was perceived by others. This seminar investigates how gender, age, family position, religious beliefs, moral values, ethnicity, profession, social status, and economic situation are expressed in the choice of clothing and accessories, as well as in the adoption of particular hairstyles and make-up.

### **ARC 508 Relations between Centre and Periphery: Byzantine Art in Cyprus**

Within the broader context of the dynamics between the centre and the periphery, various manifestations of artistic expression in Cyprus are discussed with the purpose of highlighting its distinguishing features. Special emphasis is given to tracing the mechanisms of transmission and assimilation of the general trends emanating from the major artistic centres of the Empire by the Cypriot artistic idiom.

### **ARC 509 From Paganism to Christianity**

This seminar aims to explore the gradual 'transition' from the ancient world and paganism to Byzantium and Christianity through the study of archaeological remains and works of art. Emphasis is given to the identification of this procedure through the symbolism of early Christian art and architecture: the transformation of ancient temples into Christian churches, the building of new basilicas, sculpture and monumental art, the transformation of Late Antique urban space, items facilitating Christian worship and burial practices.

### **ARC 510 Art and Identity at the Time of the Crusades**

The seminar explores the various forms of artistic expression that flourished in the service of the multicultural societies of the Eastern Mediterranean during the period of the Crusades. Special emphasis will be placed on the study of the fertile interaction between the arts of the East and West.

## ARC 511 Art in Cyprus under Latin Rule

This seminar explores both the products and the conditions for artistic creativity on Cyprus during the period of Latin rule. Within this framework, the students will have the opportunity to study representative works mainly of secular and ecclesiastical painting and architecture within their historical, religious, social, and cultural context. Particular emphasis will be placed on the exploration of the dynamic interaction between the deeply rooted Byzantine artistic tradition of Cyprus and the artistic traditions imported from the West and the Crusader Levant.

## Ph.D. PROGRAMME IN BYZANTINE STUDIES AND THE LATIN EAST

### Admissions

New students are admitted in September and January. The minimum duration of study is three (3) years from the day of admission to the Ph.D. Programme, whereas the maximum duration is eight (8) years. The language of instruction can be Greek, English, French, or German (depending on the thesis supervisor).

For admission to the Ph.D. Programme, the following documents and skills are required:

1. Postgraduate degree (M.A./Mastère) in Byzantine Studies (Language and Literature, History, Archaeology, History of Art), Medieval Studies (Language and Literature, History, Archaeology, History of Art) or a related field.
2. In addition to Modern Greek, satisfactory knowledge of one (1) other language from the remaining five (5) international languages of Byzantine Studies (English, French, German, Italian, and Russian); Beside their first language, non-Greek speakers should have a good working knowledge of English.

Candidates who meet the requirements will be called for an interview at the premises of the University of Cyprus. Overseas applicants will be interviewed via teleconference.

### Application Procedure

Candidates may apply for the Ph.D. Programme in Byzantine Studies and the Latin East through the online application system of the Graduate School of the University of Cyprus ([https://applications.ucy.ac.cy/postgraduate\\_appl/MNG\\_USER\\_en.login\\_frm](https://applications.ucy.ac.cy/postgraduate_appl/MNG_USER_en.login_frm)).

Applications may be submitted in either Greek or English.

The closing date for applications is announced by the Graduate School (in spring for admission in September and in the fall for admission in January). For more information, consult the Graduate School's webpage: <https://ucy.ac.cy/graduateschool/en/>

All applications must be accompanied by the following documents:

1. Detailed CV and research proposal.
2. Copy (scan) of postgraduate degree (M.A./Mastère) from a recognised university or statement of expected graduation in the summer or fall preceding enrolment

in the Ph.D. programme. After admission, the candidate will be asked to show the original.

3. Copy (scan) and grade of undergraduate university degree.
4. A transcript and a detailed list of the courses taken by the candidate at the undergraduate and M.A. levels.
5. Two (2) letters of recommendation from specialists, preferably university professors or renowned researchers.
6. Submission of the candidate's M.A. thesis.
7. Certificate testifying to a satisfactory knowledge of one (1) of the five (5) international languages of Byzantine Studies (English, French, German, Italian, and Russian).

The instructors may also set additional criteria and quality indicators, such as: (a) number of candidates' publications in scientific journals, (b) candidates' participation in seminars, symposia, research programmes, (c) presentations by candidates at conferences, (d) professional experience, etc.

### Academic Requirements

The Ph.D. Programme requires the successful completion of 240 ECTS (1 ECTS = 25 working hours), which are distributed as follows:

- 60 ECTS - Postgraduate courses (possession of an M.A. degree or equivalent entitles the student to a partial or full exemption from this requirement).
- 120 ECTS - Research stages (I-IV).
- 60 ECTS - Writing stages (I-II).
- 0 ECTS - Comprehensive examination.
- 0 ECTS - Examination of thesis proposal.
- 0 ECTS - Colloquium of Byzantine and Medieval Studies (I-IV).

In more detail, candidates having enrolled in the Ph.D. Programme are expected to successfully tackle the following tasks:

1. Comprehensive examination: Between the third (3rd) and the end of the sixth (6th) semester, at the latest, the Ph.D. candidate is required to pass a comprehensive examination before a three-member scientific committee, which is appointed by the departments involved (BMGS and HA), following the recommendation of the academic supervisor. The examination is oral and its duration is three (3) hours. It comprises three (3) subjects selected by the candidate from a range of topics representative of all the academic areas of the postgraduate programme, in agreement with the members of the scientific committee.
2. Approval of detailed thesis proposal: Following the comprehensive examination, and within a period of two (2) to four (4) semesters maximum, the Ph.D. candidate submits a detailed thesis proposal. The proposal is evaluated by a three-member scientific committee, which is appointed by the departments involved (BMGS



and HA) following the recommendation of the academic supervisor. Only after the proposal's approval is the candidate eligible to begin thesis work.

3. Research and writing of Ph.D. thesis.
4. Attendance of and active participation in the Colloquium of Byzantine and Medieval Studies, including the presentation of a 45/50-minute research paper.
5. Submission and defence of the Ph.D. dissertation before a five-member committee, within the maximum limit of eight (8) years since admission to the programme and according to the Postgraduate Studies Rules of the University of Cyprus.

The length of the Ph.D. thesis should normally be about 80,000-120,000 words (including footnotes and bibliography, but excluding appendices, editions of texts, tables, etc.). At the discretion of the academic supervisor, the length of the thesis may be negotiable.

## Contact Details

### COORDINATORS OF THE INTERDEPARTMENTAL POSTGRADUATE PROGRAMME IN BYZANTINE STUDIES AND THE LATIN EAST

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For more information, visit the Programme's webpage: <https://ucy.ac.cy/byz/el/>

# MEDICAL SCHOOL



# Medical School

[www.ucy.ac.cy/medical](http://www.ucy.ac.cy/medical)

The Medical School of the University of Cyprus was established by law on 7th November 2008.

The undergraduate programme of studies is a six-year programme consisting of three phases. Phase I (1st year of studies) is a year of preparatory studies in basic exact and pure sciences. Phase II (2nd and 3rd year of studies) consists of interconnected studies in basic medical and clinical studies. Phase III (4th, 5th, 6th year of studies) consists of clinical studies, which are delivered in hospitals and health centers in Nicosia.

The Medical School will be offering two (2) postgraduate programmes of studies at Masters level in the near future: "Precision Medicine in Clinical Practice" and "Medical Research". The Medical School is also following the appropriate procedures, in order to offer a postgraduate programme of studies at Doctor of Philosophy (Ph.D) level.

## Contact Details

### Medical School

**Tel.: 22894352, Fax: 22895346**

**E-mail: [med@ucy.ac.cy](mailto:med@ucy.ac.cy)**

[www.ucy.ac.cy/medical](http://www.ucy.ac.cy/medical)



Faculty of PURE AND  
APPLIED SCIENCES





## DEPARTMENTS

Biological Sciences

Chemistry

Computer Science

Mathematics and Statistics

Physics

# Department of Biological Sciences

[www.ucy.ac.cy/biol](http://www.ucy.ac.cy/biol)

The Department of Biological Sciences offers studies in the following postgraduate programmes:

- **M.Sc. Programmes**

- M.Sc. in Molecular Biology and Biomedicine
- M.Sc. in Biomedical Sciences
- M.Sc. in Biodiversity and Ecology

- **Ph.D. Programmes**

- Ph.D. in Biomedical Sciences
- Ph.D. in Biodiversity and Ecology

## Introduction

The Department of Biological Sciences is involved in research and teaching in a variety of disciplines within the field of Biological Sciences, including Genetics, Cancer Biology, Immunology, Cell Biology, Developmental Biology, Embryology, Bioinformatics, Epigenetics, Virology, Ecology and Biodiversity. The Department currently represents the most concerted and diverse research effort in biological research, as well as the most competitive, in terms of infrastructure and external research funding, on the island.

Research and postgraduate teaching in the Department are, conducted by 12 faculty members, each heading a research laboratory in a distinct field of research. All of them were trained and/or have worked in renowned universities or research institutions, before taking up their current posts.

The research output and external funding of the Department are substantial, despite its relatively short existence (first postgraduate students admitted in September 2003). For example, the Department succeeded in producing internationally competitive, cutting-edge research, that has been published in high impact, peer-reviewed, scientific journals. The Department's faculty members have succeeded in obtaining major external competitive funding awards for research, amounting to several million Euros. This funding includes the prestigious and highly competitive ERC starting grant, the competitive Marie Skłodowska-Curie and other EU framework programme grants. It also attracted significant funding from the Cyprus Research Promotion Foundation, the national research funding public agency. Overall, since its establishment in 2002, the Department has received more than 16 million Euros in externally sponsored research funding.

The core mission of the Department of Biological Sciences is:

1. To strive to engage in high caliber and competitive research that represents cutting edge topics in current Biology.
2. To foster international research collaborations and maintain an internationally extrovert profile.
3. To educate the new generation of young biologists, and scientifically train researchers and scientific leaders of Cyprus in Biology. The overall aim is to produce scientists, who are en par with international graduates and can be effectively recruited in the

private job market, secondary education, the health sector, or remain engaged in local and international research activity.

The Department actively encourages student exchanges through the ERASMUS+ Programme, in order to provide students with beneficial formative exposure to other European universities.

## Postgraduate Programmes

All academic courses in our postgraduate programmes of study are taught in English. M.Sc. and Ph.D. Degrees in Biomedical Sciences, as well as the Ph.D. in Biodiversity and Ecology, encompass classroom training and a strong experimental/laboratory-based research component. The M.Sc. in Molecular Biology and Biomedicine Programme involves bibliography-based research. The M.Sc. in Biodiversity and Ecology offers a research-based or a bibliography-based thesis component. Applicants, who join this programme of study, will be offered one of these two options upon acceptance to the programme.

## Admission to the Postgraduate Programmes

The Department announces positions for each of its postgraduate degrees twice a year, after approval by the relevant authorities of the University: In October for entry the following January and in February for entry the following September. All applications must be submitted online.

It is noted that for English-taught postgraduate programmes of study at the University of Cyprus, admission criteria include certified knowledge of the English language. Prospective students, who have previously graduated from an English-taught school or English-taught higher education institution, are excluded from this requirement.

Students, who apply for a laboratory-based research degree, are strongly encouraged to contact departmental faculty members prior to or during their application process, to discuss the possibility of securing a laboratory position for thesis research and to be able to select which laboratory best fits their interests. Upon acceptance to the laboratory-based research degrees, all students should have already identified a faculty member that would agree to supervise them for the laboratory component of their research work.

In addition to the general requirements, candidates are encouraged to start the admission procedure before the completion of their undergraduate study. However, they must hold an undergraduate degree by the beginning of the postgraduate programme.

The Department recommends that applicants to the Ph.D. programmes hold a Master's degree, or expect to obtain it by the beginning of their Ph.D. However, the Department may accept candidates for Ph.D. degrees who do not hold a Master's degree. Candidates, who have already obtained a Master's degree from the University of Cyprus or another recognised university, may be exempted from some of the required courses on a case-by-case evaluation.

For further information on the application procedures and deadlines, please visit the Department's website or contact the Department Secretariat or the Graduate School of the University of Cyprus.

### MASTER DEGREE IN MOLECULAR BIOLOGY AND BIOMEDICINE

The Master Degree in Molecular Biology and Biomedicine does not involve a laboratory-based research dissertation. To obtain this degree, candidates must successfully complete 90 ECTS, as follows:

The course BIO 680 (Scientific Methodology in Molecular Biology) carries 20 ECTS and it is compulsory. Students are eligible to sign up for this course, after they have successfully completed at least 60 ECTS of restricted elective courses. Seminar attendances (BIO 800 and BIO 801) in separate semesters are also compulsory, along with seminar BIO 805 the latter of which, is offered in the Spring Semester (Table A). The course BIO 605 Basic Laboratory Health and Safety Training (Table A) is also compulsory and must be successfully completed during the Fall Semester of the first year of study. The remaining 70 ECTS are fulfilled with restricted elective courses (Table B).

The duration of study is at least three semesters with a maximum of eight semesters. Students enrolled in this Master degree are eligible to apply for a change of Programme, as stipulated by the Postgraduate Studies Regulations. The application is subject to approval by the Postgraduate Studies Committee of the Department and the Departmental Council.

For more information, please consult the Department Secretariat or the Graduate School of the University of Cyprus.

**TABLE A**

		ECTS
<b>Compulsory Courses (Master in Molecular Biology and Biomedicine)</b>		
BIO 605	Basic Laboratory Health and Safety Training	0
BIO 680	Scientific Methodology in Molecular Biology	20
BIO 800	Postgraduate Seminar Series I	0
BIO 801	Postgraduate Seminar Series II	0
BIO 805	Search and Management of Bibliographic Sources	0

**TABLE B**

		ECTS
<b>Restricted Elective Courses (Master in Molecular Biology and Biomedicine)</b>		
BIO 610	Special Topics in Human Molecular and Medical Genetics I	10
BIO 620	Selected Topics in Cell Biology	10
BIO 630	Nucleic Acids	10
BIO 640	Molecular Biology I	10
BIO 650	Special Topics in Bioinformatics	10
BIO 660	Selected Themes in Developmental and Stem Cell Biology	10
BIO 670	Imaging in Biological Sciences	10
BIO 690	Special Topics in Current Biological Sciences I	10
BIO 691	Special Topics in Current Biological Sciences II	10
BIO 710	Special Topics in Human Molecular and Medical Genetics II	10
BIO 720	Special Topics in Biochemistry	10
BIO 730	Molecular Diagnostics	10
BIO 740	Cellular Communication	10
BIO 750	Cancer Biology	10
BIO 760	Topics in Genomics and Proteomics	10
BIO 768	Genes, Microbes and Environment in Intestinal Health	10
BIO 850	Experimental Embryology Course	10
BIO 851	Quantitative Human Genetics	10
BIO 860	Molecular Biology of Tumour Viruses	10
BIO 867	Selected Topics in Evolutionary Biology	10
BIO 869	Current Topics in Drosophila Biology	10
BIO 870	Molecular Biotechnology	10
BIO 871	Molecular Ecology	10

### MASTER DEGREE IN BIOMEDICAL SCIENCES

For the completion of the Master Degree in Biomedical Sciences, 90 ECTS are required, 60 of which are fulfilled with restricted elective courses (Table C), as well as the two seminar classes (BIO 800 and BIO 801) in two separate semesters, which are also compulsory along with seminar BIO 805 the latter of which, is offered in the Spring Semester (Table D). The course BIO 605 Basic Laboratory Health and Safety Training (Table D) is also compulsory and must be successfully completed during the Fall Semester of the first year of study. After successfully completing at least 60 ECTS in restricted elective courses, students can register for the compulsory laboratory-based research dissertation, which carries 30 ECTS, for at least one semester (Table D). Students, who do not complete their thesis research dissertation in one semester, can register for BIO 601 Continuation of Master Research Dissertation in Biomedical Sciences. Upon completion, this dissertation will be written (M.Sc. thesis) and presented in the form of an open seminar. Candidates must also successfully pass an oral examination before a three-member Special Examinations Committee.



The duration of study is at least three semesters, with a maximum of eight semesters. Students enrolled in this degree are eligible to apply for a change of programme, as stipulated by the Postgraduate Studies Regulations. The application is subject to approval by the Postgraduate Studies Committee of the Department and the Departmental Council.

**TABLE C**

		ECTS
<b>Restricted Elective Courses (Master in Biomedical Sciences)</b>		
BIO 610	Special Topics in Human Molecular and Medical Genetics I	10
BIO 620	Selected Topics in Cell Biology	10
BIO 630	Nucleic Acids	10
BIO 640	Molecular Biology I	10
BIO 650	Special Topics in Bioinformatics	10
BIO 660	Selected Themes in Developmental and Stem Cell Biology	10
BIO 670	Imaging in Biological Sciences	10
BIO 690	Special Topics in Current Biological Sciences I	10
BIO 691	Special Topics in Current Biological Sciences II	10
BIO 710	Special Topics in Human Molecular and Medical Genetics II	10
BIO 720	Special Topics in Biochemistry	10
BIO 730	Molecular Diagnostics	10
BIO 740	Cellular Communication	10
BIO 750	Cancer Biology	10
BIO 760	Topics in Genomics and Proteomics	10
BIO 768	Genes, Microbes and Environment in Intestinal Health	10
BIO 850	Experimental Embryology Course	10
BIO 851	Quantitative Human Genetics	10
BIO 860	Molecular Biology of Tumour Viruses	10
BIO 867	Selected Topics in Evolutionary Biology	10
BIO 869	Current Topics in Drosophila Biology	10
BIO 870	Molecular Biotechnology	10
BIO 871	Molecular Ecology	10

**TABLE D**

		ECTS
<b>Compulsory Courses (Master in Biomedical Sciences)</b>		
BIO 600	Continuation of Master Research Dissertation in Biomedical Sciences	1
BIO 605	Basic Laboratory Health and Safety Training	0
BIO 800	Postgraduate Seminar series I	0
BIO 801	Postgraduate Seminar series II	0
BIO 805	Search and Management of Bibliographic Sources	0
BIO 830	Master Research Dissertation in Biomedical Sciences	30

## MASTER DEGREE IN BIODIVERSITY AND ECOLOGY

For the Master Degree in Biodiversity and Ecology, 90 ECTS are required, which can be fulfilled by either taking 60 ECTS in elective courses and a research-based thesis dissertation (30 ECTS) or by taking 70 ECTS in elective courses and a literature-based thesis dissertation (20 ECTS). The route of study is determined during the admission process in the program of study. In addition, seminar attendance (BIO 800 and BIO 801) in two separate semesters is compulsory, along with seminar BIO 805 the latter of which, is offered in the Spring Semester. Course BIO 605 Basic Laboratory Health and Safety Training (Table F) is also compulsory and must be successfully completed during the Fall Semester of the first year of study. The laboratory-based or field-based research dissertation (BIO 831) has a duration of at least one semester and carries 30 ECTS (Table F). Students, who do not complete their thesis research dissertation in one semester, can register for BIO 601 Continuation of Master Research Dissertation in Biodiversity and Ecology. Upon completion, the dissertation will be presented in the form of an open seminar, followed by an oral examination, before a three-member Special Examinations Committee. The literature-based thesis dissertation (BIO 681), which has as a prerequisite the successful completion of at least 60 ECTS in elective courses (Table E), has a total duration of one semester, involves undertaking a bibliographical study and carries 20 ECTS (Table G).

The duration of study is at least three semesters with a maximum of eight semesters. Students enrolled in this Master are eligible to apply for a change from research-based to literature-based thesis (and vice versa), as stipulated by the Postgraduate Studies Regulations. The application is subject to approval by the Departmental Postgraduate Studies Committee and the Departmental Council.

**TABLE E**

		ECTS
<b>Restricted Elective Courses (Master in Biodiversity and Ecology)</b>		
BIO 650	Special Topics in Bioinformatics	10
BIO 760	Topics in Genomics and Proteomics	10
BIO 851	Quantitative Human Genetics	10
BIO 858	Conservation Biology	10
BIO 859	Management of Protected Areas	10
BIO 861	Advanced Issues in Ecology	10
BIO 862	Biodiversity Patterns	10
BIO 863	Selected Topics in Behavioural Ecology	10
BIO 864	Biodiversity of Cyprus	10
BIO 865	Geographical Information Systems and Remote Sensing in Ecology	10
BIO 866	Marine Ecology	10
BIO 867	Selected Topics in Evolutionary Biology	10
BIO 868	Fieldwork	10
BIO 871	Molecular Ecology	10

**TABLE F**

		ECTS
<b>Compulsory Courses for Research-based Thesis</b>		
BIO 601	Continuation of Master Research Dissertation in Biodiversity and Ecology	1
BIO 605	Basic Laboratory Health and Safety Training	0
BIO 800	Postgraduate Seminar Series I	0
BIO 801	Postgraduate Seminar Series II	0
BIO 805	Search and Management of Bibliographic Sources	0
BIO 831	Master Research dissertation in Biodiversity and Ecology	30

**TABLE G**

		ECTS
<b>Compulsory Courses for Literature-based Thesis</b>		
BIO 605	Basic Laboratory Health and Safety Training	0
BIO 681	Scientific Methodology in Biodiversity and Ecology	20
BIO 800	Postgraduate Seminar Series I	0
BIO 801	Postgraduate Seminar Series II	0
BIO 805	Search and Management of Bibliographic Sources	0

## DOCTORATE DEGREE IN BIOMEDICAL SCIENCES OR IN BIODIVERSITY AND ECOLOGY

Candidates enrolled in one of the two Ph.D. degrees must complete 80 ECTS in non-research postgraduate courses (Restricted Elective Courses in either Table H or I, depending on the Ph.D. degree) and attend the Postgraduate Seminar Series of the Department (BIO 800-803) for at least four semesters (Table J). Course BIO 605 Basic Laboratory Health and Safety Training (Table J) is also compulsory and must be successfully completed during the Fall Semester of the first year of study. Incoming students, who already hold a Master's degree in a relevant scientific area or who have attended postgraduate classes in relevant subjects (in this or other recognized universities), can be exempted from taking courses up to 60 ECTS. This requires the submission of an application at the beginning of their studies, to the Postgraduate Studies Committee of the Department that is subject to approval by this Committee, as well as the Departmental Council (students are advised to consult with their Research Supervisor prior to submission of the application).

After the completion of the postgraduate courses (excluding the Postgraduate Seminars), students will have to pass the Comprehensive Examination (BIO 810, Table J). This will involve the preparation and presentation of a research proposal, in an area different from that of their Ph.D. research dissertation. Students officially become Ph.D. candidates, after successful completion of the Comprehensive Examination, which must be completed between the third and the seventh semester. Another requirement for obtaining the Ph.D. degree is the

preparation and successful presentation of a research proposal, regarding the Ph.D. research dissertation itself (BIO 811 Ph.D. Research Proposal in Table J). Successful completion of the Comprehensive Examination (BIO 810) is also a prerequisite for the presentation of Research Proposal regarding their Ph.D. Research Dissertation (BIO 811), which has to be presented 2 to 4 semesters after success in the Comprehensive Examination. Both the Comprehensive Examination (BIO 810) and the Ph.D. Research Proposal (BIO 811) must include a detailed description of the aims and methodology and must adhere to guidelines and regulations of the Department. Each of these proposals will be presented before a three-member Committee.

After the successful completion of the courses (the aforementioned Restricted Elective Courses that collectively amount to 80 ECTS), and while they are carrying out their Ph.D. research, Ph.D. candidates are obliged to enrol every semester for at least four semesters in the appropriate research stage of their Ph.D. (BIO 820-828 Ph.D. Research Stages I-IX, Table L). Upon completion of their research work, students must enrol in at least one 'Write-up Stage' (BIO 835 - BIO 842 Thesis Write-up Stages I-V, Table L) before defending their Ph.D. thesis.

For the evaluation of the progress of their Ph.D. research work, each Ph.D. Candidate must give an oral presentation before a three-member Committee regarding their research progress, within one year of their successful completion of the Research Proposal and on a yearly basis afterwards (BIO 812-818 Annual Progress Report I-VII, Table K). This Committee will serve as an Advisory Committee of the candidate, as stipulated by the internal regulations of the Department.

The Ph.D. thesis defence takes place before a five-member Examination Committee. In addition, prior to submission of the Ph.D. thesis dissertation, the Department requires that every Ph.D. candidate has at least one first-author publication (or accepted for publication) of innovative research work for their Ph.D., in a peer-reviewed internationally recognized scientific journal.

**TABLE H**

		ECTS
<b>Restricted Elective Courses (Ph.D. in Biomedical Sciences)</b>		
BIO 610	Special Topics in Human Molecular and Medical Genetics I	10
BIO 620	Selected Topics in Cell Biology	10
BIO 630	Nucleic Acids	10
BIO 640	Molecular Biology I	10
BIO 650	Special Topics in Bioinformatics	10
BIO 660	Selected Themes in Developmental and Stem Cell Biology	10
BIO 670	Imaging in Biological Sciences	10
BIO 690	Special Topics in Current Biological Sciences I	10
BIO 691	Special Topics in Current Biological Sciences II	10
BIO 710	Special Topics in Human Molecular and Medical Genetics II	10
BIO 720	Special Topics in Biochemistry	10

BIO 730	Molecular Diagnostics	10
BIO 740	Cellular Communication	10
BIO 750	Cancer Biology	10
BIO 760	Topics in Genomics and Proteomics	10
BIO 768	Genes, Microbes and Environment in Intestinal Health	10
BIO 780	Independent Study I	10
BIO 790	Independent Study II	10
BIO 850	Experimental Embryology Course	10
BIO 851	Quantitative Human Genetics	10
BIO 860	Molecular Biology of Tumour Viruses	10
BIO 867	Selected Topics in Evolutionary Biology	10
BIO 869	Current Topics in Drosophila Biology	10
BIO 870	Molecular Biotechnology	10
BIO 871	Molecular Ecology	10

**TABLE I**

		ECTS
<b>Restricted Elective Courses (Ph.D. in Biodiversity and Ecology)</b>		
BIO 650	Special Topics in Bioinformatics	10
BIO 760	Topics in Genomics and Proteomics	10
BIO 780	Independent Study I	10
BIO 790	Independent Study II	10
BIO 851	Quantitative Human Genetics	10
BIO 858	Conservation Biology	10
BIO 859	Management of Protected Areas	10
BIO 861	Advanced Issues in Ecology	10
BIO 862	Biodiversity Patterns	10
BIO 863	Selected Topics in Behavioural Ecology	10
BIO 864	Biodiversity of Cyprus	10
BIO 865	Geographical Information Systems and Remote Sensing in Ecology	10
BIO 866	Marine Ecology	10
BIO 867	Selected Topics in Evolutionary Biology	10
BIO 868	Fieldwork	10
BIO 871	Molecular Ecology	10

**TABLE J**

		ECTS
<b>Compulsory Courses (Ph.D. in Biomedical Sciences or Ph.D. in Biodiversity and Ecology)</b>		
BIO 605	Basic Laboratory Health and Safety Training	0
BIO 800	Postgraduate Seminar Series I	0
BIO 801	Postgraduate Seminar Series II	0
BIO 802	Postgraduate Seminar Series III	0
BIO 803	Postgraduate Seminar Series IV	0
BIO 810	Comprehensive Examination of Ph.D. students	10
BIO 811	Ph.D. Research Proposal	0

**TABLE K**

		ECTS
<b>Annual Progress Report (Ph.D. in Biomedical Sciences or Ph.D. in Biodiversity and Ecology)</b>		
BIO 812	Annual Progress Report I	0
BIO 813	Annual Progress Report II	0
BIO 814	Annual Progress Report III	0
BIO 815	Annual Progress Report IV	0
BIO 816	Annual Progress Report V	0
BIO 817	Annual Progress Report V	0
BIO 818	Annual Progress Report VII	0

**TABLE L**

		ECTS
<b>Research and Thesis Write-up (Ph.D. in Biomedical Sciences and Ph.D. in Biodiversity and Ecology)</b>		
BIO 820 Ph.D.	Research Stage I	30
BIO 821 Ph.D.	Research Stage II	30
BIO 822 Ph.D.	Research Stage III	30
BIO 823 Ph.D.	Research Stage IV	30
BIO 824 Ph.D.	Research Stage V	0
BIO 825 Ph.D.	Research Stage VI	0
BIO 826 Ph.D.	Research Stage VII	0
BIO 827 Ph.D.	Research Stage VIII	0
BIO 828 Ph.D.	Research Stage IX	0
BIO 835 Ph.D.	Thesis Write-up Stage I	30
BIO 836 Ph.D.	Thesis Write-up Stage II	30
BIO 837 Ph.D.	Thesis Write-up Stage III	0
BIO 838 Ph.D.	Thesis Write-up Stage IV	0
BIO 839 Ph.D.	Thesis Write-up Stage V	0
BIO 840 Ph.D.	Thesis Write-up Stage VI	0
BIO 841 Ph.D.	Thesis Write-up Stage VII	0
BIO 842 Ph.D.	Thesis Write-up Stage VIII	0

## Courses Description

### **BIO 605 Basic Laboratory Health and Safety Training (0 ECTS)**

This seminar course provides students with a basic knowledge on health and safety, including fire safety, in biological laboratories. Student assessment will be "Pass / Fail". Enrollment in the course is mandatory within the first year of study, for all the postgraduate programmes of study of the Department. Successful completion of the course is a prerequisite for enrollment in courses that entail personalized laboratory exercises, or field exercises such as BIO 868 Fieldwork, and for Master's and Ph.D. laboratory-based or field-based research dissertations. **The course is offered every Fall Semester.**

### **BIO 610 Special Topics in Human Molecular and Medical Genetics I (10 ECTS)**

The main objective of the course is the study of the molecular basis of heredity and the contribution of modern genetics to medical pathology. Genetic phenomena will be presented concerning monogenetic and polygenic diseases, the concept of mutation and genetic polymorphisms, the DNA linkage analysis and the molecular diagnostic approach with real examples of diseases and cases for consolidation of knowledge. There will be reference to genetic predisposition and genetic association studies, to germinal and somatic mutations and their importance to disease. Special reference will be made to hereditary cancers, hereditary nephropathies, hemoglobinopathies, neuropathies and other large categories of monogenic hereditary diseases, with frequent reference to the Cypriot gene pool and founding phenomena in the Cypriot population. There will be discussion of the ethical, legal and social implications that govern the application of genetic studies, especially in the context of modern technology that allows for the holistic analysis of the genome.

### **BIO 620 Selected Topics in Cell Biology (10 ECTS)**

This course offers an in-depth study of selected, cutting-edge topics in cell biology research. The first topic includes the study of cytoskeleton structure and function and the motor proteins as molecular machines for intracellular transport. It analyses the concerted function of motors in axonal transport in neurons and presents models of molecular pathogenesis in human neurodegenerative disease. The second topic dissects the structural and functional organisation of the nucleus in higher eukaryotes. It explains the high-order organization of chromatin and how chromatin remodeling is involved in the regulation of gene expression. Additionally, the structure of the nuclear envelope and the molecular mechanisms of regulation of bidirectional nucleoplasmic transport in higher eukaryotes and the structure and function of nuclear organelles is analysed. The third topic gives an in-depth review of state-of-the-art methods in cell biology: high resolution fluorescence microscopy and confocal microscopy, super resolution nanoscopy, FRET, TIRF, AFM methods and proteomics.

### **BIO 630 Nucleic Acids (10 ECTS)**

*(Prerequisite: Undergraduate level courses in Biochemistry and Molecular and Cellular Biology)*

To register for the course, students must first obtain special approval from the instructor. The course focuses on the structure and function of nucleic acids (DNA and RNA). The course offers a comprehensive and an up-to-date account of the structures and physical properties of nucleic acids, with special emphasis on the biological function. The course is targeted to graduate-level students specializing in molecular biology, biotechnology and

molecular genetics. Some key features of the course include topics on technologies used in the study of nucleic acid structure and properties and state-of-the-art nucleic-acid-based.

### **BIO 640 Molecular Biology I (10 ECTS)**

This course requires a good knowledge of the principles of molecular and cellular biology. Emphasis will be placed on the mechanisms that control gene expression in eukaryotes. The following topics will be included: nuclear structure and organisation of DNA and the role of topoisomerases in this organisation; transcription factors and DNA binding motifs; control of transcriptional initiation; activators and repressors; promoters and enhancers; coordinated expression of clusters of genes; termination of transcription, RNA processing; chromatin remodelling (DNA methylation and histone acetylation); micro RNAs and RNA interference.

### **BIO 650 Special Topics in Bioinformatics (10 ECTS)**

This course provides an in-depth discussion of bioinformatics methods and algorithms routinely used in fields such as molecular biology, genetics and genomics. The main objective of the course is that postgraduate students become aware of the principles on which commonly used bioinformatics tools are based, instead of using applications in a 'black box' fashion. This approach is of utmost importance, both for the rational usage and for the correct assessment of the results obtained by such methods. This will be achieved through a series of lectures and discussion sessions. Students will give oral presentations of selected research papers, where usage of bioinformatics methods has provided significant input to wet-laboratory biological research.

### **BIO 660 Selected Themes in Developmental and Stem Cell Biology (10 ECTS)**

This course begins by introducing developmental biology and stem cells and comments on their significance for medicine. It then introduces main concepts of developmental biology and stem cells, such as 'cell type', 'differentiation', 'cell potency', 'cell specification' and 'pattern formation' and the role of genes and signalling pathways in these. The course concentrates on mouse development as a model for human embryogenesis/development. Selected topics of mouse development focus on the cellular and molecular basis of important embryonic and extraembryonic events during the peri-implantation and early post-implantation periods (including gastrulation, embryonic germ layer development, early neural development and placenta organogenesis), as well as ageing. Finally, special types of clinically important stem cells such as embryonic stem cells are introduced and discussed. The students will benefit from discussing selected scientific papers on the topics of the course.

### **BIO 670 Imaging in Biological Sciences (10 ECTS)**

The optical microscope has undergone a radical transformation. Recent innovations in lasers, chemistry, molecular biology, detectors, computation and optics have propelled the microscope to the cutting edge of modern biology. These complex machines are now the tools of choice for revealing structure and function in biology. This course explores the principles and practice of modern microscopy. It consists of lectures, demonstrations, discussions and laboratory exercises. In addition, students will also be expected to present and discuss keystone primary research papers in class. Starting with basic optical theory, the course advances through transmitted, fluorescence, confocal and finally multiphoton microscopies. The techniques used for live cell imaging will be emphasized, as well as the technologies for labelling target molecules. The course will be updated every year to take into account new developments



in cell imaging approaches and closely related technologies. It is structured towards a technical understanding of techniques, as once they are mastered they can be applied to almost any cell/tissue system or research project.

#### **BIO 680 Scientific Methodology in Molecular Biology (20 ECTS)**

Students are eligible to sign up for this course once they have successfully completed 70 ECTS of coursework. This course aims at students' theoretical training in traditional scientific methodology (scientific hypothesis formulation, proof and modification through appropriate experimentation and interpretation of results), as well as in modern data-driven approaches that emerged after the development of high throughput technologies. The course will include the presentation and analysis of various scientific methods and techniques for the design, execution and presentation of molecular biology research. To this end, students will be educated in the critical reading and analysis of published research papers and in the presentation of research results and research proposals to an audience and in writing. Students will analyse a number of original and review articles on a subject in biological sciences, that they choose in collaboration with their tutor, as well as study (using special laboratory manuals) the various methods of modern molecular biology, so that they become familiar with routine laboratory methods that molecular biologists use in their research.

#### **BIO 681 Scientific Methodology in Biodiversity and Ecology (10 ECTS)**

This dissertation course includes the evaluation and analysis of crucial and broad-ranged issues in modern theoretical and experimental research on ecology and biodiversity. Students will learn to critically evaluate and analyze scientific publications, as well as to prepare and present a literature review. They will become familiar with scientific writing, the structure of scientific papers, literature citing, statistical analyses, and table and figure preparation. Each student will prepare a bibliographical study on a theme relating to biodiversity and ecology, assigned by one of the programmer's instructors (the Supervisor). The students' progress will be monitored by reports and questions that they will present to the Supervisor. The dissertation course will be concluded after an oral presentation and examination of each student's study, in conjunction with the evaluation of the written study by the Supervisor. The examination of the oral presentation will be made by two instructors of the programme (one being the supervisor).

#### **BIO 690 Special Topics in Current Biological Sciences I (10 ECTS)**

The course will focus on specific areas of current interest, approaching the material through lectures and reading of primary literature. Topics in the course will vary between semesters, but may include in-depth analysis of specialized areas of biology, advances in methodology, novel applications, etc. Emphasis will focus on developing skills relevant to careers in biology, such as the ability to analyse, discuss, and present primary sources.

#### **BIO 691 Special Topics in Current Biological Sciences II (10 ECTS)**

The course will focus on specific areas of current interest, approaching the material through lectures and reading of primary literature. Topics in the course will vary between semesters but may include in-depth analysis of specialized areas of biology, advances in methodology, novel applications etc. Emphasis will be given on developing skills relevant to careers in biology, such as the ability to analyse, discuss, and present primary sources.

#### **BIO 710 Special Topics in Human Molecular and Medical Genetics II (10 ECTS)**

Presentation of various selected classes of inherited conditions concerning different human systems such as nephrogenetics, neurogenetics, cardiac genetics, connective tissue conditions, cytogenetics and others. Emphasis will be given on contemporary methods of detecting genes that are responsible for or contribute to the development of multifactorial diseases such as diabetes, cardiovascular conditions, several cancers, chronic kidney disease, etc. There will be discussion of the role of the newly described findings concerning miRNAs, Copy Number Variations (CNVs) and DNA and histone methylation in the development or the influence of the clinical presentation of various diseases. There will be frequent reference to the recent literature, both reviews and original publications, while students will also be given an opportunity to present their own research in coordination with their tutor.

#### **BIO 720 Special Topics in Biochemistry (10 ECTS)**

Presentation of selected topics in biochemical processes and their potential involvement in disease progression. Examples of topics to be covered are post-translational protein modifications, signal transduction and signalling pathways, receptors and receptor mediated endocytosis, hormonal regulation of metabolism and others. These and other topics will be taught using classical textbooks, recent publications of original work, and review articles in scientific journals.

#### **BIO 730 Molecular Diagnostics (10 ECTS)**

Presentation of the available techniques for routine molecular diagnostic methodology in a clinical set up. Commonly used techniques will be presented and their strengths and limitations discussed. Such techniques include: DNA and RT-PCR sequencing, PCR and restriction digests, Single Strand Conformation Polymorphism analysis (SSCP), Primer/ restriction digest engineering, Denaturing Gradient Gel Electrophoresis (DGGE), Single Nucleotide Primer Extension, Allele Specific Amplification, Denaturing High Pressure Liquid Chromatography (DHPLC).

#### **BIO 740 Cellular Communication (10 ECTS)**

This course provides an in-depth study of strategies of cellular communication in animal cells. Major topics include: Tissue architecture and general principles of cellular communication, types of junctions and adhesive structures and molecules, extracellular matrix. Signalling molecules, membrane and intracellular receptors, signalling cascades and signal transduction, cellular responses. G-protein-linked membrane receptors, cAMP, PKA, phospholipase C-, IP3, diacyl-glycerol, PKC, CaM kinase, olfactory receptors and photoreceptors. Enzyme-linked membrane receptors, Ras, MAP, PI3, Src, jak-STAT. Notch, Wnt, Hedgehog and NF-IB pathways. Cellular communication and regulation of gene expression. Neuronal communication, small molecule and neuropeptide neurotransmitters, action potential-ionic hypothesis, neurotransmitter/ion receptors. Molecular mechanisms of synaptic long-term potentiation (LTP).

#### **BIO 750 Cancer Biology (10 ECTS)**

The course consists of a series of lectures and group discussions on special topics concentrating on the molecular principles of carcinogenesis as well as on the mechanisms of cancer initiation promotion, progression, invasion and metastasis. The lectures will focus on oncogenes (with emphasis on Ras and Src), tumour suppressor genes (with emphasis on p53 and Rb), growth factors, cell survival and death (with emphasis on apoptosis) and angiogenesis. One of the major goals of this course is to inspire

the students and teach them how this knowledge can be applied in targeted therapeutics, personalized medicine, and the rational treatment of cancer. Students will be asked to review and evaluate in writing original relevant scientific articles and to discuss them in class. Moreover, students will work in groups in order to prepare a project on an assigned topic, which will then be presented in class at the end of the semester. Prerequisite: Good knowledge of molecular and cellular biology and molecular genetics.

#### **BIO 760 Topics in Genomics and Proteomics (10 ECTS)**

Genome projects of model organisms: lessons learned through the use of novel technology about the structure, functional organization and the evolution of genetic information. The postgenomic era and the challenge of deciphering gene product function through the use of next generation sequencing, DNA microarrays, high throughput gene expression analysis, protein and antibody arrays and high throughput protein-protein interactions.

#### **BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS)**

The goal of this course is to illustrate the importance of genes, microbes and the intestinal environment that predispose for intestinal disease and cancer. The course includes: (a) lectures on cancer and quantitative genetics, (b) analysis by the instructor of the current literature pertaining to the genetics of cancer, (c) student presentations on the role of intestinal bacteria in colon cancer, and (d) experimental analysis of probiotic bacteria in Cypriot market yogurts. The theoretical (lectures), analytical discussions on current key literature, and the experimental approach aim towards a better understanding of critical aspects of intestinal human microbial dysbiosis and cancer.

#### **BIO 780 Independent Study I (10 ECTS)**

#### **BIO 790 Independent Study II (10 ECTS)**

Bibliographical in-depth research essay on front-line research topics that are relevant to the content of the postgraduate curriculum. The student is expected to make use of original and review publications in international journals and prepare a written report of 25-30 pages. Students will not be permitted to conduct two Independent Studies with the same supervising faculty. In order to sign up for the course, students must first obtain the written approval of their academic and research advisors and the supervising faculty.

#### **BIO 800 Postgraduate Seminar I (0 ECTS)**

#### **BIO 801 Postgraduate Seminar II (0 ECTS)**

#### **BIO 802 Postgraduate Seminar III (0 ECTS)**

#### **BIO 803 Postgraduate Seminar IV (0 ECTS)**

The students are expected to attend a series of lectures, at which invited speakers present research work in the field of Biological Sciences.

#### **BIO 805 Search and Management of Bibliographic Sources (0 ECTS)**

The seminar, which is carried out by the Library of University Cyprus in collaboration with the Department of Biological Sciences, is designed to introduce students to electronic information services offered by the Library of the University of Cyprus, as well as techniques and strategies of searching bibliographic databases and library catalogues via the use of Boolean operators. The use of software package "RefWorks" is discussed, as a tool for the gathering, storing and managing bibliography and citations. Successful completion of this seminar is a pre-requisite for Master thesis courses. **The course is offered every spring semester.**

#### **BIO 810 Comprehensive Examination (0 ECTS)**

The processes of conducting and evaluating the comprehensive examination follow the internal regulations of the Department which are posted on the departmental website, as well as the Postgraduate Studies Regulations of the University of Cyprus.

#### **BIO 811 Research Proposal (0 ECTS)**

The Ph.D. candidate must submit and present the research proposal according to the internal regulations of the Department, which are posted on the departmental website, as well as the Postgraduate Studies Regulations of the University of Cyprus.

#### **BIO 812 Annual Progress Report I (0 ECTS)**

#### **BIO 813 Annual Progress Report II (0 ECTS)**

#### **BIO 814 Annual Progress Report III (0 ECTS)**

#### **BIO 815 Annual Progress Report IV (0 ECTS)**

#### **BIO 816 Annual Progress Report V (0 ECTS)**

#### **BIO 817 Annual Progress Report VI (0 ECTS)**

#### **BIO 818 Annual Progress Report VII (0 ECTS)**

*(Prerequisite: BIO 811 Ph.D. Research Proposal)*

Following the successful submission of their research proposal, Ph.D. candidates must present a progress report on a yearly basis. Reports include a written summary (up to 2 pages) and an oral presentation (15-20 minutes) of research progress to be evaluated by the Advisory Committee. The progress report must be written and presented in English. The internal regulations of the Department for conducting and for the assessment of the coursework are posted on the departmental website.

#### **BIO 830 Master Research Dissertation in Biomedical Sciences (30 ECTS)**

Laboratory-based research dissertation for students who are pursuing the Master's Degree in Biomedical Sciences. The project duration is at least one semester and carries 30 ECTS. If the thesis is not presented in the given semester, students must enroll in BIO 600 Continuation of Master Thesis in Biomedical Sciences for all additional semesters, as needed. Upon completion of the research, the dissertation includes a written assignment, and an oral presentation and examination in the form of an open seminar, which will be evaluated by a three-member Examination Committee. The examination material will consist, mainly, of the content and context of the research dissertation and, secondarily, of other coursework taught, as part of the requirements for this degree.

#### **BIO 831 Master Research Dissertation in Biodiversity and Ecology (30 ECTS)**

Laboratory-based or field-based research dissertation for students who are pursuing the Master's Degree in Biodiversity and Ecology. The project duration is at least one semester and carries 30 ECTS. If the thesis is not presented in the given semester, students must enroll in BIO 601 Continuation of Master Thesis in Biodiversity and Ecology, for all additional semesters, as needed. Upon completion of the research, the dissertation includes a written assignment, and an oral presentation and examination in the form of an open seminar, which will be evaluated by a three-member Examination Committee. The examination material will consist, mainly, of the content and context of the research dissertation and, secondarily, of other coursework taught, as part of the requirements for this degree.

#### **BIO 850 Experimental Embryology Course (10 ECTS)**

The goal of this laboratory course is to introduce vertebrate developmental biology to graduate students who are interested in pursuing a research thesis in the field, emphasizing both classic and contemporary approaches. Students will work with living *Xenopus laevis* material and take active part in the tutorial

sessions in order to understand how the fertilized egg can generate, in the *Xenopus* embryo, such a diversity of cell types and complexity of pattern in a period of only a few days. There is special emphasis placed on the observation and manipulation of living material. The laboratory course includes a comprehensive analysis of both oogenesis and early development and it is divided into two overlapping parts that combine tutorial and practical approaches. Students will perform "in vitro" fertilization of *Xenopus* eggs and mesoderm and neural induction assays of animal cap explants. Successful induction of the explants is confirmed by morphological, histological and molecular analyses. Finally, students will observe and comment on slides selected to illustrate the organization of the body plan of the amphibian embryo at an early stage of organogenesis. Assigned reading will include materials from *Developmental Biology* by Gilbert and a large number of published manuscripts. Grading will be based on performance during the laboratory exercises, quality of presentations and a final exam.

#### **BIO 851 Quantitative Human Genetics (10 ECTS)**

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Are we healthy or very healthy? And when sick, are we just sick or very sick? While we are making an increasingly good job in measuring our phenotypes, the observable manifestations of our traits, we still lag behind in explaining our *endotypes*, the mechanisms that shape the phenotypes. Quantifying phenotypes and endotypes simultaneously is to deal with both parts of our lives' equations, which dictate that every *Phenotype* equals the reading of our Genome by our environmental *History*. The goal of this course is to understand the importance of synergisms among genetic variation, microbes and the environment in the shaping of personal and collective human traits over time. Through lectures, literature search and presentations by the students, as well as free group discussions we aim to understand key aspects of human trait development. We will do that by highlighting information rooted in *classical*, *quantitative* and *medical genetics*, and the literature describing the environment as a stochastic factor in shaping humans at all levels.

#### **BIO 858 Conservation Biology (10 ECTS)**

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The principles of biodiversity conservation comprise the core content of this course. The basic principles of ecology and genetics used in conservation will be discussed, as well as the effects of human activities on global and local biodiversity. Particular emphasis will be given on the role of spatial scale in conservation and on the basic principles of species distribution modelling for predicting future distribution changes caused by human activities. The basic principles and methods of biodiversity monitoring will be presented, a selected part of which will be implemented by students during field work. The most important international initiatives and legislation will be presented, and the students will be introduced into approaches for communicating and collaborating with researchers from other disciplines to achieve an integrated planning of species and ecosystems conservation.

#### **BIO 859 Management of Protected Areas (10 ECTS)**

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Protected areas are an important tool in global conservation efforts, with >14% of the terrestrial realm and >4% of the marine realm under some type of protection. In this course, students will be introduced to the key concepts needed to understand protected area management at a national and an international level. The main topics that will form the basis of the course's lectures include: a) an overview of protected areas and relevant national and international initiatives and policies; b) current definitions of protected areas based on management categories and governance types; c) management planning and

effectiveness evaluation; d) designing protected area networks; e) main threats to biodiversity to be alleviated in protected areas. Selected cases of protected areas will be critically evaluated by students in terms of conservation targets' success.

#### **BIO 860 Molecular Biology of Tumour Viruses (10 ECTS)**

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The course is aimed at students who are interested in gaining a more in-depth knowledge of the principles of virology, with a particular focus on viruses associated with cancer, many of which have a DNA genome. The genomes of viruses and molecular pathways employed in their replication strategies and the completion of their lifecycles, including interaction with the cellular machinery, will be examined. Strategies of viral replication inadvertently leading to loss of cell cycle control, aberrant cellular differentiation, abrogation of apoptosis, and other processes contributing to carcinogenesis will also be examined (e.g. viruses surveyed will include HPV, EBV, KSHV and others). Current advances in the literature will be studied with a direct examination of experimental techniques used in academic discovery. The course will comprise lectures as well as literature discussions.

#### **BIO 861 Advanced Issues in Ecology (10 ECTS)**

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Lectures on basic principles of evolutionary ecology, with emphasis on reproductive and life strategies, intra- and interspecific interactions, population ecology and community assembly. The main methods of sampling and data evaluation will be presented, e.g. qualitative, semi-quantitative and quantitative population and community estimates, recording of environmental variables, sampling, estimation of most important ecological metrics, as well as the main statistical methods for ecological data using examples from real studies. Most methods will also be applied using the respective software. Students will undertake and present essays on selected subjects from the recent literature.

#### **BIO 862 Biodiversity Patterns (10 ECTS)**

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Lectures and essay assignments (selected from modern literature) on biodiversity patterns in space and in time. The patterns will be set within the framework of ecology and biogeography and related concepts, approaches and methods for the detection of patterns along geographical and other environmental gradients will be examined.

#### **BIO 863 Selected Topics in Behavioural Ecology (10 ECTS)**

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A series of lectures and discussions will address the topic chosen for the semester, examining the literature on a particular theme, with a focus on transformative and multidisciplinary research in the field. Examples of topics will include animal communication, sexual selection, migration, social behaviour, and interspecific aggression.

#### **BIO 864 Biodiversity of Cyprus (10 ECTS)**

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This course will focus on the flora and fauna of Cyprus. It will include lectures on the most important elements of Cyprus' biodiversity, as well as an examination of specimens in the laboratory and observations in the field. Students will conduct either a field-based or review-based project on native species of their choice, focusing on conservation, ecology, physiology, evolution and/or taxonomy and systematics.

#### **BIO 865 Geographic Information Systems (GIS) and Remote Sensing in Ecology (10 ECTS)**

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An introduction to Geographic Information Systems (GIS) and remote sensing, with an emphasis on their applications in

ecology. The course will involve a research project applying these methods to an ecological study. Students will learn how to incorporate data obtained from remote sensing, such as topographic, vegetational and climatic data, into analyses with geographic coordinates (e.g. from GPS) in GIS software and prepare results for presentation of research findings.

#### **BIO 866 Marine Ecology (10 ECTS)**

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Lectures on basic principles of marine ecology and the special methods used in the field, and discussions on subjects selected from the recent literature. Such subjects may refer, among others, to oceanography, marine pollution, distribution of marine organisms, adaptations for life in the sea, marine productivity, diversity of marine taxa, as well as applied issues, such as fisheries and aquaculture.

#### **BIO 867 Selected Topics on Evolutionary Biology (10 ECTS)**

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A series of lectures and discussions will address the topic chosen for the semester, examining the literature on a particular theme, with a focus on transformative and multidisciplinary research in the field. Examples of topics will include speciation, coevolution, adaptation, and phylogenetics.

#### **BIO 868 Fieldwork (10 ECTS)**

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Students will undertake a fieldwork project, during which they will apply the methods and techniques they have learnt in their classes, in order to execute a short but complete research project. They will apply sampling techniques, either individually or in small groups; they will analyse their findings; and they will present their results to the other students during a special one-day workshop.

#### **BIO 869 Current Topics in *Drosophila* Biology (10 ECTS)**

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This course will focus on current areas of research in *Drosophila melanogaster*, including stem cells, organ development, growth, regeneration and homeostasis, metabolism and cell signalling, as well as large-scale genomics approaches to developmental problems. The course will entail a close reading of current literature in the field, as well as topical reviews where appropriate. Students will lead discussions of recent papers of interest, with close attention to experimental approaches in the context of their strengths and limitations, as well as an analysis of conceptual advances to crucial biological problems.

#### **BIO 870 Molecular Biotechnology (10 ECTS)**

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*(Prerequisite: Undergraduate level courses in Biochemistry and Molecular and Cellular Biology)*

To register for the course, students must first obtain special approval from the instructor.

The emergence of molecular biotechnology as a rising field within life science and the principles and applications of genetic engineering (recombinant DNA technology) are the overall aims in this graduate course of the Department of Biological Sciences. The course is targeted for graduate-level and advanced-level undergraduate students specializing in molecular biology, biotechnology and molecular genetics and requires advanced-level biochemistry and molecular and cellular biology as prerequisites. The course offers a comprehensive and a state-of-the-art account of the fundamentals of molecular biotechnology and its major applications in microbial and eukaryotic systems, as well as essential issues of ethics in biotechnology. Some key features of the course include topics in nucleic acid structure and properties, high-tech nucleic-acid-based biotechnological advances, molecular diagnostics, protein therapeutics, nucleic

acids as therapeutic agents, vaccines, transgenic animals and societal issues in biotechnology.

#### **BIO 871 Molecular Ecology (10 ECTS)**

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This course will provide an overview of the application of molecular genetic tools to ecological questions and will introduce the genetic markers, techniques and analyses commonly used in this field. The focus will be on how recent advances in molecular techniques can be used at population-, species- and community-levels to explore the dynamics of biodiversity in a changing world, including applications of population genetics, phylogeography, phylogenetics, DNA-based species delimitation and taxonomic assignment, genomics and metagenomics. The course will consist of a series of lectures, group discussions on research papers, hands-on exercises and student presentations on selected topics.



• **Yiorgos Apidianakis, Associate Professor**  
*Infectious Diseases and Carcinogenesis Laboratory*

Humans have approximately 10 times more bacterial cells than eukaryotic cells, which are in constant interaction. Thus, to a certain degree, we are biologically defined by bacteria. The revolution in the identification of human microbes and their role in health and disease has already begun. For example, intestinal microbes have been linked to various diseases, such as diabetes and cancer. However the bacterial species responsible for the way they may act to induce disease remain unclear.

Our laboratory studies the identification of bacterial species and the way cancer might be caused. Apart from *helicobacter pylori*, no other bacterial species has been confirmed as a causative agent of gastrointestinal cancer – the second leading cause of cancer related death in both the United States and Europe. Using the simple model organism, *Drosophila melanogaster*, we recently showed that intestinal bacterial pathogens cause the proliferation of intestinal stem cells, which can be directed by oncogenic mutations towards tumour formation and metastasis.

Using molecular genetics, cellular biology, microbiology and the fundamental knowledge of *Drosophila* as a model organism for human infectious diseases and carcinogenesis, we aim to:

1. Identify signalling pathways that link intestinal infection with tumour formation and metastasis.
2. Identify human intestinal bacteria that either induce or suppress cancer.
3. Identify bacterial factors that induce cancer and their inhibition through therapeutic treatments and special diets.

• **Pantelis Georgiades, Associate Professor**  
*Developmental Biology and Stem cells Lab for Biomedical Research*

Dr Georgiades's research focusses on three main themes:

- (a) The investigation of cellular and genetic basis of the early embryonic processes that lead to organogenesis, such as gastrulation and neurulation, with emphasis on the newly discovered, but poorly understood role of extraembryonic tissues. Understanding how embryos make organs is expected to lead to in vitro organogenesis and to revolutionize regenerative medicine.
- (b) The use of stem cells from both embryonic (e.g. epiblast stem cells) and extraembryonic (e.g. trophoblast stem cells) tissues, in order to understand their behaviour, differentiation and capabilities at the genetic and cellular levels, and their relation to regenerative medicine.
- (c) The investigation of placenta development itself, as well as its interactions with the mother during pregnancy for the understanding of the genetic and cellular factors responsible for embryo viability, growth and a healthy pregnancy. This is expected to lead to treatments for the most common, but still incurable, pregnancy complications including preeclampsia and infertility due to early unexplained miscarriages.

The research of the laboratory combines cutting-edge embryological, genetic, epigenetic, cellular and molecular methodologies such as culture and microsurgery of mouse embryos, the use of transgenic mice, stem cell culture and manipulation, gene inactivation or overexpression in mouse embryos and stem cells, RNA in situ hybridization, histology, immunohistochemistry and various DNA methodologies.

• **Antonis Kirmizis, Associate Professor**  
*Laboratory of Epigenetic Gene Regulation*

In every eukaryotic cell the genome is packaged into chromatin (the DNA/histone protein complex), whose structure can regulate the transcription of DNA. Post-translational modifications placed on histone proteins, such as methylation, acetylation and phosphorylation, can influence the configuration of chromatin and ultimately control DNA accessibility by the transcriptional machineries. Several cellular enzymes have been discovered that can deposit or remove modifications on histones. Therefore, histone-modifying enzymes and their underlying modifications play a crucial role in the regulation of gene expression. Driven by the fact that many of these histone modifiers are frequently mutated or lost in human cancer, our group is interested in understanding the molecular mechanisms employed by these enzymes and their underlying modifications during gene regulation. Of particular interest to our research are the enzymes that methylate arginine residues on histone proteins known as protein arginine methyltransferases (PRMTs). Our previous work has begun to unravel the precise molecular mechanisms, by which histone arginine methylation and the associated PRMTs modulate gene activity 1,2. To further our knowledge of this epigenetic mode of gene regulation, our current work is focused on three main areas:

1. Identify and characterise novel regulators of histone arginine methylation
2. Investigate the mechanistic link among histone arginine methylation, PRMTs and the development of cancer
3. Identify non-histone substrates of PRMTs and determine the biological function of these novel methylated arginines

In order to accomplish our research goals, we employ interdisciplinary approaches such as molecular biology, biochemical, genetic, genomic and proteomic techniques using both mammalian and yeast cells as model systems. Our long-term goal is to apply the information acquired on the basic biology of histone arginine methylation and PRMTs towards the development of therapeutic targets and diagnostic tools for cancer.

• **Alexander Kirschel, Associate Professor**  
*Behavioural Ecology and Evolution Laboratory*

The Behavioural Ecology and Evolution Laboratory examines how ecology, behaviour, and biogeography explain patterns of biodiversity. We are particularly interested in understanding how interactions between related species are affected by resource and interference competition, sexual selection, and genetic relatedness, and how these interactions relate to patterns of phenotypic evolution and species distributions.

We have a number of projects focusing on different aspects of these themes, including research on interactions between related species of birds in sub-Saharan Africa, interactions at the community level between species in Neotropical rainforests, and impacts on endemic species, conservation of interactions between species in Cyprus. We examine patterns of phenotypic variation in traits such as acoustic signals, and in particular song, plumage coloration and morphology, as well as differentiation in genetic markers between populations. We also use experimental methods to determine the impact of phenotypic variation on evolutionary diversification. Research in the Behavioural Ecology and Evolution Laboratory typically involves extensive work in the field, where animals can be observed in their natural environment. It also examines how genetic variation

corresponds with phenotypic variation, and geographic studies incorporating use of remote sensing and GIS to relate species distributions and phenotypes to the environment.

• **Leondios Kostrikis, Professor**

***Laboratory of Biotechnology and Molecular Virology***

The Laboratory of Biotechnology and Molecular Virology (BMV) has been a part of the Department of Biological Sciences at the University of Cyprus since 2004. For the last twenty years, our research has concentrated almost exclusively on the study of human immunodeficiency virus type-1 (HIV-1). Our laboratory uses a variety of experimental approaches in order to understand the molecular mechanisms of HIV-1 transmission and the pathogenesis of AIDS. Over the years, our research activity mainly includes studies on (i) determining the global genetic diversity and immunological responses of HIV-1; (ii) understanding the implications of chemokine receptor polymorphisms in the transmission of HIV-1 and disease progression; (iii) understanding the evolutionary dynamics of HIV-1 drug resistance in patients treated with effective anti-retroviral therapy; and (iv) defining the role of the cellular HIV-1 DNA load in the pathogenesis of HIV-1 infection and progression of HIV-1 disease. Our intention is to continue the study of HIV-1 epidemiology and natural history, the detection of further virus variants and their possible association with characteristic clinical conditions, investigate further viral quasispecies and try to identify differences in their capacity to effect virus replication or pathogenesis. Our main future aims include ongoing studies on (i) understanding the molecular epidemiology of HIV-1 infection in Cyprus and in Europe; (ii) understanding the implications of non-B HIV-1 variants in determining deviations in drug responses and development of drug resistance; and (iii) developing improved methods for production of novel immunogens and original strategies to induce mucosal immunity. A major part of our research is conducted in collaboration with an international multi-disciplinary network of colleagues, consisting of molecular biologists, immunologists, human geneticists, molecular biophysicists, clinical microbiologists, virologists and epidemiologists. Such collaborations will involve the provision of clinical material, exchange of reagents or having members of their staff carry out research work in our laboratory, as in the past. In the course of these studies, we hope to contribute to the development of drugs and vaccines that target HIV, as well as other diseases.

• **Anna Papadopoulou, Assistant Professor**

***Molecular Ecology and Evolution Laboratory***

The Molecular Ecology and Evolution Lab applies molecular genetics and genomic tools to address ecological questions, with a special focus on the study of island communities. Specifically, we use molecular markers and genomic data to study the phylogeny, phylogeography and population genetics of island taxa, as well as to analyse island biodiversity patterns, with the aim to understand the ecological and evolutionary processes that generate and maintain biodiversity in island systems.

Islands harbour unique and vulnerable faunas and floras, which are increasingly threatened by intense pressure from invasive alien species, habitat destruction and climate change. Research and conservation efforts tend to focus on certain prominent groups (e.g. mammals or birds), largely overlooking the hidden biodiversity of the “small majority” (i.e. the highly diverse but neglected small-bodied taxa), which is though critical for the functioning of island ecosystems. Recent advances in molecular genetics and genomics hold great promise for accelerating inventories of previously neglected island communities (e.g. belowground biodiversity), as well as helping us to understand

how this biodiversity is generated and maintained across space and time. Research topics in the Molecular Ecology and Evolution Lab include:

1. Comparative phylogeography and population genomics to understand the role of ecological traits in the dispersal propensity and diversification of island taxa
2. Studying the effects of Quaternary climatic change and sea-level oscillations on the demographic history and diversification of island taxa
3. Developing and applying DNA-based methodologies for species delimitation, large-scale biodiversity assessment and diet inference of poorly known taxonomic groups

For these purposes, we combine fieldwork, with labwork and bioinformatic analysis of molecular and genomic data. This research is being developed in close collaboration with other research groups in the U.K., the U.S.A., Spain, Greece and Cyprus.

• **Chrysoula Pitsouli, Assistant Professor**

***Drosophila Development and Homeostasis Laboratory***

We are using the fruit fly, *Drosophila melanogaster*, as a model of organ remodeling during development, homeostasis and disease. Fruit flies have an extensive tubular network called trachea that functions as both their lungs and their blood vessels, and transports gases and oxygen throughout their bodies via terminal tracheal cells. Similar to human lungs and blood vessels, the *Drosophila* tracheal system arises from epithelial progenitors that proliferate, differentiate, migrate and ramify in order to generate a complex network of interconnected tubes. Furthermore, the tracheal system undergoes remodeling in response to developmental and environmental signals, such as secreted growth factors and tissue hypoxia that activate conserved cellular programs. If these remodeling programs fail or become hyperactive, disease occurs and viability is compromised, similar to humans.

Our lab uses genetic, molecular and biochemical methods, as well as state-of-the art microscopy in order to study the *Drosophila* trachea aiming to identify novel genes and signalling pathways that control development and remodelling of mammalian lungs and blood vessels. We have established a model of developmental tracheal remodeling with similarities to lung development, as well as, a model of disease-induced tracheal remodeling with similarities to cancer angiogenesis. Using microarray profiling we identified the conserved Notch and Wingless/Wnt signaling pathways as key regulators of developmental remodeling through their action on the conserved transcription factor Cut. In addition, we have characterized the tracheal system of the adult *Drosophila* intestine and found extensive tracheal remodeling in response to bacterial infection, inflammation and cancer. This “neotracheogenesis” process is driven by the conserved Hif1a/FGF/FGFR pathway and shares striking similarities with cancer-induced neoangiogenesis.

Our current efforts in the lab aim to:

1. Identify novel regulators of proliferation, differentiation and migration of tracheal progenitors during developmental remodeling
2. Identify novel regulators of hypoxia-induced tracheal terminal cell remodelling
3. Identify regulators of intestinal neotracheogenesis during inflammation and cancer
4. Assess the effect of tumor genetics in tracheal remodeling and cancer progression

• **Vasileios Promponas, Associate Professor**  
**Bioinformatics Research Laboratory**

The research activities of the Bioinformatics Research Laboratory are mainly oriented towards the interpretation of large-scale genomic data and the use of computational methods, in order to reveal the principles governing the molecular basis of life. We are mainly interested in the elucidation of protein sequence to structure/function relationships using sequence similarity, statistical and machine learning techniques. In particular, our research focuses on:

1. Sequence repeats, low complexity/compositionally biased regions: Investigation of their relation to protein structure and association to protein (mis)function. Study of the evolution of protein repeats
2. Transmembrane and membrane-associated protein topology and structure prediction: Prediction of structural features of membrane proteins. Evolution of transmembrane protein topology/structure/function
3. Sequence-based structural/functional classification of proteins
4. Computer-aided and automatic Complete Genome Annotation.

The Bioinformatics Research Laboratory has ongoing collaborations with research groups in the U.K., Greece and Cyprus.

• **Niovi Santama, Professor**  
**Molecular Biology and Biochemistry Laboratory**

The Molecular Biology and Biochemistry Laboratory (MBBLab; www.mbbllab.net) is using molecular, cell biological and biochemical approaches to investigate the mechanisms underlying microtubule-based processes in mammalian cells, aiming at obtaining integrated views of cellular physiology. The MBBLab has been working on different biological questions, such as:

- The role of mitotic motors and their interacting proteins in mitotic spindle assembly and maintenance, and also in mechanisms that regulate centrosome duplication and dynamics in dividing cells
- The function of molecular motors in axonal transport and synaptic signaling in neurons
- The investigation of the role of aberrant motor protein function in the molecular pathways that underlie human neurodegenerative disease and specifically amyotrophic lateral sclerosis, a lethal form of motor neuron disease
- The role of katanin-like proteins and their interacting molecular chaperons in ciliogenesis

In the framework of this research, the laboratory has forged collaborations with research groups in Germany, Belgium, the U.K., Singapore, Denmark, Spain, the U.S.A., Greece, Italy and Cyprus.

• **Spyros Sfenthourakis, Professor**  
**Biodiversity Laboratory**

Spyros Sfenthourakis studies distributional patterns of organisms in order to understand how species richness is controlled, how communities are assembled and how living beings are differentiating through interactions of ecological and evolutionary processes. His research focuses on the study of terrestrial invertebrate communities in island groups and mountain ecosystems, as well as the exploration of general patterns and theories within the wider paradigm of island biogeography. These activities entail both theoretical and applied research in biodiversity conservation.

The differentiation of organisms is approached through a combination of morphological and molecular data, using

modern morphometric and phylogeographic analysis methods. There is a special emphasis on the study of endemic species, which are the most vulnerable to the ongoing climate change, as well as on a variety of human activities that transform their habitats. The high endemism and the geographic position of Cyprus offer a unique opportunity for the study of climate change effects on endemic species that live in vulnerable habitats. Such study combines fieldwork, where an extremely detailed distribution of species is recorded and a variety of population and environmental variables are measured, with laboratory work, where polymorphic loci are identified and genealogical and population data are studied. In addition, the distribution of species and environmental variables are analysed using GIS, and species distribution models are explored on the basis of several climate change scenarios.

Therefore, the Biodiversity and Ecology Laboratory offers possibilities for studying a wide range of animal species in their natural habitats, and it also provides an opportunity for molecular techniques to identify and analyse divergence patterns. Furthermore, it allows us to apply a variety of theoretical models and methods to test hypotheses and predictions concerning community assembly and the future distribution of species.

• **Paris A. Skourides, Associate Professor**  
**Developmental Biology and Bioimaging Technology Laboratory**

The goal of our research group is to understand the cellular and molecular mechanisms involved in generating the three dimensional organisation of tissues and the overall process, by which the basic body plan of vertebrate embryos is established.

During gastrulation, cell and tissue movements on a massive scale create great complexity from a very simple starting form, resulting in highly diversified organisms with a precise three dimensional architecture. Elucidating the mechanisms underlying these movements is important, because genetic mutations and environmental insults during gastrulation can lead to significant developmental deformities. A comprehensive understanding of this process and how it is affected by genetic mutations will help develop diagnostic and therapeutic tools for dealing with human developmental disorders. The study of gastrulation and morphogenetic movements has always demanded cutting edge imaging and the pace of discovery in the field has been set by advances in imaging technologies. The complexity of morphogenetic movements, together with our inability to image them *in vivo*, has forced researchers to study each movement in isolation. Yet, if we are to truly comprehend the way morphogenetic movements give rise to form, we need to begin the process of integrating what we know back to the embryo and view gastrulation as a unified process rather than individual components.

Our laboratory, with the use of nanotechnology and specifically the application of Quantum Dot nanocrystals, is developing new imaging methods and technologies that enable the study of morphogenesis at the organismal, cellular and molecular level "in vivo". In addition we are exploring the development of new types of nanocrystals and a number of wide ranging applications for Quantum Dots in Biology.

• **Katerina Strati, Assistant Professor**  
**Tumor Viruses and Cancer Laboratory**

Our lab is interested in elucidating the mechanisms of carcinogenesis driven by human papillomaviruses (HPVs). HPVs were first associated with cervical cancer due to the detection of HPV DNA in the majority of tumour biopsies. Since then, these viruses have been associated with other types of cancer, such as



a subset of head and neck cancers and most other anogenital cancers. Expression of the viral proteins E6 and E7 is thought to be required not only for cancer development but also for maintenance. These two proteins mediate their function by interacting with and modulating important cellular factors, such as the tumour suppressors p53 and pRb. Thus, our study is focused on the viral oncoproteins and their cellular binding partners. Even though the HPV oncoproteins have been abundantly characterized for their interactions with multiple cellular components, the mechanisms of tumorigenesis are not conclusively defined.

We employ "in vivo" techniques, in order to study the function of the viral oncogenes in the tissues that the virus would normally infect. We aim at elucidating the molecular function of E6 and E7 and the mechanisms in which they contribute to carcinogenesis. Details on current projects may be discussed with the laboratory head.

## Contact Details

### DEPARTMENT SECRETARIAT

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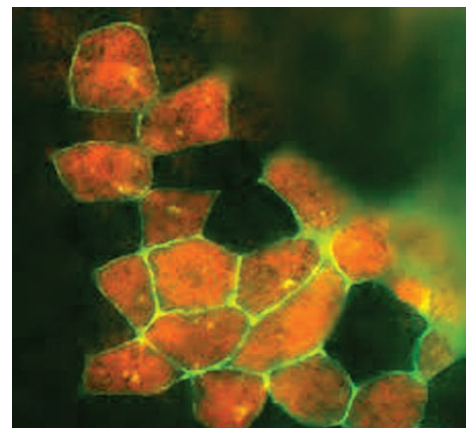
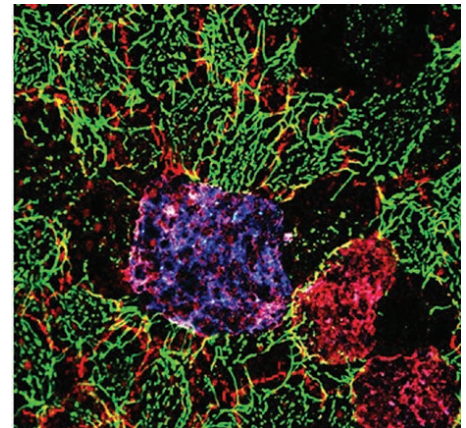
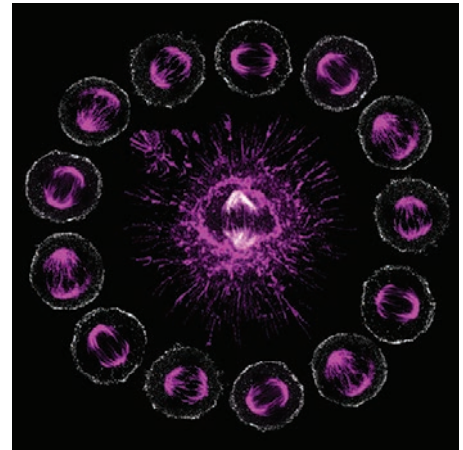
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# Department of Chemistry

www.ucy.ac.cy/chem

The Department of Chemistry prides itself in producing highly skilled scientists in the field of Chemistry, capable of responding to current and future challenges in Chemistry at both national and international levels.

The Department offers graduate programmes at the Master (M.Sc.) and Doctoral (Ph.D.) levels.

## Admission to the Chemistry Graduate Programmes

At present, 46 postgraduate students are enrolled in the graduate programme, 30 of which are at the Doctoral level. To date, the Department of Chemistry has awarded 92 Ph.D. and 88 M.Sc. degrees.

The Department admits graduate students every year at the M.Sc. and Ph.D. levels. The applications are submitted via the Online Application System and are examined by the Graduate Studies Committee (GSC), which is comprised of three faculty members.

For details on the application procedure and evaluation of candidates, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School (tel.: 22894021/44) or the Department Secretariat.

In addition to the general application requirements, candidates are requested to submit a cover letter explaining the reasons they wish to enter the Chemistry Graduate Programme and to indicate the research area(s) of their interest(s).

## Financial Support

The University of Cyprus provides a number of scholarships to new and existing graduate students. Teaching assistantships are also available. Moreover, graduates can also obtain financial support from University, national and international research programmes for research work carried out during their M.Sc. or Ph.D. studies.

## Credit Transfer from other Universities / Previous Studies

The Chemistry Graduate Programme (M.Sc. and Ph.D. levels) includes both classroom courses and bibliographic studies, totalling 60 ECTS. Doctoral students holding an M.Sc. degree from another university can be credited part or all of the 60 ECTS, pending the recommendation of the GSC and approval by the Departmental Council. Moreover, doctoral students may spend up to one calendar year at universities abroad, under student exchange programmes. M.Sc. and Ph.D. students can also attend courses at universities abroad, corresponding to a maximum of 20 ECTS.

## MASTER OF SCIENCE (M.Sc.) DEGREE

The minimum duration of studies towards an M.Sc. degree is 1.5 years and the maximum duration is 4 years.

## M.Sc. Requirements

To obtain an M.Sc. degree, students must successfully complete 120 ECTS of the M.Sc. Chemistry Graduate Programme. These are obtained by attending 4 of the courses listed below (10 ECTS each), and 2 Graduate Literature Studies (CHE 800 and CHE 810, 10 ECTS each), and 6 research modules (10 ECTS each) that include the preparation and defence of an M.Sc. Thesis.

## Course Selection and Approval

M.Sc. students select their courses in agreement with their Research Supervisors.

### CHE 800 Literature Study (10 ECTS)

M.Sc. students, in agreement with their Research Supervisors, must enrol in the graduate literature study CHE 800, in the context of which they are required to select a topic from their wider area of expertise, but not directly related to their research area. Students must study this topic and present it in the form of a short report and seminar (10 ECTS). The supervision of CHE 800 is carried out by a Chemistry faculty member, who may be the student's supervisor or another Chemistry professor. The examination and grading of this seminar are conducted, after an open presentation, by a two-member committee.

For details on the examination procedure, the grading system and the presentation of the CHE 800 literature study, students may consult the Department's Secretariat.

### CHE 810 Literature Study (10 ECTS)

M.Sc. students, in agreement with their Research Supervisors, must enrol in the graduate Literature Study CHE 810, in the context of which they are required to select a topic directly related to their research interests. Students must study this topic and present it in the form of a short report and seminar (10 ECTS). The student's Research Supervisor is responsible for supervising CHE 810. The examination and grading of this seminar are conducted, after an open presentation, by a two-member Committee.

For details about the examination procedure, the grading system and the presentation of the CHE 810 Literature Study, students may consult the Department's Secretariat.

## M.Sc. Research

The research topic (experimental or theoretical, or a combination of the two) is chosen in agreement with the Research Supervisor, aiming at the production of new, original knowledge in chemistry. The originality of the research must be based on the research findings of the

student and should be separated from the work of others, indicating clearly the student's personal contribution. The thesis should include a literature survey, a description of the research methods used, a discussion of the results, conclusions, and literature references. The thesis is defended before a three-member Examination Committee.

For details on the thesis defence and the composition of the Examination Committee, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department Secretariat.

## DOCTOR OF PHILOSOPHY (Ph.D.) DEGREE

The minimum duration of studies towards a Ph.D. degree is 3.5 years and the maximum is 8 years.

### Ph.D. Requirements

To obtain a Ph.D. degree, students must successfully complete 240 ECTS of the Doctoral Chemistry Graduate Programme, which includes writing and successfully defending a Ph.D. thesis on an approved topic. An essential requirement for the defence of a Ph.D. thesis is that the student succeeds in the chemistry comprehensive examination, which takes place between third and seventh semester. The required 240 ECTS are obtained by attending 4 of the courses (listed below) carrying 10 ECTS each, 2 graduate Literature Studies (CHE 800 and CHE 810, 10 ECTS each), the Chemistry Department Seminars (CHE 830 - CHE 835, 10 ECTS units), while 17 research modules carrying 10 ECTS units each are credited through research for the Ph.D. thesis. Procedures for course selection and the coverage of the graduate Literature Studies CHE 800 and CHE 810 are the same as those for the M.Sc. thesis.

### Chemistry Department Seminars

Within CHE 815, Ph.D. students who have passed the chemistry comprehensive examination are required to attend all the seminars of the Department, with only one absence allowed within the semester. Students must present a seminar within that period. The Seminar is graded by a three-member Committee (Chemistry faculty) appointed by the Chairman of the Department, after the recommendation of the Research Supervisor. The grade is submitted upon fulfilment of the requirement for attendance at the Departmental Seminars. In case of failure, the student must present a new seminar during the next semester.

Upon their enrolment in the Ph.D. programme, students must register for five semesters, 1 ECTS per semester, for a seminar series (CHE 830 – CHE 834) and attend at least four seminars per semester. Toward the end of their studies, they must register for CHE 835 (5 ECTS) and present a seminar to the Department.

### Ph.D. Research

In addition to the requirements described in the M.Sc. research given above, Ph.D. research must be of a very high standard, such that the results are publishable in

recognized, peer-reviewed, international research journals. The Department of Chemistry demands, as a minimum prerequisite towards a Ph.D. degree, that candidates have at least one scientific paper either published or accepted for publication in a journal of their research area.

### Ph.D. Comprehensive Examination

This exam, which is an oral examination, should be taken between third and seventh semester of graduate studies. Students, who already hold an M.Sc. degree from the University of Cyprus or from another university, who have completed all the necessary ECTS and who have produced sufficient research in the first year of studies, may take the comprehensive examination at the end of the 2nd semester, at the earliest.

Each student is examined by a three-member Committee (Chemistry faculty). The comprehensive examination evaluates the level of understanding of the material in the 4 graduate courses that the student attended. Furthermore, the overall research work of the student, as this appears in a written report submitted by the student to the Committee, is also evaluated in terms of the level of understanding of the research topic and the quality and quantity of the work.

For more details about the comprehensive examination (content of written report, composition and procedure followed by the three-member committee), please consult the Graduate School or the Department's Secretariat.

### Thesis Proposal

After passing the Ph.D. comprehensive examination and at least one year before the final defence of the Ph.D., the thesis proposal must be successfully presented in front of a three-member Committee (Chemistry faculty). The purpose of the proposal is to examine the quality, quantity and novelty of the research work and to ascertain whether the students have made sufficient progress and understand the forward requirements for the successful completion of their studies.

### Ph.D. Thesis Defence

The Ph.D. thesis is submitted and defended only with written permission of the Research Supervisor and the subsequent submission of the thesis to the Chairman of the Department. The Department has a minimum prerequisite for the award of a Ph.D. degree, that the candidates have at least one scientific paper published or accepted for publication in an international peer-reviewed journal in their research field. The final examination (defence) of the doctoral dissertation is conducted in front of a five-member examining committee.

For details about the procedure for Ph.D. thesis defence and the composition of the five-member examining committee, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department's Secretariat.

## Chemistry Graduate Courses (M.Sc. and Ph.D.)

	ECTS
<b>Theoretical Courses</b>	
CHE 610 Physicochemical Methods in Inorganic Chemistry II	10
CHE 611 Physicochemical Methods in Inorganic Chemistry I	10
CHE 612 Physical Chemistry of Polymers	10
CHE 615 Separation Methods and Applications	10
CHE 626 Supramolecular Chemistry	10
CHE 630 Medicinal Chemistry	10
CHE 631 Advanced Organic Chemistry I	10
CHE 636 Organic Reactive Intermediates	10
CHE 638 Methods for Structure Characterization	10
CHE 640 Basic Principles of Colloid Chemistry	10
CHE 651 Raman Spectroscopy	10
CHE 670 Heterogeneous Catalysis	10
CHE 681 Biochemical Engineering	10
CHE 690 Synthesis, Characterization and Technology of Polymers	10
CHE 695 Aquatic Chemistry of Heavy Metals	10
CHE 715 Mass Spectrometry	10
CHE 789 Synthetic Organic Chemistry	10
<b>Graduate and Department Seminars, Thesis Writing</b>	
CHE 800 Literature Study I	10
CHE 810 Literature Study II	10
CHE 830 Chemistry Department Seminars I	1
CHE 831 Chemistry Department Seminars II	1
CHE 832 Chemistry Department Seminars III	1
CHE 833 Chemistry Department Seminars IV	1
CHE 834 Chemistry Department Seminars V	1
CHE 835 Chemistry Department Seminars VI	5
<b>Research and Thesis Writing</b>	
CHE 821-826 M.Sc. Research and M.Sc. Thesis Writing	10
CHE 880-896 Ph.D. Research and Ph.D. Thesis Writing	10

## Courses Description

### CHE 610 Physical Methods in Inorganic Chemistry II (10 ECTS)

- Magnetism: Introduction, types of magnetic behaviour, diamagnetic and paramagnetic susceptibility, the Van Vleck equation, applications of the Van Vleck equation to specific situations, Curie-Weiss Law, high spin-Low spin equilibrium, introduction to neighbour-neighbour interactions, antiferromagnetic mechanisms, the Heisenberg-Dirac-Van Vleck (HDVV) Approach, determination of the values of the exchange parameters ( $J$ ) in dinuclear and trinuclear complexes, ferromagnetic coupling, magnetic properties of high nuclearity metal clusters, single – molecule magnetism behaviour.
- Electron Paramagnetic Spectroscopy (EPR): Basic principles, hyperfine couplings, experimental parameters that affect the EPR spectra, examples.
- Electrochemistry: Basic principles, classification of electrochemical techniques, cyclic voltammetry, polarography, chemical reaction on electrodes, electrochemical study of

metal complexes (experimental parameters that affect electrochemical studies, evaluation of the redox properties of metal complexes and determination of the experimental parameters from cyclic voltammograms and polarograms – E1/2, EPA, EPC, IPA, IPC,  $n$ , etc- reversible, quasi-reversible and irreversible redox processes, examples).

### CHE 611 Physical Methods in Inorganic Chemistry I (10 ECTS)

- Group theory: Symmetry, geometric transformations, irreducible representations, character tables, applications of group theory to spectroscopy, molecular orbitals.
- Introduction to spectroscopy: Transitions of atoms and molecules, selection rules, determination of concentration and application in the calculation of equilibrium constant and chemical kinetics, isosbestic points.
- Vibrational spectroscopy: Vibrations in molecules, 3N-6(5) Rule, selection rules, symmetry of vibrations, normal coordinate analyses, absorption bands assignment, group vibrations, assignment of vibrations by isotopic enrichment, kinetics of fast reactions, RAMAN spectroscopy, Resonance RAMAN, fingerprinting, applications of vibrational spectroscopy in bioinorganic models and metalloenzymes.
- Nuclear Magnetism Spectroscopy (NMR): Description of NMR experiment, Bloch equations, pulse NMR, NMR quantum mechanics, relaxation, inverse recovery and spin echo experiment, chemical shift and nuclear coupling, determination of structure base on chemical shift and nuclear coupling, selective excitation, NOE, Multinuclear NMR, quadrupolar nuclei, Variable Temperature (VT), reaction rate determination by VT, two dimensional spectroscopy (2D), 2D-J-resolved, 2D-COSY, 2D-HETCOR, 2D-NOESY, 2D-EXSY and 2D-Inadequate spectroscopy, kinetics reaction rate determination by 2D and 1D transfer magnetization, paramagnetic NMR, structure determination, applications.

### CHE 612 Physical Chemistry of Polymers (10 ECTS)

- Differences between small molecules and macromolecules, characteristic lengths and relaxation times, variation of structure, tacticity, homo- and co-polymers, stereochemical effects, ternary structure, polyelectrolytes, molecular weights and their distributions and methods to measure them. Osmotic pressure, vapour pressure, light, X-ray and neutron-scattering, ultracentrifugation, viscosity, size exclusion chromatography.
- Theoretical studies of the conformations of polymer chains.
- Polymers and solvents. Chemical potential and osmotic pressure. Dilute, semi-dilute and concentrated polymer solutions. Good, bad and theta solvents. Flory's solution theory. De Gennes' scaling models. Phase separation in polymeric systems. Polyelectrolytes in solution.
- Amorphous phases of polymers. The rubbery state and the theory of rubber elasticity. Melts. Rouse-Zimm dynamic theory in melts. Reptation theory of De Gennes. Glassy phase and the glass transition. Mechanical properties of solids and elastic polymers and viscoelasticity.
- Semicrystalline phases. Crystalline lamellae of polymers and the problem of chain re-entry. Spherulites, dendrites and other morphologies, liquid crystalline polymers.

### CHE 615 Separation Methods and Applications (10 ECTS)

The main purpose of this course is to familiarize students with the basic concepts of separation science. It examines a number of chromatographic separation methods and their applications in different areas of industry, medicine, environment, forensic science, food science, etc. The separation methods described in this course are the following:

- Gas chromatography (gas-solid chromatography, gas-liquid chromatography).
- High-performance liquid chromatography (partition chromatography, adsorption or liquid-solid chromatography, ion exchange chromatography, size exclusion or gel chromatography, thin-layer chromatography).
- Capillary electrophoresis (capillary isoelectric focusing, capillary gel electrophoresis, capillary isotachopheresis, capillary zone electrophoresis, micellar electrokinetic chromatography, capillary electrochromatography).

#### **CHE 626 Supramolecular Chemistry (10 ECTS)**

Concepts in supramolecular chemistry. Host-guest chemistry. Energetics of supramolecular complexes: experimental methods. templates and self-assembly. Molecular channels. Fullerenes and carbon nanotubes. Hydrogen-bonded molecular capsules. molecular vehicles.

#### **CHE 630 Medicinal Chemistry (10 ECTS)**

Introduction to drugs and their biological targets (proteins, enzymes, receptors, nucleic acids, cell membranes, building blocks). Types of intermolecular interactions. Biologically-active compound discovery from natural sources and from synthetic compound libraries. Overview of drug development process: Finding a lead, optimizing target interactions and access to target. Quantitative Structure-activity Relationships (QSAR). Pharmacodynamics and pharmacokinetics. Major classes of drugs: Antibacterial agents and their targets, mechanisms of action. Antiviral agents and the principles of antiviral action, structure and life cycle of representative viruses. Anticancer agents, causes of cancer, targets for anticancer therapies. Cholinergics, anticholinergics, anticholinesterases, receptors in the peripheral nervous system. Drugs acting on the adrenergic nervous system and adrenergic receptors. Opioid analgesics and opioid receptors.

#### **CHE 631 Advanced Organic Chemistry I (10 ECTS)**

Introduction to the organic chemistry of sulfur; di-, tri-, and tetracoordinate sulfur compounds; organosulfur compounds in natural product chemistry and synthesis; organoselenium compounds. Introduction to the organic chemistry of nitrogen; saturated nitrogen compounds (amines, ammonium compounds and nitrogen bases); unsaturated nitrogen compounds (imines, enamines, amides, nitriles, urethanes, ureas, imides and diimides); nitrogen compounds with N-O or N-N bonds (compounds with N-N bonds, oximes, N-oxides, nitroso compounds, nitro compounds).

#### **CHE 636 Organic Reactive Intermediates (10 ECTS)**

The course examines reactive intermediate compounds of organic chemistry and it is based on articles from the chemical literature referring to their structure and physicochemical properties and to experimental methods for their preparation, detection and identification. The compounds examined are neutral species (e.g., diradicals, carbenes and nitrenes, strained alkenes) and ions (carbocations, carbanions).

#### **CHE 638 Methods for Structure Characterization (10 ECTS)**

Principles of crystallographic symmetry. Methods of structure solution and the phase problem: Patterson maps, direct methods, methods of structure convergence. Comparison of X-ray, neutron and electron diffraction. Mössbauer spectroscopy. Spectroscopic methods for the characterization of solid surfaces EXAFS, XPS, UPS.

#### **CHE 640 Introduction to Colloid Science (10 ECTS)**

- Matter in the colloidal state. The main types of colloids. Characteristic phenomena in colloid systems and dispersions. Preparation methods for uniform colloids.
- Optical properties of colloids. Scattering of light, X-rays and neutrons. Optical microscopy. Polarized microscope. Electron microscope. Atomic force microscopy and scanning tunnelling microscope.
- Kinetic properties of colloids. Diffusion. Viscosity. Rheology. Electrophoresis.
- Thermodynamics of interfacial systems. Surface tension contact angle. Elementary theory of nucleation, crystal-growth and aggregation.
- Interparticle forces in colloidal systems. Van der Waals forces, modern theory of Lifshitz. Modern electric double layer theory. Colloid stability, DLVO theory.
- Association colloids. Micelles, liquid-crystalline phases of surfactants. Lamellar phases and vesicles, macro- and micro-emulsions. Colloidal properties of polymers and biological macromolecules.

#### **CHE 651 Raman Spectroscopy (10 ECTS)**

- Introduction to Raman Spectroscopy. The tools we need.
- Harmonic Oscillator and vibrational spectroscopy of diatomics and polyatomics.
- Molecular symmetry and spectroscopy.
- Electrical properties of molecules and matter.
- Time-independent perturbation theory.
- Time-dependent perturbation theory.
- Scattering.
- Raman and resonance Raman spectroscopy.
- Experimental considerations.
- Lasers.
- Applications of Raman spectroscopy.

#### **CHE 670 Heterogeneous Catalysis (10 ECTS)**

- Influence of external mass and heat transport processes on the rate and selectivity of a heterogeneous catalytic reaction.
- Influence of internal mass (diffusion) and heat transport processes within porous catalysts on the rate and selectivity of a catalytic reaction.
- Analysis of experimental rate data of a catalytic reaction.
- Environmental Catalysis: The selective catalytic reduction of NO. From the fundamental research to its applied technology.
- Techniques for studying catalytic reaction mechanisms.

#### **CHE 681 Biochemical Engineering (10 ECTS)**

Introduction: Biochemical engineering, biotechnology and industry. The chemicals of life: Proteins, nucleic acids, saccharides and lipids. Enzymes and enzyme kinetics. Enzyme applications. Stoichiometry of microbial reactions. Kinetics of substrate consumption, product formation and biomass production in cell cultures. Ideal bioreactors and their modelling.

#### **CHE 690 Synthesis, Characterization and Technology of Polymers (10 ECTS)**

Introduction. Step-growth polymerization – polycondensation. Free radical chain polymerizations. Free radical chain copolymerizations. Anionic polymerizations. Cationic polymerizations. Propagation-depropagation equilibria in polymerization processes. Stereospecific polymerizations. Chemical reactions on polymers. Functional polymers, block and graft copolymers, model networks. Reactors and processes for homogeneous (single-phase) reactions. Heterogeneous free radical polymerizations. Reactors and processes for heterogeneous ionic



polymerizations and reaction injection moulding. Reactors and processes for heterogeneous catalytic polymerization.

#### **CHE 695 Aquatic Chemistry of Heavy Metals (10 ECTS)**

This course provides chemical principles that are important to the chemistry of heavy metal ions in natural environments and in particular in natural aquifer systems. The chemical principles that can be applied in order to understand the chemical behaviour and the use of chemical thermodynamics for describing reactions of metal ions under natural conditions and in the presence of naturally occurring ligands, are reviewed extensively. The course includes introductory chapters on nucleogenesis, metal distribution on the geosphere and characterization of aquatic systems, and a main chapter on the chemistry of metal ions in aquatic solutions. Specific topics such as solid phase solubility, hydrolysis, chloride, carbonate and humate complexation, redox reaction, colloid formation and geochemical reactions are discussed in detail and numerous examples of analytical methods/techniques, used in the determination and characterization (speciation) of metal species under environmental conditions, are also discussed.

#### **CHE 715 Mass Spectrometry (10 ECTS)**

This course covers the micro-analytical method of mass spectrometry for the detection of traces of chemicals in simple and complex matrixes. The contents of the course include a brief history in mass spectrometry, the understanding of the basic terminology, the theory behind mass spectra interpretation, the essential parts and modes of instrument operation (tune, SIM, SCAN mode), references to simple process mass spectrometers, the wide coupling (hyphenated) of single (GC-MS, LC-MS, ICP-MS, TG-MS, etc.) and double mass spectrometers (tandem GC-MS/MS, tandem LC-MS/MS), the portable mass spectrometers (field/on-site spectrometers), the MALDI technique and various applications at environmental, food and beverages, forensic and pharmaceutical sectors.

#### **CHE789 Synthetic Organic Chemistry (10 ECTS)**

Synthetic design, principles of retrosynthetic analysis, transforms and retrons. Strategies based on transforms and powerful transforms for reducing complexity. Bi-directional synthetic analysis and topological strategies. Mechanistic strategies. Strategies based on functional group interconversions. Protective groups. Selecting organometallic reagents for strategic bond formation. Stereochemical strategies. Chiral additives, catalysts, auxiliaries. Examples of complex organic molecule synthesis with simultaneous application of various strategies.

### **Areas of Research**

Research in the Department of Chemistry focuses on the following areas:

- Chemistry of Porous Solids
- Physical Chemistry of Colloids and Interfacial Systems
- Computational Chemistry/Molecular Simulation
- Heterogeneous Catalysis/Environmental Catalysis and Technology
- Polymer Synthesis and Characterization
- Synthetic Organic Chemistry
- Synthetic Inorganic Chemistry
- Materials Chemistry
- Analytical and Environmental Chemistry and

Radiochemistry

- Instrumental Analysis
- Molecular Spectroscopy
- Fullerene and Supramolecular Chemistry
- Bioorganic Chemistry and Chemical Biology

Chemistry faculty members participate in international research projects and collaborate with several foreign universities and research centers. Members of the Chemistry Department have participated in the past in European research programmes. Since 1998, with the participation of Cyprus in the 5th and 6th Framework Programmes of the European Union, the participation of the Chemistry Department in European projects has grown considerably, and more recently to the programmes within Horizon 2020. The following list contains representative examples of international research programmes in which researchers of the Department of Chemistry have collaborated in the past, or are currently participating:

1. Initiative Avicenne (EU)
2. Human Capital and Mobility (EU)
3. Training and Mobility of Researchers (EU)
4. Advanced Stimuli Responsive Materials Projects (JHPC/NEDO, Japan)
5. Research Training Networks (5th Framework Programme, EU)
6. Environment and Sustainable Development (5th Framework Programme, EU)
7. Quality of Life (5th Framework Programme, EU)
8. Growth (5th Framework Programme, EU)
9. Energy (6th Framework Programme, EU)
10. Interreg III (7th Framework Programme, EU)
11. Horizon 2020
12. European Cooperation in Science and Technology (COST)

A number of faculty members in the Department participate in the Greece-Cyprus and Romania-Cyprus Bilateral Research Programmes and in the programmes of the Cyprus Research Promotion Foundation. As a result of the applied research carried out in the Department of Chemistry, four patents have already been issued (one German, one European and two USA) and two others have been submitted (European Patent Office).

### **Research Laboratory Equipment**

The Chemistry postgraduate students carry out their experimental studies in the research laboratories of the Chemistry faculty. The equipment in these laboratories, valued at millions of euros, has been purchased through the University budget (internal funding) and via competitively awarded European and national research grants (external funding).

The most important research equipment of the Department is summarized below:

- 300 and 500 MHz Bruker NMR Spectrometers
- Xcalibur III Oxford Single-crystal X-ray Diffractometer
- Powder X-ray Diffractometer
- Q100 TA Differential Scanning Calorimeter (DSC)
- CHNS-O Eurovector Elemental Analyser
- Princeton Electrochemistry Equipment
- MALDI TOF-TOF MS
- Circular Dichroism
- Polarimeter
- MK I Sherwood Magnetic Balance
- KSV 2000 Langmuir-Blodgett apparatus equipped with Brewster-Angle Microscope
- Kibron Langmuir trough with a Biolin Polarization-Modulation Infrared Reflection-Absorption spectrometer (PM-IRRAS)
- TA Instruments Advanced Rheometer
- TA Instruments Isothermal Titration Calorimeter (ITC)
- JASCO 6300 Fluorescence Spectrophotometer
- Multiscop (Surface Plasmon Resonance (SPR) and Ellipso-metry) by Optrel
- Buchi Laboratory Spray Drier
- Avestin high-pressure homogenizer for nanoemulsion formation
- Quartz-Crystal Microbalance (QCM) QA920 by Ametek
- Shimadzu Thermal Gravimetric Analyser (TGA)
- Waters HPLC System with dual pump and UV detector
- Shimadzu FTIR Model IR Prestige-21 with NIR kit and Pike Miracle ATR
- Nox, CO<sub>2</sub>, CO, H<sub>2</sub> and CH<sub>4</sub> Infrared Gas Analyzers
- BET Micromeritics Apparatus
- PicoPlus Molecular Imaging (Agilent) Atomic Force Microscope
- Nanosecond Resonance Raman/TRRR setup
- Computational Chemistry Cluster (PQS) QuantumCube CPU (64-bit Opteron Processors)
- Alpha/beta Radioactivity Proportional Counter
- Preparative High-Performance Liquid Chromatography (HPLC) System from Waters, with autosampler and fraction collector.
- N<sub>2</sub> Liquefier.

### • Agapios Agapiou, Assistant Professor

His research is focused on the use and development of analytical chemistry methods, especially instrumental methods of analysis, for the qualitative and quantitative determination of Volatile Organic Compounds (VOCs) and their exploitation in novel medical, biochemical, environmental, food, safety and security applications. Specifically, his research includes the following:

- Identification and mapping of the chemical signatures of human presence, emanating from expired air, urine, blood, sweat and other biological excretions
- Assess and manage solid waste and municipal sewage treatment plants
- Evaluate indoor air quality (workplaces, car cabins, transportation means, catering facilities, clean rooms, etc.) for exposure to toxic environmental contaminants
- Monitor the quality of bottled and tap water based on the transfer of VOCs from the packaging to the water or the aging of the water distribution system
- Early diagnosis and monitoring of various diseases and metabolic disorders such as cancer, diabetes, asthma, liver or kidney failure by correlating VOCs with human metabolic pathways
- Detection of adulteration, spoilage and authenticity of food based on the spatial modification of the chemical signature

### • Nikos Chronakis, Associate Professor

His research is focused on: The tether-directed remote functionalization of fullerene C<sub>60</sub>; the synthesis of enantiomerically pure bis- and trisadducts of C<sub>60</sub> with C<sub>2</sub>- and C<sub>3</sub>- symmetrical inherently chiral addition patterns; the study of enantiomerically pure bis- and trisadducts of C<sub>60</sub> with C<sub>2</sub>- and C<sub>3</sub>- symmetrical inherently chiral addition patterns in chiral recognition and in chiral photosensitization; the synthesis of organic materials with well-defined 3D-structures consisted of fullerene building units (Platonic solids, COFs); and, the synthesis of giant fullerene amphiphiles and study of their self-assembling behaviour in water.

### • Angelos M. Efstathiou, Professor

His research is focused on the field of heterogeneous catalysis, as a means for solving critical environmental problems (e.g. air and water pollution), problems related to the production of valuable chemical products, and the effective utilization of significant energy-related sources (e.g., natural gas, biomass) towards H<sub>2</sub> production. To achieve these goals, new materials-catalysts must be developed and tested or existing ones improved. The design of new catalytic materials requires fundamental knowledge of the relationships between physico-chemical and catalytic (activity/selectivity) surface properties, knowledge of the reaction mechanism and the mechanism of catalyst deactivation.

The main instrumentation that is used in the Heterogeneous Catalysis laboratory at the University of Cyprus for the above described research consists of specially designed gas flow-systems that allow steady-state and transient catalytic experiments to be conducted, quadrupole mass spectrometers, a gas chromatograph, CO, CO<sub>2</sub>, NO<sub>x</sub>, N<sub>2</sub>O and H<sub>2</sub> gas analyzers, in-situ DRIFTS, UV-vis / DRS and Raman flow-cells. Several other catalyst characterization techniques are used in collaboration with other laboratories abroad (e.g., XPS, SEM, HRTEM, Mössbauer, Raman, Photoluminescence). Pioneering research

has also been undertaken regarding industrial NO<sub>x</sub> control by the use of H<sub>2</sub> in the low-temperature range of 120-200°C; this has resulted in one U.S.A. and three European patents, as well as a License Agreement with LINDE ENGINEERING AG for exploitation of these patents.

### • Savvas N. Georgiades, Assistant Professor

Organic synthesis, bioorganic chemistry and chemical biology, medicinal chemistry, anticancer agents, G-Quadruplex ligands, cellular signaling pathway modulators, natural products, C-H bond activation methodology and application.

### • Sophia C. Hayes, Associate Professor

Her research interests expand in two different fields, biophysics and organic semiconductors, with a common thread the understanding of interactions between molecules and their environment using vibrational spectroscopy, and specifically resonance Raman spectroscopy, as a structural probe. Current research focuses on:

- Characterization of structure and photophysics of conjugated polymers for use in optoelectronic devices
- Biophysics: Characterization of the interactions between small molecules and biomolecules (proteins and DNA) for inhibition of aggregation that can lead to many neurodegenerative diseases, or for stabilization of the G-quadruplex, for the development of cancer drugs.
- The two fields come together in very recent work on biosensors, where conjugated polyelectrolytes complex with DNA to detect base mismatches, but at the same time to template specific polymer conformations for nanotechnology

### • Constantina P. Kapnissi-Christodoulou, Associate Professor

Her research interests include the following:

- Development of electrophoretic, chromatographic and electrochromatographic methods for improved achiral and chiral separations of various classes of analytes
- Use of the hyphenated techniques capillary electrophoresis-mass spectrometry (CE-MS) and ultra-performance liquid chromatography-MS-MS (UPLC-MS-MS) for the separation, detection and quantitation of various classes of analytes
- Application of the optimum separation conditions in biological, natural and food samples
- Use of enantiomers as diagnostic biomarkers for diseases
- Determination of the most effective sample pre-treatment methods
- Synthesis, characterization and use of chiral ionic liquids in capillary electrophoresis for improved separations and greater efficiency
- Modification of the capillary columns for improved separations
- Evaluation of synergistic enantioseparation systems
- Use of cyclofructans as chiral selectors in electrokinetic chromatography (EKC)

### • Anastasios D. Keramidas, Professor

Basic research of transition metal complexes. Bioinorganic chemistry of vanadium, chromium, manganese, iron, molybdenum and selenium, including: synthesis and characterization of model transition metal compounds for the active centre of

biomolecules, synthesis and characterization of metal compounds with pharmaceutical properties such as antidiabetic vanadium molecules, and organic selenium compounds with anticancer and antioxidant properties.

Supramolecular chemistry of metal-organic compounds, including: synthesis and characterization of multinuclear metal complexes with defined shape, with Host-Guest properties and novel magnetic and optical properties, synthesis and characterization of supramolecular compounds formed from lipids of transition metal complexes.

#### • Panayiotis A. Koutentis, Professor

Discovery and development of novel heterocyclic chemistry. Sulfur-nitrogen rich heterocycles 1,2,3-dithiazoles and 1,2,6-thiadiazines are under investigation.

Novel conjugated organic polymers based on 1,2,6-thiadiazines; analogues of poly(pyrroles) and poly(thiophenes).

Design, synthesis and characterization of electronically unusual compounds; organic neutral radicals, diradicals, and zwitterion radicals.

#### • Epameinondas Leontidis, Professor

His main research interest is in the area of physical chemistry of colloids and Interfaces. Emphasis is on the study of lipid monolayers on liquid and solid substrates and their interactions with ions and small molecules. The goal is to understand specific ion effects in biophysical and physicochemical systems and in various technological applications, and the use of lipid mono- and multilayers as sensors. The Langmuir-Blodgett and Layer-by-Layer methods are the main tools for these investigations. In other applications, the sol-gel method is used to produce novel mesoporous silicate powders for the removal of boron and heavy metals from aqueous solutions. Mesoporous inorganic oxide films for photocatalytic and biomedical applications are also produced using the Evaporation-Induced Self-Assembly (EISA) method. A recent activity concerns the formulation of multilayer emulsions for protection of sensitive food ingredients.

There is also activity in the area of computational and theoretical chemistry with the goals of modeling the structure of electrolyte solutions close to surfaces and of understanding salt effects on peptide conformations in solution.

Currently, EL collaborates with the Institute for Separation Chemistry (Marcoule, France), the University of Regensburg (Germany), the National Hellenic Research Institute (Athens, Greece), and several groups in the Departments of Chemistry, Physics, and Mechanical Engineering of the University of Cyprus.

#### • Athanassios Nicolaidis, Associate Professor

His research interests lie: (a) in the area of organic reactive intermediates with an emphasis on pyramidalized alkenes, carbenes and nitrenes and; (b) in the application of quantum chemical computations to various organic and environmental chemistry problems. He is working in collaboration with researchers in Italy (ISOF-Biofreeradicals) within the COST framework (Action CM0603) to examine the mechanism of oxidation of methionine and other organic substrates. In the area of pyramidalized alkenes his research efforts are directed towards the synthesis of new pyramidalized alkenes and organometallic derivatives of such species with the aim of synthesizing complex polycyclic organic compounds with well-defined rigid geometries.

#### • Ioannis Pashalidis, Professor

Study of the chemical behaviour of element ions in natural aquifer systems and the application of experimental methods for

the analysis of adsorbed species on surfaces and colloids. Aqueous nuclear chemistry of actinide ions and environmental alpha radiometry. Study of the interaction of f element ions with chelating agents of clinical use in order to determine and characterize the formed species, assess their behaviour under physiological conditions and evaluate their possible use in the decorporation of radionuclides from contaminated persons.

#### • Costas S. Patrickios, Professor

Synthesis, characterization, modelling and applications of functional polymers.

Research is focused on the design and preparation of polymers with improved properties and applications in biotechnology, medicine, optoelectronics, colloidal and environmental chemistry. These polymers are obtained with the polymerization of the appropriate monomer or monomers bearing functional groups with the desired properties. Such properties are the ionic charge (the resulting polymers can be used in protein separation), the nucleophilic character (synthetic polymers mimicking enzymes), the high refractive index (optoelectronic applications), the amphiphilic character (detergency), the very low surface tension (compatibility with the environmentally friendly supercritical carbon dioxide). Other central characteristics of the present polymers are the precise molecular weight (narrow size distribution), the well-defined composition (in case of copolymers) and the controlled architecture (e.g. linear polymers, star polymers or polymer networks; block or random copolymers). These characteristics, which allow the derivation of accurate structure-property relationships, are afforded with the use of "living" synthetic techniques, such as anionic polymerization and group transfer polymerization (GTP), where all polymers grow uniformly during their preparation. The molecular weight and composition of the polymers are characterized using gel permeation chromatography (GPC) and nuclear magnetic resonance (NMR) spectroscopy, respectively. Finally, thermo-dynamic theories are applied for the prediction of polymer behaviour upon aggregation in selective solvents and upon adsorption onto surfaces.

#### • Eftychia Pinakoulaki, Associate Professor

Her research programme addresses a wide range of fundamental problems in biophysical/bioanalytical chemistry. Fourier Transform Infrared (FTIR), Attenuated Total Reflection FTIR, time-resolved step-scan FTIR, and resonance Raman spectroscopies are the tools for the investigation of basic mechanisms in chemistry and biochemistry.

Current projects include:

- Oxygen sensor proteins EcDOS and BsHemAT: Dynamics and ligand discrimination mechanisms
- Dynamics and catalytic mechanism of Aldoxime dehydratase
- Ligand binding properties and dynamics of thermophilic enzymes
- Nitric oxide activation by NOR and heme-copper cbb3
- Applications of FTIR and Raman spectroscopy in food chemistry and biochemistry

#### • Anastasios J. Tasiopoulos, Professor

Synthesis and physicochemical characterization of polynuclear metal complexes with potential applications in both bioinorganic chemistry, as models for the study of related biomolecules and materials Science, since below a critical temperature they can function as magnets and are referred to as Single Molecule Magnets (SMMs).



• **Charis R. Theocharis, Professor**

The research interests of his group are: the study of adsorption on porous solids, the surface properties of zeolites, ALPOs, and the reactivity of their surfaces with gases and vapours. Surface properties of the oxides and hydroxides of calcium and magnesium. Chemistry of organic solids.

## Contact Details

### POSTGRADUATE PROGRAMMES COORDINATOR

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# Department of Computer Science

[www.ucy.ac.cy/cs](http://www.ucy.ac.cy/cs)

The Department of Computer Science attaches major importance to research, since it is through research that it accomplishes one of its foremost missions, while, on the other hand, research enables Computer Science to contribute to local industry and, more generally, to Cypriot society at large. Beyond the foundational topics that concern it, Computer Science also aims at developing methods that will form the basis for the effective solution of “real” problems from every other discipline, with the ultimate goal of improving the quality of life. Moreover, our Department also attaches great significance to applied research and, more specifically, to research which, as far as possible, will be directly useful to local industry. The Department of Computer Science offers four Master programmes and postgraduate programmes at the Ph.D. level in different specialisations of Computer Science.

## Research

The general research areas of the Department include: Parallel and distributed systems and computation, fixed and wireless high-speed networks, internet technologies, concurrent systems, mobile computing, parallel processing, intelligent systems, computer architecture, open and distance learning, medical informatics and telemedicine, and multimedia systems. Part of this work is financed through European research projects, the Cyprus Research and Innovation Foundation and local industry. In the last eight years, the Department has secured its participation in more than 170 research programmes funded by the European Union. This budget exceeds ten million Euros and has assisted in the employment of new researchers and postgraduate students.

## Computer Laboratories and Research Facilities

In total, the Department houses six teaching laboratories, including a digital lab and a walk-in lab. Ten research laboratories accommodate approximately 40 postgraduate students and research associates, who participate in the various research projects of the Department. The computer equipment of the Department includes modern multiprocessor servers, connected through high-speed Gbit network. A state-of-the-art wireless local area network allows access to the computer systems of the Department from anywhere on campus.

## M.Sc. Programmes

To be admitted to a Master’s programme, a candidate must possess a first degree in Computer Science or a related subject from an accredited university with an overall grade of “Very Good”. Any relevant industrial experience may be considered as an additional advantage.

## MASTER IN COMPUTER SCIENCE (MCS)

The Master Programme in Computer Science is designed primarily for Computer Science and other science-related graduates, who seek to develop research skills and enhance their knowledge in advanced areas of Computer Science. Students who attend this programme may pursue a Ph.D. degree after their graduation.

The completion of the programme requires 90 ECTS, and the duration of studies should be at least three semesters. These 90 ECTS correspond to eight courses and a Master’s thesis. More specifically:

- Seven postgraduate courses (8 ECTS each) (any seven from the postgraduate course list).
- One postgraduate course (4 ECTS) (CS 671 Research Methodologies in Computer Science).
- Master’s thesis (30 ECTS).

## MASTER IN ADVANCED INFORMATION TECHNOLOGIES (PROFESSIONAL - PM)

The aim of the Professional Master in Advanced Information Technologies is to help information technology professionals to extend and update their knowledge in advanced computer technologies and to acquire up-to-date know-how in subjects related to the national Information Technology industry like software engineering, the internet, and intelligent systems.

The completion of the course requires 75 ECTS and the duration of studies must be at least four semesters. In particular:

- Seven postgraduate courses of 8 ECTS, out of which 4 should be related to the programme’s scope (identified as such in the Table of Specialization Courses and in the course descriptions).
- One postgraduate course of 4 ECTS (EPL 672 Seminar on Professional Computer Science Practices).



- Master's thesis worth of 15 ECTS, which can be replaced with two extra postgraduate courses.

The needs of employees and professionals in the information technology industry will be considered during the scheduling of courses (afternoon and evening courses and three-hour meetings).

## MASTER IN COGNITIVE SYSTEMS

This is a distance-learning programme, taught exclusively online, in collaboration with the Open University of Cyprus and the Department of Psychology of the University of Cyprus. The Programme is taught in English. Cognitive Systems form a new generation of systems that aim to collaborate with their users at a level cognitively compatible with a non-computing expert, in order to provide personalized and adaptive services, with each party, system and human, learning and adapting to the capabilities of the other. The need for developing such cognitive systems has been widely recognized.

Students are required to take:

- 3 first courses under the Foundations theme (COS511, COS512, COS513), where at least the two introductory courses (COS511, COS512) are expected to be taken during the first semester.
- Electives among all other courses, as long as at least one third of the courses comes from Cognitive Psychology (CP), and one third of the courses come from Computer Science (CS).

## MASTER IN DATA SCIENCE (MDS)

The Programme is offered jointly by the Department of Business and Public Administration, the Department of Computer Science, and the Department of Mathematics and Statistics. It is expected to start in September 2021 and will be offered in English. Data Science is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from Big Data. Data Science is quickly becoming a field of central importance to the strategy of modern organizations. There is an increasing need for highly trained employees, who can think across disciplines to transform data into actionable insights. The objective of the Programme is to provide students with a strong understanding of basic and advanced methods in statistical inference, machine learning, data visualization, and data mining, which are the essential skills a modern data scientist needs to possess. The completion of the Programme requires 90 ECTS and the duration is 1,5-year. The Programme offers 3 tracks (Computer Science Track / Statistics Track / Business Analytics Track). The first two semesters will be dedicated to core courses, while students will select a track at the end of the second semester.

## Courses Description

### CS 601 Distributed Systems (8 ECTS)

*Restricted Choice for MCS, PM*

Basic concepts and principles of distributed systems. Communication, processes and synchronization. Naming. Distributed file systems and distributed operating systems. Security and cryptography in distributed systems. Distributed shared memory and its consistency. Fault-tolerance. Distributed algorithms and distributed programming. Design and development of applications in distributed environments. Casestudies of specific distributed systems (e.g. PlanetLab). Practical exposition with programming project or programming exercises.

### CS 603 Advanced Software Engineering (8 ECTS)

*Restricted Choice for MCS, PM*

Topics in component-based software: Principles of development of component-based systems based on component-based software. Modeling techniques. Software architectures. Coordination programming. Middleware platforms for the development of systems. Software composition. Elements of the distributed programming. Configuration management. Advanced topics in Software Engineering: Requirements engineering processes. Real-time software design. Design with reuse. User interface design. Software change.

### CS 604 Artificial Intelligence (8 ECTS)

*Restricted Choice for MCS, PM*

Introduction to artificial intelligence. Topics in constraint satisfaction. Satisfiability and optimization in logic. Answer set programming. Topics in machine learning, data mining, and reasoning under uncertainty. Introduction to artificial neural networks. Single layer and multi layer Perceptrons. Backpropagation learning algorithm. Deep learning and convolutional neural networks. Recurrent neural networks. Self-organizing maps. Radial-basis function networks. Reinforcement learning. Hopfield neural networks and boltzmann machines.

### CS 605 Advanced Computer Architecture I (8 ECTS)

*Specialization Course for PM*

*Restricted Choice for MCS*

Performance evaluation and comparison, as well as benchmarking programmes; Basic microarchitecture concepts of modern processors; Pipelining, instruction-level parallelism, prediction, speculation, memory hierarchy, and static/dynamic instruction scheduling; Examples of modern processors; Current research projects in the area of computer architecture.

### CS 606 Computer Networks and the Internet (8 ECTS)

*Specialization Course for PM*

*Restricted Choice for MCS*

Introduction to internet and networking technologies. TCP/IP suite of protocols, Quality of Service (QoS), new networking architectures. Protocols and standards (e.g., DiffServ, IPv6, MPLS). Network Performance Evaluation (e.g. queuing theory, and simulation tools). Traffic modelling and traffic engineering. congestion control and resource allocation. Network design and optimization.



### **CS 607 Visual Computing (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

Binary image processing, intensity transformations, the discrete Fourier transform, linear and nonlinear filtering, image compression, image analysis, basic principles of video processing. Basic principles of 3Dgraphics: polygonal representations, transformations, local and world coordinate system, scene graph, camera and field of view specification, orthographic and perspective projection, clipping in 2D & 3D, polygon rasterization, back face elimination, visible surface determination with the Z-buffer method and binary space partitioning trees, local illumination - flat, Phong & Gouraud shading, real-time graphics, applications.

### **CS 646 Advanced Topics in Databases (8 ECTS)**

*Specialization Course for MCS, MDS*

*Restricted Choice for PM*

(i) Fundamentals of modern Database Management Systems (DBMSs): storage, indexing, query optimization, transaction processing, concurrency and recovery. (ii) Fundamentals of distributed DBMSs, web databases and cloud databases: semistructured data management (XML/JSON, XPath and XQuery), document data-stores, key-value data-stores (e.g. BerkeleyDB, MemCached), Introduction to Cloud Computing (GFS, NFS, Hadoop HDFS, replication/consistency principles), "Big-data" analytics (MapReduce, Apache's Hadoop, PIG), column-stores (e.g. Google's BigTable, Apache's HBase, Apache's Cassandra), Graph databases (e.g., Twitter's FlockDB) and overview of NewSQL. (iii) Spatio-temporal data management (trajectories, privacy, analytics) and index structures (e.g. R-Trees, Grid Files), as well as other selected and advanced topics.

### **CS 651 Data Management for Mobile Computing (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

Introduction (wireless technologies, architectures, applications, limitations). Software architectures for mobile computing. Theoretical models for mobile computing. Support for information recovery. Information management. Dynamic redirection of computations. Indicative applications and open problems.

### **CS 653 Computer Games Software Technology (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

Game structure and design, computer animation, movement and deformation, interactive cameras, visual simulation of physically-based models, special effects using particle systems, collision detection, articulated characters, navigation and other behavioural models for autonomous characters.

### **CS 655 Advanced Computer Architecture II (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

Support for parallel programme execution, parallel architectures, different types of multiprocessor inter-connection networks, compilation of parallel programmes, and performance analysis of various parallel applications.

### **CS 656 Computer Graphics: Modelling and Realism (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

Modelling, parametric and implicit surfaces, camera specification, projections of primitives. Graphics pipeline. Local and global illumination, shadows, ray tracing and radiosity. Real-time rendering of large environments. Acceleration techniques.

### **CS 657 Wireless Computer Networks (8 ECTS)**

*Restricted Choice for MCS, PM*

Wireless environment, interference and other problems in wireless communications, basic principles of wireless local and metropolitan area networks, and cellular wireless networks. New architectures and technologies of wireless networks and wireless communication (e.g. ad-hoc and sensor networks, VANETS). Resource management techniques, next generation wireless networks of 3rd, 4th and 5th generation (3G UMTS, LTE, 4G, 5G), design and planning of wireless networks, protocols for wireless and mobile networks. Internet/web of Things.

### **CS 658 Digital Video Processing (8 ECTS)**

*Restricted Choice for MCS, PM*

Basics of analog and digital video. Frequency domain analysis of video signals, spatial and temporal frequency response of the human visual system. Scene, camera, and motion modelling, 3D motion and projected 2D motion, models for typical camera/object motions. 2D motion estimation. Basic compression techniques. Waveform-based coding. Video compression standards (H.261 and H.263, MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21).

### **CS 659 Design on Embedded Systems (8 ECTS)**

*Specialization Course for PM*

*Restricted Choice for MCS*

A review of embedded system processors. Organization of embedded systems: CPUs, RAM, ROM, buses, peripherals, sensors, actuators, interfacing. Examples of widely used processors buses and peripherals. Interfacing with peripherals: sampling, interrupts, advantages and disadvantages. Process distribution between hardware and software. Tools for the development of embedded systems and real-time operating systems. Hands-on experience with the development and implementation of embedded systems.

### **CS 660 Information Retrieval and Search Engines (8 ECTS)**

*Specialization Course for MDS*

*Restricted Choice for MCS, PM*

Introduction to information retrieval. Boolean retrieval. Text encoding: tokenisation, stemming, lemmatisation, stop words, phrases. Dictionaries and tolerant retrieval. Index construction and compression. Scoring and term weighting. Vector space retrieval. Evaluation in information retrieval. Relevance feedback/query expansion. Text classification and Naive Bayes. Vector Space classification. Flat and hierarchical clustering. Web Search basics. Web crawling and indexes. Link analysis.

### **CS 662 Machine Learning and Data Mining (8 ECTS)**

*Restricted Choice for MCS, PM*

Data Warehouse and OLAP Technology for Data Mining. Data Processing. Data Mining Primitives, Languages, and System Architectures. Concept Description: Characterization and Comparison. Mining association rules in Large databases. classification and prediction. Cluster analysis. Mining complex Types of data. Applications and trends in data mining.

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**CS 663 Computational Logic (8 ECTS)**

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*Restricted Choice for MCS, PM*

Historical introduction. Review of classical logic. Abduction and induction. Knowledge representation and knowledge. Reasoning about actions and change. Application of computational logic. Declarative programming. Autonomous agents. Knowledge-based robotics. Intelligent information integration.

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**CS 664 System Analysis and Verification (8 ECTS)**

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*Restricted Choice for MCS, PM*

Formal methods for system specification and analysis. Concurrent systems and interleaving and partial-order semantics. Transition systems and Kripke structures. Temporal logic (linear and branching). Automatic verification and model-checking. Process algebras: syntax, semantics, equivalence relations and axiom systems. Real-time system analysis (timed automata, timed process algebras and timed temporal logic). The tools SPIN and concurrency workbench.

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**CS 665 Constraint Solving Methods (8 ECTS)**

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*Restricted Choice for MCS, PM*

Review of basic concepts from Constraint Satisfaction over Finite Domains. Advanced Consistency Techniques in Binary and non-Binary problems. Constraint Satisfaction and Propositional Logic: new algorithms and reduction techniques. Logic Programs with negations and the systems SMOELS and DLV. Relation between Constraint Satisfaction and Propositional Satisfiability. Redundant Constraints. Planning and Constraint Satisfaction. Satisfaction of Temporal Constraints. Introduction to Distributed constraint satisfaction. Problem solving with CHIP.

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**CS 667 Neuroinformatics (8 ECTS)**

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*Restricted Choice for MCS, PM*

Introduction to Neuroinformatics; basic neurobiology: from the brain to single neurons; biophysics of single neurons; synapses; dendrites and axons. Conductance-based neuron models: the generation of action potentials and the Hodgkin and Huxley equations. Dendritic trees, the propagation of action potentials, cable theory, compartmental models. Modelling synapses. Spiking neuron models and response variability: leaky integrator and integrate-and-fire type neuron models, spike time variability. Current topics in Neuroinformatics including (a) understanding of the neural code (b) synaptic plasticity. Bottom-up/top-down modelling of the brain: modelling of self-control behaviour as an example of top-down modeling. Modelling consciousness. Applications of neuroinformatics; neuroinformatics vs bioinformatics.

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**CS 668 Mechanical Vision (8 ECTS)**

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*Specialization Course for PM*

*Restricted Choice for MCS*

Basic concepts and methodologies relating to the subject of computer vision. Image information, image processing, feature extraction. Image segmentation, clustering, multiple-image processing, case studies.

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**CS 670 Research Methodologies and Professional Practices in Computer Science (8 ECTS)**

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Seminars/lectures in computer science and practice. Research or technical literature reviewing. Presentation of technical study.

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**CS 673 Algorithmic Game Theory (8 ECTS)**

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*Restricted Choice for MCS, PM*

Strategic games. Pure and mixed strategies, utilities, best responses, equilibrium concepts. Pure and mixed Nash equilibria, their refinements and generalisations. Classical existence theorems of equilibria and their algorithmic aspects. Algorithms and complexity of equilibrium searching. The complexity classes PLS and PPAD and their relation to equilibrium computation. Bimatrix games and algorithms to compute their approximate equilibria. The Price of Anarchy and its variants. Analysis of the Price of Anarchy for both general and specific games (e.g., selfish routing games, congestion games, security games). Applications to realistic cases (e.g., social networks, Internet formation).

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**CS 674 Network and System Security (8 ECTS)**

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*Specialization Course for PM*

*Restricted Choice for MCS*

Introduction to security threats and attacks. Cryptographic and cryptanalysis techniques. Key exchange management (PKI). Network and Internet security protocols (IPSec, SSL/TLS). Identification and authentication standards (Kerberos, AAA). System security (Firewalls, IDS). Specific threats on end-systems (viruses, worms, trojan horses, stack overflow, rootkits). Identification of security vulnerabilities in software and operating systems. Checking of networks and applications for vulnerabilities, introduction to computer systems forensics. Security policies. Security management, ethical and legal issues in system security.

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**CS 675 Web Services and Service Oriented Computing (8 ECTS)**

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*Specialization Course for PM*

*Restricted Choice for MCS*

Introductory concepts. Relationship and difference between services and other related formalisms (distributed systems, component-based systems, etc). Fundamental architectures and protocols (REST, SOAP, WSDL, UDDI). Fundamental development platforms (J2EE, NET, etc). Problems and challenges. Information modelling and representation (ontologies, RDF and OWL protocols, etc). Cooperative information systems and service composition.

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**CS 678 Temporal Information Systems in Medicine (8 ECTS)**

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*Restricted Choice for MCS, PM*

The significance of time in medicine. Modelling and reasoning with time (models of time and temporal entities). Requirements, ontologies and temporal reasoning models. General theories of time from the perspective of the medical domain. Temporal databases and their extensions for clinical data. Temporal abstraction of medical data (types of abstractions, time-oriented patient monitoring). Time and clinical diagnosis (diagnostic concepts, example applications, abductive reasoning using time-objects, temporal constraints). Automated support for clinical guidelines and protocols (time-oriented modeling of clinical guidelines). Research challenges.

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**CS 679 Electronic Health (eHealth) (8 ECTS)**

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*Restricted Choice for MCS, PM*

Information retrieval from medical databases, data, medical records, live signals, and data mining using intelligent techniques. Study of application systems that are currently in use for managing medical data and suggest ways for better handling and building, medical knowledge bases, electronic health record, and decision support systems for the medical profession.

### **CS 680 Cognitive Programming (8 ECTS)**

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*Restricted Choice for MCS, PM*

Basic elements of cognitive science and the relation between logic and argumentation. Computation models for cognitive intelligence that follow representational models from cognitive psychology. The structure of knowledge and the human mechanism for common logic. The architecture of cognitive systems and their dynamic development cycle. Utilization of STAR, IBM Watson and other similar systems in the development of cognitive systems.

### **CS 681 Advanced Topics in Software Reus (8 ECTS)**

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*Restricted Choice for MCS, PM*

Levels of reuse. Best practices for reuse. Evolution of reuse. Software repositories. Search and retrieval. Data extraction. Use of dedicated APIs. Design patterns. Object-oriented programming standards. Open source software. Open source licensing and legal issues. Organization policies and open-source based development. License compliance. Model-Driven Engineering reuse. Service-Oriented Computing (SOAP, RESTful). Reuse on service level.

### **CS 682 Advanced Security Topics (8 ECTS)**

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*Restricted Choice for MCS, PM*

Short introduction to security basics and then special topics are presented. Special topics include advanced cryptographic attacks in protocols, software exploitation through code-reuse (return-oriented programming, jump-oriented programming, and call-oriented programming), heap exploitation, side channels, advanced software hardening, exploiting special network protocols (DNS, NTP, etc.), complex attacks in network applications, and privacy issues. The course is seminar-based in part. Once the basics are introduced by the instructor, students will study advanced papers in class and will have the opportunity to get a feeling of what are the important topics in modern security research.

### **CS 683 Technology Entrepreneurship (8 ECTS)**

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*Free Elective*

Study and experimentation with methodologies for innovation-driven entrepreneurship and associated tools, pursuing the translation of students' ideas into entrepreneurial endeavors. Key stages of turning an idea or invention into a commercial product; the Lean Product Process and the Business Model Canvas methodologies; the Disciplined Entrepreneurship methodology; techniques for the creative ideation and the design of software applications, products and services; fundraising and financing options for startups; the basics of incorporation and company structure; attracting talent, establishing and managing a team; tools for project and team management, collaboration, ideation, rapid prototyping; preparation of pitch decks, and pitch presentations in front of potential investors.

### **CS 699 Special Topics in Computer Science (8 ECTS)**

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The content of the course is according to the specific topic. Prerequisites: With consent of the Lecturer.

## **Ph.D. Programme**

Apart from the general requirements of the University of Cyprus for the acquisition of a Ph.D. degree, the Department expects Ph.D. candidates to publish their research results in the proceedings of international conferences and, possibly, academic journals.

A Ph.D. programme comprises the completion of post-graduate courses amounting to at least 60 ECTS (holding a relevant M.Sc. Degree may result in full or partial satisfaction of this requirement), success in a comprehensive examination, acceptance of a research proposal and, finally, the submission of an original thesis which represents a substantial contribution to the relevant field of knowledge.

Admission to a Ph.D. programme requires high academic qualifications in Computer Science and the Department's ability to supervise the research topic that is of interest to the students.

## Research Interests of the Academic Staff

- **Elias Athanasopoulos, Assistant Professor**

System security and privacy.

- **Chris Christodoulou, Professor**

Computational and cognitive neuroscience, Neural networks, Machine learning.

- **Yiorgos Chrysanthou, Professor**

Computer graphics, Virtual and augmented reality, Computer games.

- **Marios D. Dikaiakos, Professor**

Network centric computing, with and emphasis on grid computing, Web technologies, Mobile computing.

- **Yannis Dimopoulos, Professor**

Artificial intelligence, Knowledge representation and reasoning, AI planning, Non- monotonic reasoning, Constraint satisfaction.

- **Chryssis Georgiou, Associate Professor**

Distributed and parallel computing (Theory and Practice), Fault-tolerance and dependability, Algorithms and complexity, Dynamic computing environments.

- **Antonis Kakas, Professor**

Artificial intelligence, Cognitive systems, Machine learning, Computational bioscience.

- **Georgia Kapitsaki, Associate Professor**

Software engineering, Open source software, Service-oriented computing, Privacy protection.

- **Elpida Keravnou-Papailiou, Professor**

Artificial intelligence in medicine, Diagnostic systems, Temporal information systems in medicine (temporal data abstraction), Intelligent data analysis in medicine/Temporal data mining, Hybrid decision support systems.

- **Marios Mavronicolas, Professor**

Algorithmic game theory, Distributed and parallel computing, Algorithmic issues in communications networks, Computational complexity.

- **George Pallis, Associate Professor**

Internet computing, Cloud computing, Internet of things, Online social networks.

- **George Papadopoulos, Professor**

Information systems, Cloud computing, Technology enhanced learning, e-health, e-government, Software engineering and internet technologies.

- **Constantinos Pattichis, Professor**

Intelligent systems, Neural networks, Genetic algorithms, Signal and image processing and analysis, Telematics and their applications in medicine.

- **Anna Philippou, Associate Professor**

Concurrency theory, Formal methods and their application in distributed and real-time systems, Type systems, Privacy

- **Andreas Pitsillides, Professor**

Communication networks, Internet-of-Things (IoTs), Smart systems and Smart spaces. Adaptation and application of mathematical tools to solve problems in communication networks.

- **Yiannos Sazeides, Associate Professor**

Computer architecture: Patterns of computation, Cache redundancy, Chip multicores, Power and temperature aware microarchitectures, Prediction, and Speculation.

- **Vasos Vassiliou, Associate Professor**

Computer and communication networks, Internet of things (IoT), Next generation network architectures, Mobile networks, wireless communications, Network security, Smart systems.

- **Demetris Zeinalipour, Associate Professor**

Data management in computer systems and networks: Mobile and sensor data management; Big data management in parallel and distributed architectures; Spatio-temporal data management; Crowd, Web 2.0 and indoor data management; Data privacy management.

## Contact Details

### DEPARTMENT SECRETARIAT

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[www.ucy.ac.cy/cs](http://www.ucy.ac.cy/cs)



## Table of Specialisation Courses of the Master's Programmes

Code and Title of Course	Master in Computer Science	Professional Master in Advanced Information Technologies
CS 601 – Distributed Systems	√	
CS 603 – Advanced Software Engineering	√	√
CS 604 – Artificial Intelligence	√	
CS 605 – Advanced Computer Architecture I	√	√
CS 606 – Computer Networks and the Internet	√	√
CS 607 – Visual Computing	√	√
CS 646 – Advanced Topics in Databases	√	
CS 651 – Data Management for Mobile Computing	√	√
CS 653 – Computer Games Software Technology	√	√
CS 655 – Advanced Computer Architecture II	√	√
CS 656 – Computer Graphics: Modelling and Realism	√	√
CS 657 – Wireless Computer Networks	√	
CS 658 – Digital Video Processing	√	
CS 659 – Design of Embedded Systems	√	√
CS 660 – Information Retrieval and Search Engines	√	
CS 662 – Machine Learning and Data Mining	√	
CS 663 – Computational Logic	√	
CS 664 – System Analysis and Verification	√	
CS 665 – Constraint Solving Methods	√	
CS 667 – Neuroinformatics	√	
CS 668 – Mechanical Vision	√	√
CS 673 – Algorithmic Game Theory	√	
CS 674 – Network and System Security	√	√
CS 675 – Web Services and Service Oriented Computing	√	√
CS 678 – Temporal Information Systems in Medicine	√	√
CS 679 – Electronic Health	√	
CS 680 – Cognitive Programming	√	
CS 681 – Advanced Topics in Software Reuse	√	√
CS 682 – Advanced Security Topics	√	√
CS 699 – Special Topics in Computer Science	√	√



κοινωνία

ΑΝΑΓΕΦΕΡΕΤΑΙ ΤΟΣ ΚΑΘΗΜΕΡΑ ΑΝΑΓΕΙΝΕΤΑΙ ΟΙ ΚΑΤΑΡΤΙΣΤΕΣ ΤΗΣ ΠΑΡΑΤΗΡΗΣΗΣ ΟΙΚΟΝΟΜΙΚΩΝ ΕΠΙΤΕΜΩΝ ΚΑΙ ΣΤΟΙΧΕΙΩΝ

# Department of Mathematics and Statistics

[www.ucy.ac.cy/mas](http://www.ucy.ac.cy/mas)

The Department offers postgraduate programmes which lead to the following degrees:

- Master in Mathematical Sciences
- Ph.D. in Mathematics - Applied Mathematics
- Ph.D. in Mathematics - Pure Mathematics
- Ph.D. in Statistics

## Postgraduate Programmes

The programmes are supervised by the Postgraduate Programmes Coordinator, who can be either the Chairperson of the Department or a faculty member appointed by the Departmental Board. The Coordinator is the Chairperson of the Postgraduate Studies Committee.

## Admission to Postgraduate Programmes

The number of postgraduate students to be admitted is announced separately for each specific programme at the Master's or Doctorate level.

For more information, please refer to the Admission and Attendance Regulations – Application Requirements or please consult the Graduate School or the Department Secretariat.

The criteria for evaluation and ranking of the candidates are the following:

- Prior university training in an appropriate field of study and a transcript of the degree. Appropriate fields of study are mathematics, statistics or other related subjects such as computer science, physics, engineering, etc.
- Recommendation letters (at least two) from university professors.
- Personal interview (if necessary).
- Other qualifications, such as exams, awards, distinctions, etc.
- Sufficient knowledge of the English language (recommended).

Candidates with insufficient knowledge of mathematics will be required to attend a number of undergraduate courses, in addition to those required by the regulations of the Department.

## MASTER'S IN MATHEMATICAL SCIENCES

### Regulations

- To obtain a Master's degree in Mathematical Sciences, successful completion of 90 ECTS is required. Each course corresponds to 10 ECTS and the Master's Thesis to 30 ECTS.
- Every postgraduate student must complete a Master's thesis. A student may choose whether to work on a thesis in pure or applied mathematics.

The Masters thesis has the following codes:

MAS 801 Master's Thesis in Applied Mathematics I (30 ECTS) or

MAS 802 Master's Thesis in Pure Mathematics I (30 ECTS)

MAS 600.1 Continuation of Master's Thesis in Applied Mathematics II (0 ECTS) – if needed

## Indicative Programme of Studies

Options	ECTS per Course	Total
2 Compulsory Courses	10	20
4 Elective Courses	10	40
Master Thesis	30	30
<b>TOTAL</b>		<b>90</b>

## Indicative Programme of Studies per Semester

	ECTS per Course	Total
<b>Fall Semester</b>		
1 Compulsory Course	10	10
2 Elective Courses	10	20
<b>TOTAL</b>		<b>30</b>
<b>Spring Semester</b>		
1 Compulsory Course	10	10
2 Elective Courses	10	20
<b>TOTAL</b>		<b>30</b>
<b>Fall Semester</b>		
Master Thesis	30	30
<b>TOTAL</b>		<b>30</b>
<b>GRAND TOTAL</b>		<b>90</b>

## List of Courses

### Compulsory Courses:

2 compulsory courses (one of each team)

#### Team A – One of the following:

- MAS 601 Measure Theory and Integration
- MAS 606 Function Theory of One Complex Variable
- MAS 632 Riemannian Geometry
- MAS 625 Group Theory / MAS 626 – Galois Theory

#### Team B – One of the following:

- MAS 603 Partial Differential Equations
- MAS 671 Numerical Solution of Ordinary Differential Equations
- MAS 682 Classical Mechanics



## Elective Courses

### 2 Elective Courses From the following List:

MAS 601	Measure Theory and Integration
MAS 602	Fourier Analysis
MAS 603	Partial Differential Equations
MAS 604	Functional Analysis
MAS 605	Second Order Elliptic Partial Differential Equations
MAS 606	Function Theory of One Complex Variable
MAS 607	Function Theory of Several Complex Variables
MAS 613	Ordinary Differential Equations
MAS 617	Topics in Mathematical Analysis I
MAS 618	Topics in Mathematical Analysis II
MAS 619	Topics in Mathematical Analysis III
MAS 620	Approximation Theory
MAS 621	Numerical Linear Algebra
MAS 622	Coding Theory
MAS 623	Number Theory
MAS 624	Introduction to Commutative Algebra
MAS 625	Group Theory
MAS 626	Field and Galois Theory
MAS 627	Group Representation Theory I
MAS 628	Group Representations II
MAS 629	Topics in Algebra
MAS 630	Algebraic Geometry
MAS 631	Differential Topology
MAS 632	Riemannian Geometry
MAS 633	General Relativity
MAS 634	Algebraic Topology I
MAS 635	Lie Groups and Algebras
MAS 636	Algebraic Topology II
MAS 637	Spectral Geometry
MAS 638	Spin Geometry
MAS 640	Topics in Geometry I
MAS 641	Topics in Geometry II
MAS 660	Probability Theory
MAS 671	Numerical Solution of Ordinary Differential Equations
MAS 672	Numerical Solution of Partial Differential Equations
MAS 673	Finite Element Methods
MAS 677	Topics in Numerical Analysis I
MAS 678	Topics in Numerical Analysis II
MAS 679	Topics in Numerical Analysis III
MAS 682	Classical Mechanics
MAS 683	Fluid Dynamics
MAS 684	Scientific Computing with MATLAB
MAS 687	Topics in Applied Mathematics I
MAS 688	Topics in Applied Mathematics II
MAS 689	Topics in Applied Mathematics III
MAS 697	Topics in Differential Equations I
MAS 698	Topics in Differential Equations II
MAS 699	Topics in Differential Equations III

**Note:** Courses will be offered according to the capacities of the Department

## MASTER IN DATA SCIENCE (MDS)

The Programme is offered jointly by the Department of Business and Public Administration, the Department of Computer Science, and the Department of Mathematics and Statistics. It is expected to start in September 2021 and will be offered in English. Data Science is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from Big Data. Data Science is quickly becoming a field of central importance to the strategy of modern organizations. There is an increasing need for highly trained employees who can think across disciplines, to transform data into actionable insights. The objective of the Programme is to provide students with a strong understanding of basic and advanced methods in statistical inference, machine learning, data visualization, and data mining, which are the essential skills a modern data scientist needs to possess. The completion of the Programme requires 90 ECTS and the duration is 1,5-year. The programme offers 3 tracks (Computer Science Track / Statistics Track / Business Analytics Track). The first two semesters will be dedicated to core courses, while students will select a track at the end of the second semester.

## Ph.D. IN MATHEMATICS - APPLIED MATHEMATICS

### Requirements for a Ph.D. Degree

#### Indicative Programme of Studies

Obligations	ECTS per course	Total
Teaching Part (partial or full recognition of a Masters degree)		At least 60
4 Research Stages	30	120
2 Writing Stages	30	60
Comprehensive Examinations (2 three-hour exams)	0	0
Submission of proposal for Doctoral Dissertation	0	0
Defense of Doctoral Dissertation	0	0
<b>TOTAL</b>		<b>240</b>

For the completion of a Ph.D. in Applied Mathematics, the following are required:

- 1. Prior to the commencement of a doctoral dissertation, a student must successfully complete at least 60 ECTS at the postgraduate level** (partial or complete exemption may be given by the Departmental Council provided the doctoral student already has a Master's Degree).
- 2. Successful completion of a written Comprehensive Examination (CE)**

Candidates must complete the CE requirement from the first up to the seventh semester of their studies. The CE consists of two, three-hour written examinations. The first written examination must be in analysis (see the syllabus



in the previous section). The second is based on one of four areas (applied mathematics, numerical analysis, partial differential equations, numerical solution of ordinary differential equations – syllabi are given below); each candidate chooses the area he/she wishes to be tested on.

Once the doctoral candidate successfully completes both parts of the CE, he may proceed to the Doctoral Dissertation stage. If the candidate succeeds in only one part of the CE, then he may retake the unsuccessful part the next time the CE is held. If the candidate fails both parts, then he/she will be given one more chance to pass the exam during the next CE period. The CE is written and corrected by the department's faculty who specialize in the chosen areas. A pass score on the CE requires a minimum of 50% of the total points.

Failure to pass the CE a second time will automatically result in termination of the candidate's doctoral studies. The student must pass the CE prior to the submission of her/his research proposal.

### 3. Other Requirements

All other requirements conform to the rules and regulations for postgraduate studies at the University of Cyprus.

## Syllabus for the Comprehensive Examination

### **MAS 780 Comprehensive Examination in Analysis (0 ECTS)**

Structure and properties of real numbers, continuity, differentiability, Riemann integrability. Metric spaces, compactness, connectedness, Bolzano-Weierstrass theorem, Heine-Borel theorem, Baire category theorem, uniform continuity, convergence of sequences and series of functions.  $\sigma$ -Algebras, outer measures, Borel and Lebesgue measures, measurable functions, Lebesgue dominated convergence theorem, monotone convergence theorem, Fatou's lemma. Signed measures, Radon-Nikodym theorem, product measures, Fubini's theorem. The complex plane, stereographic projection. Möbius transformations. Elementary analytic functions. Cauchy-Riemann equations, harmonic functions. Cauchy's integral formula and theorem, Morera's theorem. Liouville's theorem. Fundamental theorem of algebra. Taylor and Laurent series, residues. Maximum principle. Schwarz's lemma, the argument principle, Rouché's theorem, conformal mapping, the Riemann mapping theorem.

#### **Bibliography:**

- Royden, H. L. Real Analysis, New York, Macmillan Rudin, W. Principles of Mathematical Analysis
- Rudin W. Real and Complex Analysis, New York, McGraw-Hill
- John B. Conway, Functions of one complex variable, Springer Verlag
- L. V. Ahlfors, Complex Analysis, McGraw-Hill Markushevich, Theory of Functions, Chelsea Boas, Invitation to Complex Analysis, McGraw Hill

**Useful Courses: MAS 601, 606**

Choice of 1 of the following 4 areas:

### **MAS 783 Comprehensive Examination in Applied Mathematics (0 ECTS)**

Lie groups and algebras, equations of motion (Newton, Lagrange), Poisson structures, integrable systems, Lax pairs, bi-Hamiltonian systems, symmetries, Noether's theorem, variational calculus, integral equations.

#### **Bibliography:**

- P. Olver Applications of Lie Groups to Differential Equations, Second Edition, Springer-Verlag, New York, 1993.
- F.B. Hildebrand, Methods of Applied Mathematics, Dover, 1992
- Course notes from MAS 481 and 682.

### **MAS 784 Comprehensive Examination in Partial Differential Equations (0 ECTS)**

First order partial differential equations, second order partial differential equations: Wave equation, heat equations, harmonic functions. Initial boundary value problems, Fourier series, Green's functions, maximum principle.

#### **Bibliography:**

- G. D. Akrivis, D. Dougalis, Partial Differential Equations (University Publications).
- W. A. Strauss, Partial Differential Equations: An Introduction (Chapters 1–7).
- L. Evans, Partial Differential Equations (Chapter 2 and Chapter 3: Sections 3.1, 3.2).

### **MAS 785 Comprehensive Examination in Numerical Analysis (0 ECTS)**

Numerical solution of nonlinear equations. Vector and matrix norms. Solution of linear systems (direct and iterative methods). Calculation of eigenvalues and eigenvectors. Interpolation (Lagrange and Hermite). Numerical integration (Newton–Cotes, Gauss).

#### **Bibliography:**

- E. Süli and D. Mayers, An Introduction to Numerical Analysis, Cambridge Univ Press, 2003.
- K. Atkinson: An Introduction to Numerical Analysis, Wiley, New York, 1978.
- G. D. Akrivis, D. Dougalis: Introduction to Numerical Analysis, University Publications, Crete, 1997.

### **MAS 786 Comprehensive Examination in Numerical Solution of Ordinary Differential Equations (0 ECTS)**

Single and multistep methods and Runge-Kutta methods for the numerical solution of initial value problems for ordinary differential equations. Finite difference methods for ordinary differential equations. Finite element methods for ordinary differential equations.

#### **Bibliography:**

- L. Fox and D. F. Mayers: Numerical Solution of Ordinary Differential Equations, Chapman and Hall (London, 1987).
- A. Iserles: A First Course in the Numerical Analysis of Differential Equations, Cambridge Univ Press, 1996.
- G. D. Akrivis, D. Dougalis: Numerical Methods for Ordinary Differential Equations, University Publications, Crete, 2006.
- C. Johnson: Numerical solution of partial differential equations by the finite element method, Cambridge Univ Press, 1994.
- G. D. Akrivis: Finite Element Methods, University Lectures, Cyprus, 2005.

## Ph.D. IN MATHEMATICS - PURE MATHEMATICS

### Requirements for a Ph.D. Degree

#### Indicative Programme of Studies

Obligations	ECTS per course	Total
Teaching Part (partial or full recognition of a Masters degree)		At least 60
4 Research Stages	30	120
2 Writing Stages	30	60
Comprehensive Examinations (2 three-hour exams)	0	0
Submission of proposal for Doctoral Dissertation	0	0
Defense of Doctoral Dissertation	0	0
<b>TOTAL</b>		<b>240</b>

For the completion of a Ph.D. in Pure Mathematics, the following are required:

**1. Prior to the commencement of a doctoral dissertation a student must successfully complete at least 60 ECTS at the postgraduate level** (partial or complete exemption may be given by the Departmental Council provided the doctoral student already has a Master's Degree).

**2. Successful completion of a written Comprehensive Examination (CE)**

Candidates must complete the CE requirement from the first up to the seventh semester of their studies. The CE consists of two, three-hour written examinations. The CE is based on two of three areas (analysis, algebra, geometry – syllabi are given below), which the candidate is free to choose.

Once the doctoral candidate successfully completes both parts of the CE, he may proceed to the doctoral dissertation stage. If the candidate succeeds in only one part of the CE, then he may re-take the unsuccessful part during the next CE period. If the candidate fails both parts, then he will be given one more chance to pass the CE (during the next CE period). The CE is prepared and corrected by the department's faculty members who specialize in the chosen areas. A pass score on the CE requires a minimum of 50% of the total points.

Failure to pass the CE a second time will automatically result in termination of the candidate's doctoral studies. The student must pass the CE prior to the submission of his/her research proposal.

**3. Other Requirements**

All other requirements conform to the Rules and Regulations for Postgraduate Studies at the University of Cyprus.

## Syllabus for the Comprehensive Examination

Choice of 2 of the following 3 areas:

### MAS 780 Comprehensive Examination in Analysis (0 ECTS)

Structure and properties of real numbers, continuity, differentiability, Riemann integrability. Metric spaces, compactness, connectedness, Bolzano-Weierstrass theorem, Heine-Borel theorem, Baire category theorem, uniform continuity, convergence of sequences and series of functions.  $\sigma$ -Algebras, outer measures, Borel and Lebesgue measures, measurable functions, Lebesgue dominated convergence theorem, monotone convergence theorem, Fatou's lemma. Signed measures, Radon-Nikodym theorem, product measures, Fubini's theorem. The complex plane, stereographic projection. Möbius transformations. Elementary analytic functions. Cauchy-Riemann equations, harmonic functions. Cauchy's integral formula and theorem, Morera's theorem. Liouville's theorem. Fundamental theorem of algebra. Taylor and Laurent series, residues. Maximum measure principle. Schwarz's lemma, the argument principle, Rouché's theorem, conformal mapping, the Riemann mapping theorem.

#### Bibliography:

- Royden, H. L. Real Analysis, New York, Mackmillan Rudin, W. Principles of Mathematical Analysis
- Rudin W. Real and Complex Analysis, New York, McGraw-Hill
- John B. Conway, Functions of one complex variable, Springer Verlag
- L. V. Ahlfors, Complex Analysis, McGraw-Hill Markushevich, Theory of Functions, Chelsea Boas, Invitation to Complex Analysis, McGraw Hill

Useful Courses: MAS 601, 606

### MAS 781 Comprehensive Examination in Algebra(0 ECTS)

Groups and homomorphisms, Lagrange's theorem. Direct and semi-direct products. Cyclic, dihedral and symmetric groups. Free groups, generators and relations, finitely generated Abelian groups. Group actions. Sylow's theorem and p-groups. Simple groups, composition series. Solvable groups. Rings and homomorphisms. Ideals. Polynomial rings. Factorization in commutative rings. Modules and exact sequences. Extensions of fields, splitting field of a polynomial, separable extensions, normal extensions. Fundamental theorem of Galois theory. Roots of unity and cyclotomic polynomials. Solvability by radicals. Symmetric functions and Abel's theorem.

#### Bibliography:

- I. Herstein, Topics in Algebra, N.Y. Wiley
- T. Hungerford, Algebra, Springer-Verlag
- J. Rotman, An Introduction to the theory of groups, Fourth Edition, Springer-Verlag
- P. Cameron, Introduction to Algebra, Oxford University Press

Useful Courses: MAS 625, 626

### MAS 782 Comprehensive Examination in Geometry (0 ECTS)

Topological and differentiable manifolds, basic examples and properties. Fundamental group. Tangent spaces. Partitions of unity. Normal values. Vector fields, flows. Frobenius' theorem. Differentiable forms. Stokes' theorem. Riemannian manifolds. The Riemannian connection and exterior differential forms. Geodesic curves, exponential mapping, normal coordinates, Gauss' Lemma. Hopf-Rinow theorem. Curvature. Gauss-Bonnet theorem. Hadamard-Cartan theorem.

### Bibliography:

- Boothby, W. An introduction to differentiable manifolds and Riemannian Geometry, Academic Press
- M. Do Carmo, Riemannian Geometry, Birkhauser
- K. M. Lee, Riemannian Geometry, Springer

Useful Courses: MAS 631, 632

## Ph.D. IN STATISTICS

### Requirements for a Ph.D. Degree

For the completion of a Ph.D. in Statistics, the following are required:

**1. Prior to the commencement of a doctoral dissertation a student must successfully complete at least 60 ECTS at postgraduate level**, in accordance with the provisions of the programme of studies of the Department. Students with a Master's degree are partially or fully exempted from this requirement.

The 60 ECTS should be completed as follows:

- At least 10 ECTS in Probability Theory (MAS 660).
- At least 10 ECTS in Statistical Theory (MAS 670).
- At least 10 ECTS in Simulation and Data Analysis (MAS 658).

The remaining 30 ECTS may be completed with any postgraduate courses offered by the Department, including reading courses.

### 2. Comprehensive Examination (CE)

Successful completion of the following CEs with a grade of 7.5 or better:

- CE in Probability Theory (MAS 760) – 0 ECTS
- CE in Statistical Theory (MAS 770) – 0 ECTS
- CE in Simulation and Data Analysis (MAS 758) – 0 ECTS

The CE in Probability Theory (MAS 760) and Statistical Theory (MAS 770) correspond to the final exams for MAS 660 and MAS 670. The CE in Simulation and Data Analysis (MAS 758) is comprised of an open lecture on a project involving data analysis and computations.

The student must complete the CE requirement by the sixth semester of their studies and prior to the submission of their Research Proposal.

### 3. Seminar

All doctoral students must enrol in the Seminar of Applied Statistics for at least 6 semesters.

Seminar Codes	ECTS
MAS 751 Seminar in Applied Statistics (Ph.D.) I	0
MAS 752 Seminar in Applied Statistics (Ph.D.) II	0
MAS 753 Seminar in Applied Statistics (Ph.D.) III	0
MAS 754 Seminar in Applied Statistics (Ph.D.) IV	0
MAS 755 Seminar in Applied Statistics (Ph.D.) V	0
MAS 756 Seminar in Applied Statistics (Ph.D.) VI	0

### 4. Other Requirements

All other requirements conform to the Rules and Regulations for Postgraduate Studies at the University of Cyprus.

### The Syllabus Content for the Comprehensive Examination

#### MAS 758 Comprehensive Examination (CE) in Statistical Simulation and Data Analysis (0 ECTS)

A project involving data analysis and statistical computations is assigned during the semester, which should be completed within 4 weeks. The CE corresponds to a presentation of the project during the semester, that is open to the faculty members and the Ph.D. students.

#### MAS 760 Comprehensive Examination in Probability Theory (0 ECTS)

Axiomatic foundation, measure theoretic probability, measure theory and integration,  $\sigma$ -algebras, monotone classes, events, probability spaces, stochastic independence, 0-1 laws, the Borel-Cantelli lemmas. Random variables, distribution of a random variable, continuous and discrete random variables, distribution of a function of a random variable, random vectors. Expectation of a random variable, expected value and independence, expected value as the integral with respect to a probability measure, properties of integration, moments, probability inequalities, conditional expectation. Limit theorems. Modes of convergence of a sequence of random variables, uniform integrability, convergence of moments, moment generating functions, characteristic functions, theorems of continuity and inversion, infinite divisibility laws and stable laws, central limit theorem, weak and strong laws of large numbers. Martingales and random walks, properties of random walk, limit theorems, definition and properties of martingales, martingale inequalities, convergence criteria, weak and strong laws of large numbers for martingales, central limit theorem for martingales.

#### Bibliography:

1. P. Billingsley, Probability and Measure, Wiley, 2nd Edition, 1986
2. Y.S. Chow and H. Teicher, Probability Theory, Springer Verlag, 2nd Edition, 1988
3. K.L. Chung, A Course in Probability Theory, Academic Press, 1974
4. J.L. Doob, Stochastic Processes, Wiley, 1993
5. W. Feller, An Introduction to Probability Theory and Its Applications, Wiley, Vol. 1, 3rd Edition, 1968 and Vol. 2, 2nd Edition 1971

#### MAS 770 Comprehensive Examination in Statistical Theory (0 ECTS)

Estimation theory, random sample, statistic, families of distributions, exponential families. Estimators (maximum likelihood, least squares, moment estimators, Bayes estimators). Properties of estimators, unbiasedness, sufficiency, consistency. Unbiased estimators of uniformly minimal variance, Fisher information, Cramer-Rao inequality. Rao-Blackwell Theorem and Theorem of Lehmann-Scheffe. Theory of testing statistical hypothesis, decision theory, simple and composite hypothesis, test statistics, properties of tests. Neyman - Pearson lemma, uniformly most powerful tests. Likelihood ratio tests. Hypothesis testing and confidence intervals. Goodness-of-fit tests, tests of independence.

#### Bibliography:

1. E.L. Lehmann and G. Casella, Theory of Point Estimation, Springer, 2nd Edition, 1998

2. E.L. Lehmann and J. Romano, Testing Statistical Hypothesis, Springer, 3rd Edition, 2005
3. E.L. Lehmann, Elements of Large-Sample Theory, Springer, 1988
4. C.R. Rao, Linear Statistical Inference and its Applications, Wiley, 1973
5. R. Serfling, Approximation Theorems in Mathematical Statistics, Wiley, 1980
6. A.W. Van der Vaart, Asymptotic Statistics, Cambridge University Press, 1998

## Courses Description

### **MAS 601 Measure and Integration (10 ECTS)**

Metric spaces.  $\sigma$ -algebras, measures, outer measures. Borel measures on the real line. Measurable functions. Integration. General convergence theorems. Signed measures. Product measures n-dimensional Lebesgue integral. The Radon Nikodym Theorem.  $L_p$  spaces.

### **MAS 602 Fourier Analysis (10 ECTS)**

The Schwarz space. Fourier transform. Plancherel's formula. Convergence of Fourier series and integrals. Applications in partial differential equations. Distributions. Tempered distributions, compactly supported distributions. Sobolev spaces.

### **MAS 603 Partial Differential Equations (10 ECTS)**

First order quasi-linear equations, the method of characteristics. Classification and normal forms. Existence theorem of Cauchy-Kovalevskaya and uniqueness theorem of Holmgren. Distributions and weak solutions. Hyperbolic theory, characteristics, propagation of singularities. Wave equation in one, two and three space dimensions. Conservation laws and shock waves. Elliptic theory, Laplace and Poisson equations, fundamental solutions, harmonic functions. Variational formulation of elliptic boundary value problems. Parabolic theory, heat equation, parabolic initial/boundary value problems.

### **MAS 604 Functional Analysis (10 ECTS)**

Compact operators. Spectral theory. Self adjoint operators. Closed and orthonormal operators. Spectral theorem. Semigroups.

### **MAS 605 Elliptic Partial Differential Equations of Second Order (10 ECTS)**

Laplace equation, fundamental solutions, Green's function, maximum principle, Poisson kernel, Harmonic functions and their properties, Harnack inequalities, equations with variable coefficients, Dirichlet problem, existence and regularity of solutions.

### **MAS 606 Function Theory of One Complex Variable (10 ECTS)**

Basic facts about complex functions of one complex variable. Differentiation. Cauchy-Riemann equations. Elementary complex functions. Complex integration and the Cauchy Theorem. Applications of Cauchy Theorem. Meromorphic functions. Power series and Laurent series. Residues. Entire functions and Conformal mappings.

### **MAS 607 Function Theory of Several Complex Variables (10 ECTS)**

Basic facts about holomorphic functions of several complex variables. Integral representations of holomorphic functions of several complex variables.

### **MAS 613 Ordinary Differential Equations (10 ECTS)**

Existence theorems: Picard-Lindelof and Cauchy-Peano. Uniqueness theorem when Lipschitz condition is satisfied.

Smooth dependence of solutions on parameters. Extensibility of solutions. Linear systems, fundamental solution matrix, systems with periodic coefficient. Stability of nonlinear systems. Sturm-Liouville theory.

### **MAS 617 Topics in Mathematical Analysis I**

### **MAS 618 Topics in Mathematical Analysis II**

### **MAS 619 Topics in Mathematical Analysis III (10 ECTS)**

Topics in real analysis, complex analysis or differential equations.

### **MAS 620 Approximation Theory (10 ECTS)**

Introduction to metric and normed linear spaces. Approximation of functions, best approximation in normed linear spaces. Chebyshev's Theorem, Chebyshev polynomials, wavelet orthonormal bases and characterization of Lebesgue, Sobolev and Besov spaces in terms of their bases. Linear and non-linear approximations.

### **MAS 621 Numerical Linear Algebra (10 ECTS)**

Elements of matrix analysis, vector and matrix norms. Factorization and least - squares methods. Stability. Direct and iterative methods for the solution of linear systems. Methods for calculating eigenvectors and eigenvalues.

### **MAS 622 Algebraic Coding Theory (10 ECTS)**

Finite fields. Linear codes, syndrome decoding. Cyclic codes. BCH codes and Reed - Solomon codes. MDS codes. Permutation decoding.

### **MAS 623 Number Theory (10 ECTS)**

Introduction to algebraic number theory. Quadratic reciprocity, Gauss and Jacobi sums. Field extensions, finite fields, ideal classes. Quadratic and cyclotomic fields. Applications to Diophantine equations.

### **MAS 624 Introduction to Commutative Algebra (10 ECTS)**

Prime and maximal ideals. Extension. Finitely generated  $R -$  modules. Exact sequences. Tensor product of modules. Algebras. Noetherian rings and Artin rings. Dedekind domains.

### **MAS 625 Group Theory (10 ECTS)**

Finite groups, Lagrange's theorem, cyclic, dihedral and symmetric groups. Abelian and simple groups. Sylow theorems, nilpotent and solvable groups. Representation theory.

### **MAS 626 Field and Galois Theory (10 ECTS)**

Polynomial rings. Field extensions, splitting fields. Separable extensions, normal extensions. The fundamental theorem of Galois theory. Roots of unity and cyclotomic polynomials. Solution by radicals. Symmetric functions and Abel's theorem.

### **MAS 627 Group Representation Theory I (10 ECTS)**

Representations. FG-modules, FG-submodules and FG-homomorphisms. Maschke's Theorem and Schur's Lemma. Irreducible module. The group algebra, the centre of the group algebra. Characters, relation between characters and representations. Character tables. Frobenius reciprocity theorem.

### **MAS 628 Group Representation Theory II (10 ECTS)**

Semi simple rings, construction of irreducible  $R -$  modules. Splitting fields. Clifford's theorem. Mackey Decomposition Theorem. Representations of Weyl groups. Representations of compact groups.

### **MAS 629 Topics in Algebra I (10 ECTS)**

Topics from algebra.



### **MAS 630 Algebraic Geometry (10 ECTS)**

Algebraic sets and the Hilbert-Nullstellensatz theorem. Affine, projective and quasi-projective varieties, morphisms, products. Local properties (smooth and singular points), tangent space, dimension. Divisors on algebraic curves, Riemann-Roch theorem. Bezout's theorem and the group structure of an elliptic curve. Blow up and resolution of singularities. Lines on hypersurfaces.

### **MAS 631 Differential Topology (10 ECTS)**

Differentiable manifolds. Tangent space. Partition of unity. Regular points. Sard's theorem. Vector fields and flows. Frobenius Theorem. Differential forms. Stokes Theorem. De Rham's Theorem.

### **MAS 632 Riemannian Geometry (10 ECTS)**

Riemannian manifolds. Geodesics, exponential map, normal coordinates. Gauss lemma. Theorem of Hopf-Rinow. Curvature. Jacobi fields. Theorems of Bonnet-Myers, Synge-Weinstein and Hadamard-Cartan. Homogeneous and symmetric spaces.

### **MAS 633 General Relativity (10 ECTS)**

Lorentz geometry. Special relativity. Newton spacetime, Minkowski spacetime. Lorentz transformation. Einstein equations. Special solutions (Schwarzschild).

### **MAS 634 Algebraic Topology I (10 ECTS)**

Homology theory and applications. Cohomology. Universal coefficient theorem. Products. Künneth formula. Thom isomorphism. Poincaré duality.

### **MAS 635 Lie Groups and Lie Algebras (10 ECTS)**

Differentiable manifolds. Tangent spaces and vector fields. Lie Groups. Exponential function. Homogeneous spaces. The Campbell-Hausdorff formula. Ado's Theorem. Lie algebras. Ideals and homomorphisms. Solvable and nilpotent Lie algebras. Semisimple Lie algebras. Root systems. Compact Lie groups.

### **MAS 636 Algebraic Topology II (10 ECTS)**

Obstruction theory. Bundles and K-theory. Bordism. Spectral sequences. Characteristic classes.

### **MAS 637 Spectral Geometry (10 ECTS)**

Laplace operator. Minimax principle. Isoperimetric inequalities. Heat kernel.

### **MAS 638 Spin Geometry (10 ECTS)**

Clifford algebras. Spin groups and representations. Spin structures. Spin connection. Spin manifolds. Dirac operator. Bochner formula. Lichnerowicz's Theorem.

### **MAS 640 Topics in Geometry I**

### **MAS 641 Topics in Geometry II (10 ECTS)**

Topics from differential geometry, algebraic geometry and algebraic topology.

### **MAS 658 Simulation and Data Analysis (10 ECTS)**

Introduction to R, commands, input/output files. Descriptive statistics, explanatory data analysis, regression analysis and analysis of variance, statistical inference (testing hypotheses, goodness of fit tests). Resampling, Simulation. Importance sampling.

### **MAS 660 Probability Theory (10 ECTS)**

Measure spaces and  $\sigma$ -algebras, independence, measurable functions and random variables, distribution functions, Lebesgue integral and expectation, convergence concepts, law of large

numbers characteristic functions, central limit theorem, conditional probability, conditional expectation, martingales, central limit theorem for martingales.

### **MAS 670 Statistical Theory (10 ECTS)**

Stochastic convergence, estimation, asymptotic properties of estimators, efficiency, testing hypotheses, asymptotic properties and efficiency of testing procedures, convergence in metric spaces, stochastic processes.

### **MAS 671 Numerical Solution of Ordinary Differential Equations (10 ECTS)**

One-step and multistep methods for initial value problems. Runge-Kutta methods. Numerical solution of two-point boundary value problems.

### **MAS 672 Numerical Solution of Partial Differential Equations (10 ECTS)**

Parabolic equations, the heat equation. Stability. The Crank-Nicolson method, ADI methods. Hyperbolic equations, the Courant-Friedrichs-Lewy condition. Elliptic equations, the Poisson equation. Iterative methods for the solution of linear systems.

### **MAS 673 Finite Element Methods (10 ECTS)**

Sobolev spaces. Ritz-Galerkin approximation. Variational formulation of elliptic boundary value problems. Finite element spaces. Polynomial approximation in Sobolev spaces. N-dimensional variational problems.

### **MAS 677 Topics in Numerical Analysis I**

### **MAS 678 Topics in Numerical Analysis II**

### **MAS 679 Topics in Numerical Analysis III (10 ECTS)**

Topics in computational mathematics and approximation theory.

### **MAS 682 Classical Mechanics (10 ECTS)**

Lie groups and Lie algebras. Equations of motion (Newton, Lagrange). Poisson structures, Integrable systems, Lax pairs, bi-Hamiltonian systems, Toda lattices. Symmetries of differential equations, Noether Theorem.

### **MAS 683 Fluid Dynamics (10 ECTS)**

Equations of motion. Viscous flows. Stokes flows. Non-Newtonian and viscoelastic flows.

### **MAS 684 Scientific Computation with MATLAB (10 ECTS)**

Introduction to MATLAB. Data and function approximation. Linear Systems. Eigenvalues and Eigenvectors. Ordinary differential equations. Numerical methods for boundary value problems.

### **MAS 687 Topics in Applied Mathematics I**

### **MAS 688 Topics in Applied Mathematics II**

### **MAS 689 Topics in Applied Mathematics III (10 ECTS)**

Topics from different areas of applied mathematics

### **MAS 697 Topics in Differential Equations I**

### **MAS 698 Topics in Differential Equations II**

### **MAS 699 Topics in Differential Equations III (10 ECTS)**

Topics in ordinary differential equations, Partial differential equations, Potential theory, Calculus of variations.

## Research Interests of the Academic Staff

- **Andreas Anastasiou, Lecturer**

Asymptotic statistics, Distributional approximations, Change-point detection in time series

- **Sergios Agapiou, Assistant Professor**

Bayesian inverse problems, Computational Statistics.

- **Anastasia Baxevani, Associate Professor**

Random spatio-temporal fields, Non-Gaussian stochastic models, Stochastic processes, Environmental statistics.

- **Nelia Charalambous, Associate Professor**

Global analysis, Mathematical physics.

- **Tasos Christofides, Professor**

U-Statistics, Probability Inequalities, Sampling, Stochastic Orders.

- **Cleopatra Christoforou, Professor**

Partial differential equations, Applied analysis, Continuum physics and hyperbolic systems of conservation and balanced laws. Zero viscosity Method and shock waves.

- **Konstantinos Fokianos, Professor**

Integer-Valued time series, Semiparametric statistics, Analysis of spatial data, Analysis of large data sets, bioinformatics.

- **Georgios Georgiou, Professor**

Computational rheology, Computational fluid dynamics, Numerical analysis, Numerical solution of partial differential equations, Computational oceanography.

- **Evis Ieronymou, Assistant Professor**

Arithmetic algebraic Geometry, Number theory.

- **Andreas Karageorghis, Professor**

Numerical analysis, Computational mathematics, Boundary and spectral methods for the numerical solution of differential equations.

- **Stamatis Koumandos, Professor**

Harmonic analysis, Orthogonal polynomials, Special functions, Approximation theory, Analytic number theory.

- **George Kyriazis, Professor**

Approximation theory, Harmonic analysis.

- **Emmanouel Milakis, Associate Professor**

Partial differential equations, Free boundary problems, Geometric measure theory.

- **Christos Pallikaros, Associate Professor**

Group representation theory, Representations of hecke algebras.

- **Efstathios Paparoditis, Professor**

Time series analysis, Bootstrap methods, Multivariate analysis, Non-parametric statistics.

- **Evangelia Samiou, Associate Professor**

Differential geometry, Riemannian geometry.

- **Theofanis Sapatinas, Professor**

Functional time series analysis, Non-parametric statistical inference.

- **Yiorgos-Socratis Smyrlis, Professor**

Partial differential equations, Functional analysis, Numerical analysis, Fluid dynamics.

- **Christodoulos Sophocleous, Professor**

Mathematical physics, Non-linear optics and Non-linear partial differential equations.

- **Nikos Stylianopoulos, Professor**

Orthogonal polynomials, Approximation in the complex plane, Numerical methods in Complex Analysis Conformal and Quasiconformal mapping, Iterative methods for linear systems, Moment problems, Potential Theory.

- **Nicolaos Tziolas, Professor**

Algebraic geometry.

- **Alekos Vidras, Professor**

Complex analysis (Multidimensional Residues, Mean Periodicity), Carleman Formulas, Bohr phenomena.

- **Christos Xenophontos, Professor**

Numerical analysis, Computational mathematics, Numerical solution of partial differential equations, Finite element methods.

## Contact Details

### DEPARTMENT SECRETARIAT

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[www.ucy.ac.cy/mas](http://www.ucy.ac.cy/mas)

# Department of Physics

[www.ucy.ac.cy/phy](http://www.ucy.ac.cy/phy)

The objective of the postgraduate programmes in Physics is to promote research and knowledge in the area of Physics. The Department offers postgraduate programmes leading to M.Sc. and Ph.D. degrees in Pure and Applied Sciences.

## The Objective

A deep understanding of current and new physical principles comes through the creation of theoretical models and, of course, their experimental verification. The objective target is the combination of all these theories and the understanding of the physical world. The results of these efforts are the promotion of new knowledge, which can be used in order to improve the standard of living. Electronic devices, telecommunications, artificial fibers, lasers and detectors are some of the technological applications. Also, solutions to many problems such as environmental pollution, the discoveries of new energy sources, and the protection from physical catastrophes are found through progress and achievements in fundamental and applied Physics.

Postgraduate Physics students can be employed in regional industry or in high technology companies; they can become researchers/teachers in research centres/universities; or, they can become teachers in secondary schools.

Since the study of physics not only provides knowledge in the field but also offers a unique and efficient way of solving problems, postgraduate students in Physics are usually employed in other disciplines.

## Postgraduate Programmes

The Department of Physics offers M.Sc. and Ph.D. degrees in Physics. The student must successfully complete a number of graduate courses with a minimum of 120 ECTS. Fifty of these ECTS correspond to five mandatory core courses, whereas 10 ECTS correspond to an elective course in the area in which the student will specialise. The remaining 60 ECTS are fulfilled by the successful completion of the M.Sc. thesis.

Postgraduate students in the Doctoral programme must pass the five (5) compulsory core courses and one (1) specialization course. After the successful completion of these six (6) postgraduate courses, the Ph.D. candidate must pass a comprehensive examination in the area in which the candidate will specialize. Candidates must also take at least 40 ECTS in courses in addition to the five (5) core courses. These courses should comprise specialization courses relevant to their field, as well as at least one course outside their area of specialization. The possession of an M.Sc. degree partially or completely exempts students from the required completion of the above 90 ECTS. The final requirement for the doctoral degree is the submission of an original thesis. After the completion of the thesis,

students will defend their work before a five-member Committee.

## Table of Courses

	ECTS
<b>Core Courses for Master and Ph.D</b>	
PHY 625 Quantum Mechanics I	10
PHY 626 Quantum Mechanics II	10
PHY 631 Electromagnetism	10
PHY 641 Statistical Physics	10
PHY 811 Experimental Physics	10
<b>Master</b>	
Specialization Course	10
PHY 860 Master's Thesis I	10
PHY 861 Master's Thesis II	20
PHY 862 Master's Thesis III	30
<b>Ph.D.</b>	
Three Specialization Courses	30
One Course outside the area of specialization	10
PHY 870 Research Stage I	30
PHY 871 Research Stage II	30
PHY 872 Research Stage III	30
PHY 873 Research Stage IV	30
PHY 880 Writing Stage I	15
PHY 881 Writing Stage II	15

## Research Interests

The Department accepted its first postgraduate students in 1994. These postgraduate students, in addition to their research activity, have also helped in the organisation of the Department laboratories.

The Department staff participates in research programmes in collaboration with research centres and universities abroad as well as research programmes of the European Community, which are increasing annually. In addition, the Department works with regional industry and other research communities in Cyprus.

The research interests of the Department focus on the following areas:

- Theoretical and Experimental Nuclear Physics
- Theoretical and Experimental High Energy Physics
- Photonic, Lasers and Optoelectronics
- Theoretical and Experimental Condensed Matter Physics
- Theoretical and Computational Biophysics

## Courses Description

### Core Courses

#### PHY 625 Quantum Mechanics I (10 ECTS)

- Double slit experiments: The Complementarity Principle is more fundamental than the Uncertainty Principle, its quantification with recent inequalities, Quantum Eraser.
- Dirac formalism: Application but also its "dangers" (cases of Hermiticity but non-self-adjointness), Emergent non-Hermiticity in Ehrenfest and Hellmann-Feynman theorems.
- Position and momentum representations: Systems with Spatially-uniform force fields, Propagators, Harmonic Oscillator.
- Schrödinger picture: Conservation laws, Dynamical symmetries and degeneracies, Galilei transformation.
- Angular momentum (orbital and spin): Pauli algebra, Systems with bound states.
- Quantum particle in external electric and magnetic fields: Gauge transformations (ordinary but also singular), Magnetic Aharonov-Bohm (AB) effect and relevant nanosystems, Electric fields and time-dependent Hamiltonians, Electric AB effect, Landau Levels, Quantum hall effect.
- Perturbation theories and time-dependent phenomena.
- Adiabatic approximation: Geometric and topological phases (Berry curvature, Aharonov-Anandan phase).

#### PHY 626 Quantum Mechanics II (10 ECTS)

- Symmetries: Definition, Types of symmetries, Physical consequences. Symmetries of classical and quantum mechanics. Lorentz group, Unitary Groups. Noether's Theorem.
- Relativistic quantum mechanics: Klein-Gordon, Dirac equation. Relativistic spin. Relativistic study of hydrogen. Elements of second quantization.
- Classical fields: Action of electromagnetism. Gauge symmetry. Non-Abelian fields; Application to the standard model.
- Scattering theory: Asymptotic states. Born approximation. Optical theorem. Partial waves. Analytic properties of scattering amplitudes. Resonances.
- Topics in perturbation theory: Time-dependent perturbations. Radiation emission, Absorption. Raman scattering.
- Functional integrals: Heisenberg - Schroedinger pictures. The Propagator as a sum over paths.
- Many-body systems: atoms. Computational methods. Hartree-Fock approximation.

#### PHY 631 Electromagnetism (10 ECTS)

- Electrostatics and magnitostatics: Boundary value problems, Electric and magnetic dipole moments, Multipole moments, Static fields in matter, Conductors, Dielectrics, Magnetic materials, Electromagnetic forces and energy.
- Time varying fields: Maxwell equations, Gauge transformations, The electromagnetic energy density, Poynting Vector and Maxwell stress tensor, Conservation laws, Advanced and retarded green functions, Lorentz transformations of the electromagnetic fields.
- Electromagnetic waves in matter, dispersion, Applications in optics, Waveguides, Simple harmonic radiating systems, Dipole radiation, The Lienard-Wiechert potentials, Radiation by moving charges and applications.

#### PHY 641 Statistical Physics (10 ECTS)

From quantum mechanics to statistical mechanics, coherence-decoherence transition, from the wave function to the density

matrix, ensembles in statistical mechanics, the concept of entropy, the role of second law of thermodynamics, the three basic ensembles (microcanonical, canonical, grand canonical), the partition function, the free energy Helmholtz and Gibbs, energy and density fluctuations, from the Schrodinger equation to the equation of state, the ideal gas in canonical and grand canonical ensemble, the ideal Fermigas, Bose systems, photons and phonons, Bose-Einstein condensation, the principles of Classical Statistical Mechanics, phase space and the Liouville theorem, equipartition theorem, real gases, cluster and virial expansion, phase transitions, the Lee-Yang theory, the Ising model, critical phenomena, order parameter, correlation length, critical exponents, the scaling hypothesis, Goldstone excitations, the Ginzburg-Landau theory, critical and tricritical points, anomalous dimensions, the Kadanoff-Wilson Theory, introduction to the renormalization group.

#### PHY 811 Graduate Experimental Physics (10 ECTS)

- Fluorescent/phosphorescent decay time: use of an optical setup with a pulsed laser to excite a variety of fluorescent and/or phosphorescent materials in order to determine characteristic decay times. The time dependent information is obtained via the use of boxcar integrator electronics.
- Gamma ray spectroscopy: use of an ultra-pure Ge detector at low temperature for measurements of gamma ray spectra. Use of specialised pulse amplification and conditioning electronics.
- Non-ionising radiation: use of a spectrum analyser for the analysis of electromagnetic signals ranging in frequency from 10 Hz to 10 GHz.
- Photothermal radiometry: measurement of photo-induced thermal response. Use of cryogen cooled infrared photo-detector and acousto-optically modulated photoexcitation in combination with a lock-in technique.
- Paramagnetic resonance: measurement of the gyromagnetic ratio of the electron using an electron spin resonance experiment and lock-in techniques.

### Specialization Courses

#### PHY 650 Quantum Field Theory I (10 ECTS)

The Dirac equation. Compatibility with special relativity. Relation to the Pauli equation. Solutions of the free equation and their interpretation. The Klein-Gordon equation for a scalar field and its quantization. Quantization of fermions. Quantization of photons. Discrete symmetries C, P, T. The relation between spin and statistics. Interacting fields and their quantization. The S matrix. Relativistic Kinematics. Phase space. Covariant perturbation theory. Calculation of cross sections and decay amplitudes in quantum electrodynamics at tree level. Calculation of weak decays. Comparison of Fermi's weak Hamiltonian to the standard model.

#### PHY 651 Ultrashort Laser Pulse Phenomena (10 ECTS)

Characteristics of femtosecond pulses, femtosecond optics, light-matter interaction, coherent phenomena, ultrashort sources, femtosecond pulse amplification, pulse shaping, measurement techniques of femtosecond spectroscopy, generation of extreme wavelengths.

#### PHY 652 Fiber Optics and Applications in Telecommunications (10 ECTS)

Introduction to fiber optics, planar waveguides, fiber optics fundamentals, materials and fabrication of optical fibers and cabling, non-linear phenomena in optical fibers, fiber optics in telecommunications and the revolution of fiber Bragg gratings. Photosensitivity in optical fibers, properties of fiber Bragg



gratings, fabrications of Bragg gratings in optical fibers, theory of Bragg gratings in optical fibers, applications of fiber Bragg gratings in telecommunications.

#### **PHY 653 Quantum Field Theory II (10 ECTS)**

- Radiative corrections in quantum electrodynamics: Introduction to renormalization, Magnetic moment of the electron, ultraviolet and infrared divergences in loop diagrams, renormalization of the fermionic field and the electric charge, LSZ reduction, The Optical Theorem, The Ward Identity.
- The systematics of renormalization. Dimensional regularization. Perturbation theory to one loop and beyond.
- Functional quantization: Functional integrals in quantum mechanics and field theory, Connection to statistical mechanics, Quantization of fermions and gauge fields.
- Renormalization a la Wilson, renormalization group: The Callan-Symanzik equation, Running coupling constant.
- Non-Abelian Gauge theories: Gauge symmetries, Yang-Mills theory, Feynman rules, Faddeev-Popov quantization and ghosts, BRST transformation, Asymptotic Freedom.
- The standard model: Spontaneous symmetry breaking and Goldstone bosons, Higgs mechanism and mass generation, CKM Mass Matrix, CP violation. One loop study of the decays of the Higgs particle and the top quark.

#### **PHY 654 Ultrafast Spectroscopy of Semiconductors and Semiconductor Nanostructures (10 ECTS)**

Semiconductor basic concepts, Band structure, Exciton, Phonons in semiconductors, Scattering processes in semiconductors, Carrier relaxation, Carrier transport, Ultrafast lasers, Ultrafast spectroscopy techniques, Interpretation of results. Coherent spectroscopy of semiconductors, Initial relaxation of photo-excited carriers, Cooling of hot carriers, Phonon and exciton dynamics, Carrier tunnelling in semiconductor nanostructures, Carrier transport in semiconductor nanostructures, Monte-Carlo simulation of carrier and phonon dynamics, Experimental pump-probe techniques, Luminescence spectroscopy.

#### **PHY 655 Lattice Gauge Theories (10 ECTS)**

The path integral approach to quantization. Euclidean quantum field theory. Quantum fields on a lattice. Continuum limit and critical behavior. The free scalar field on the lattice. Fermions on the lattice. Wilson fermions, Kogut-Susskind staggered fermions, Nielsen-Ninomiya Theorem. Abelian Gauge fields on the lattice and compact QED. Non-Abelian Gauge Fields on the Lattice, Compact QCD. Strong coupling expansion. Hopping parameter expansion. Quark-antiquark potential. Glueball spectrum. Phase structure of lattice Gauge theory. Weak coupling expansion in scalar theories and in QCD. The continuum limit of lattice QCD. The beta function and asymptotic freedom. Monte Carlo methods. Numerical simulation and Markov processes. Algorithms: metropolis, heatbath, overrelaxation. Simulation of fermions: Hybrid Monte Carlo, Multiboson algorithms. Deconfinement and Chiral Phase Transition. High Temperature Phase of QCD.

#### **PHY 656 Modern Topics in Theoretical Condensed Matter Physics (10 ECTS)**

Electrons in a magnetic field: Integer and fractional quantum hall effect (Composite fermions), Two-dimensional electron-hole systems and their hidden symmetries (conservation of pseudomomentum). Wigner Crystal and competitive phases. Graphene, Topological Insulators, Topological (Dirac and Weyl) semimetals, Topological superconductors and Majorana fermions.

#### **PHY 657 Quantum Many-Body Theory and Applications in Solid State Physics (10 ECTS)**

Fock space - Second quantization. Many-particle Green's functions - Matsubara formalism. Linear response theories. Coulomb systems - Dielectric formulation - Screening. Phase diagram of interacting electrons. Functional integrals and Hubbard-Stratonovich transformation: Application to plasmons and superconductivity (Nambu-Gorkov Formalism).

#### **PHY 658 Physics of Hot and Compressed Nuclear Matter (10 ECTS)**

- Creation of hot and dense nuclear matter in relativistic heavy-ion collisions
- Chiral dynamics of Quantum chromodynamics
- Chiral symmetries
- Breakdown and restoration of chiral symmetry in hot and dense hadronic medium
- Experimental evidence of chiral symmetry restoration in heavy-ion collisions
- Creation of particles and resonances near to the production energy threshold
- Production of vector mesons in hadronic nuclear medium
- Production and spectroscopy of di-leptons in heavy-ion collisions

#### **PHY 659 Advanced Topics in Nuclear Physics (10 ECTS)**

- Fundamental building blocks and interactions in the subatomic nucleus
- Creation and interactions of composed nuclear systems
- Chiral symmetry and chiral dynamics in Quantum Chromodynamics (QCD)
- Nuclear reactions
- Production of mesons and resonances
- Particle accelerators and particle detector systems

#### **PHY 660 Exotic States of Matter in a Magnetic Field (10 ECTS)**

Integer quantum hall effect in conventional heterostructures and quantum anomalous hall effect in graphene. Topological insulators and Dirac and Weyl semimetals in a magnetic field, exotic magnetoelectric properties (with appearance of magnetic monopoles), Fractional quantum hall effect and composite fermions. Wigner Crystal in 3- and 2-dimensional condensed matter, competition with Laughlin liquid and with fractional quantum hall effect states. Paired electronic states and the passage to exotic superconductivity. Bubble and stripe phases in higher Landau levels.

#### **PHY 661 Advanced Topics in Particle Physics (10 ECTS)**

- The Quark-Parton model
- Deep inelastic scattering and sum rules
- Weak interactions
- Gauge theories in fundamental interactions
- Electroweak unification: The Glashow-Weinberg-Salam model
- Problems of the standard model
- Supersymmetry and dark matter

#### **PHY 662 Special Topics in Particle Physics (10 ECTS)**

- Neutrino oscillations
- Electron-positron collider physics
- Proton- (Anti)Proton collider physics
- Detectors and methodology for new particle searches
- Cosmology and particle physics

### PHY 663 Measurement and Detection Techniques of Nuclear Radiation (10 ECTS)

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- Introduction to nuclear radiation
- Statistical distributions and experimental errors in radiation measurements
- Interaction of nuclear radiation with matter
- Nuclear electronics
- Gas-filled detectors
- Scintillation detectors
- Semiconductor detectors
- Introduction to nuclear spectroscopy
- Determination of activity concentration of radioisotope
- Dosimetry
- Application of nuclear radiation to medicine

### PHY 664 Statistical and Computational Physics of Biomolecular Systems (10 ECTS)

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#### A. Theoretical Topics (5 weeks)

- Elements of protein and nucleic acid structure
- Intra- and intermolecular interactions in biomolecular systems
- Thermodynamics of biomolecular systems
- The effect of solvent on the thermodynamic stability of biopolymers. Implicit solvent models (from liquid state theory and continuum electrostatics)
- Statistical mechanical theories of protein stability and folding

#### B. Computational Topics (4 weeks)

- Hamiltonians employed in atomic-detail simulations of biomolecules
- Molecular Dynamics (MD) simulations. Basic concepts (MD algorithms; MD in various ensembles; Langevin dynamics)
- MD simulation methods for the efficient sampling of biomolecular phase space
- Monte Carlo (MC) simulations; General methodology
- MC simulation methods for the efficient sampling of biomolecular phase space
- Protein folding simulations in implicit and explicit solvent
- Free-energy calculations in biomolecular systems Theory and implementation

#### C. Computational Applications (3 weeks)

This part is carried out as a set of computational exercises, utilizing specialized software (e.g., CHARMM, UHBD):

- Energy minimization methods and determination of normal modes of vibration in biomolecular systems
- MD simulations in vacuum; heating, equilibration and production stages
- MD simulations with implicit solvent models
- MD simulations in explicit solvent; periodic boundary conditions; stochastic boundary conditions
- Principal component analysis of MD trajectories
- Free-energy perturbation calculations; application in biomolecular systems
- Determination of the electrostatic field of a solvated biomolecule by finite-difference solution of the Poisson-Boltzmann equation

### PHY 665 Quantum Mechanics of Biomolecular Systems: Theoretical and Computational Methods (10 ECTS)

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#### 1. Electronic and Vibrational States of Molecules

- The Born-Oppenheimer approximation
- Molecular electronic states and potential energy surfaces
- Molecular vibrational states and normal coordinates
- The adiabatic and diabatic representations of the molecular Hamiltonian

#### 2. Quantum Mechanics of Open Systems

(The density matrix formalism for the interaction of a system with a bath)

- The reduced density matrix for a system interacting with a bath
- The bath correlation function
- Quantum master equations
- The Markov approximation and the Redfield equations for the calculation of quantum transition rates within the system
- Numerical examples

#### 3. Methods for the Computation of the Electronic Structure of Molecules

- Many-electron states
- The Hartree-Fock method
- The density functional method
- Methods based on perturbation theory
- Configuration interaction methods
- Computational examples

#### 4. Applications to Biomolecular Systems

Charge transfer reactions:

- Marcus and Levich-Dogonadze theories
- Electron transfer pathways in proteins
- DNA electron transfer
- Proton transfer in enzymatic reactions

Energy transfer reactions:

- Relaxation and redistribution of vibrational energy in biomolecules
- Exciton transfer in photosynthesis

### PHY 667 Group Theory in Physics (10 ECTS)

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Symmetries: definition, physics consequences of symmetries, symmetries in classical mechanics and in quantum mechanics. Discrete/continuous symmetries, Local/Global symmetries.

Finite groups: reducible representations, characters, Schur's lemma, tensor products, permutation groups, young tableaux, crystallography groups, Brillouin zones in crystals, Energy level splitting in atoms.

Continuous groups: Lie groups, Lie algebras.

Rotation group: Representations in classical mechanics, Angular momentum in quantum mechanics, Clebsch-Gordan coefficients, Lorentz group and its spinorial representations.

Root and weights: Dynkin diagrams, Classification of classical groups.

SU(N) groups in particle Physics: Isospin, Hypercharge, Hadronic spectrum, Construction of grand unification models.

Supersymmetry: Supersymmetric algebras and groups, applications to the minimal symmetric standard model and to supergravity.

Infinite dimensional algebras: Virasoro algebra, Kac-Moody algebra. Applications in conformal field theory and String theory.

### **PHY 668 Terahertz Pulse Spectroscopy (10 ECTS)**

This course will provide an up-to-date reference on state-of-the-art terahertz spectroscopic techniques, focusing particularly on time-domain methods based on femtosecond laser sources and reviewing important recent applications of terahertz spectroscopy in Physics. The course will cover the following:

- Terahertz time-domain spectroscopy with photoconductive antennas
- Nonlinear optical techniques for terahertz pulse generation and detection-optical rectification and electro-optic sampling
- Time-resolved Terahertz spectroscopy and Terahertz emission spectroscopy
- Time-resolved Terahertz studies of carrier dynamics in Semiconductors
- Superconductors and strongly correlated electron materials
- Time-resolved terahertz studies of conductivity processes in novel electronic materials

### **PHY 669 Optical Properties of Semiconductors (10 ECTS)**

Energy states: Phonons, Electronic/excitonic states, Impurity states, perturbation of states by Strain/Temperature/Electric/Magnetic fields

Optical absorption: Interband/Intraband/Excitonic absorption, Free carrier/Lattice absorption, Kramers-Kronig relationships, Optical constants, Absorption spectroscopy

Emission: Einstein relationships, Interband/excitonic emission, Impurity radiative transitions, Luminescence spectroscopy

Non radiative transitions: Recombination via surface states/defects/impurities, Auger

Optical properties of quantum structures: Quantum Well/dots/wires, carbon nanostructures

Light emission devices: Light emitting diodes, Lasers

Magneto - optical effects: Faraday/Voigt/Kerr effects, Magneto-absorption/Luminescence, Magneto-optical techniques

Photovoltaic structures: Optical properties of solar cells: p-n junction, Schottky, Inorganic/organic/hybrid hetero-structures

### **PHY 670 Spintronics (10 ECTS)**

Introduction: Spin physics in solids, Spin relaxation mechanisms, Spin-orbit interaction, Spin coherence in semiconductors.

Spin dependent electronic transport: Spin diffusion, Spin tunnelling, Spin injection/detection, Optical spin Orientation and spin pumping. Giant and tunnelling magnetoresistance (GMR and TMR), Local and non- local phenomena.

Pure spin currents: Spin Hall Effect (SHE or ISHE), Spin caloritronics.

Spintronic devices: Magnetic recording, Magneto-resistive Random Access Memory (MRAM), Spin-transfer memory and oscillators, Spin transistors, Spin lasers, Devices for Logic or quantum computing.

### **PHY 671 Nanomagnetism and Applications (10 ECTS)**

Introduction: Magnetic materials, Units in magnetism, Contributions to magnetic energy, Domains and domain walls.

Magnetism in low dimensions: Anisotropy in reduced dimensions, Magnetic textures in thin films and nanostructures, Domain walls.

Dynamics: The Landau-Lifshitz-Gilbert equation, Ferromagnetic resonance, Domain wall motion.

Experimental techniques: Static and dynamic magnetometry, Magnetic imaging, Ultra high purity crystal nanostructure growth.

Exotic states of magnetic textures: Domain wall bound states, Vortices, Skyrmions.

### **PHY 673 Particle Detectors – Physics and Applications (10 ECTS)**

Introduction to the experimental techniques used in nuclear and particle physics. Design and operational principles of modern detectors used in High Energy Particle Physics. Topics covered include the theory of interactions of particle with matter, scintillators and time of flight detectors, gas detectors, semiconductor detectors, tracking devices and algorithms for track reconstruction, operation principles of calorimeters and the design of modern calorimeters, detectors for particles identification. Triggering and Data acquisition systems. Large and complex detectors like the ones in LHC, Tevatron and future lepton colliders. Presentation of modern algorithms for jet reconstruction, and for the identification of b-quark and top-quark jets. Hands on experience with these algorithms using Monte Carlo events. Modern Cherenkov detectors, Σύγχρονοι ανιχνευτές Cherenkov, semiconductor scintillators and photomultipliers, TPC detectors and their use in collider and neutrino experiments. Particle physics and particle detectors in medical applications.

### **PHY 674 Physics at the TeV Regime (10 ECTS)**

Presentation of the Physics at the energy scale of LHC and future hadron and lepton colliders. Connection between theory and recent results from LHC experiments with emphasis to topics from the physics of QCD, parton structure functions and hadronization in p-p collisions, emerging phenomena from heavy ion collisions, new observations in the heavy quark sector (top and b), rate B-meson decays, Electroweak gauge bosons, and studies related to the properties of the Higgs boson. Presentation of new ways and techniques in searching for SUSY, and other topics related to searches for new phenomena beyond the Standard Model like dark matter candidates, extra space dimensions, microscopic black holes, flavor changing neutral currents, lepton flavor violation models, composite Higgs models, leptoquarks, technicolor and alternative solutions for the dynamics of Electroweak Symmetry Breaking. Connection of the results from LHC to the results from other non-accelerator based experiments and the constraints imposed to various theoretical models.

### **PHY 675 Principles of Mössbauer Spectroscopy (10 ECTS)**

#### **A. Introduction to the Mössbauer spectroscopy – basic principles**

- The  $\gamma$ -ray resonance
- The Doppler effect
- The recoil effect
- Mössbauer effect and the interpretation of the spectra
- Hyperfine interactions
- Isomeric shift
- Electric quadrupole splitting
- Magnetic hyperfine splitting

#### **B. Mössbauer Spectroscopy**

- The Mössbauer spectroscopy experimental setup
- Calibration procedure
- Radioactive sources
- Determination of the valence and the spin
- Preparation of samples – absorbers
- Spectra measurements procedure
- Mössbauer spectra analysis and interpretation

## Research Interests of the Academic Staff

### • Constantia Alexandrou, Professor

Lattice QCD, Variational methods in field theories, Many-body systems, Stochastic Techniques for Many-Fermion Systems.

### • George Archontis, Associate Professor

Statistical mechanics of biopolymers (Proteins and Nucleic Acids) in solution: Determination of equilibrium and dynamical properties by atomic-detail simulations, Free-energy calculations, Structure and thermodynamic stability of biomolecular complexes, Implicit solvent models, Liquid state theory.

### • Constantinos Christofides, Professor

Laser photothermal physics and instruments, Material sciences, Sensor devices, Solar cells and solar materials, Solar energy applications, Photothermal applications in archaeometry and art.

### • Grigorios Itskos, Associate Professor

Experimental condensed matter physics, Material physics, Optical and magneto-optical spectroscopy of semiconductors, Photo-physics of solution-processed semiconductors, Nanocrystal-organic-hybrid photovoltaics, Energy-charge-spin transfer in semiconductors.

### • Konstantinos Mouloupoulos, Associate Professor

Theoretical physics of condensed matter: Microscopic theories of strongly correlated systems (Superconductivity, Metal-Insulator Transitions), Electronic properties in exotic potentials (Quasicrystals), Aharonov-Bohm configurations and quantum Hall effect.

### • Andreas Othonos, Professor

Ultrafast phenomena in semiconductors, Optoelectronics and nanotechnology, Semiconductor devices, Laser physics, Non-linear phenomena, Physics of quantum information, Fiber optics and fiber Bragg gratings.

### • Haralambos Panagopoulos, Professor

Quantum field theory, Theoretical particle physics, Physics of strong interactions, Computational physics.

### • Photis Ptohos, Associate Professor

Experimental high energy physics in proton-antiproton and proton-proton colliders. Design, construction and calibration of particle detectors, data analysis with emphasis on heavy quark physics (top and bottom) and their connection to the physics of Higgs boson and exotic phenomena beyond the standard model predictions (Supersymmetry, extra dimensions, new dynamics).

### • Panos Razis, Professor

Experimental high energy physics, Electron-positron and proton-proton colliders, Particle detectors, Data acquisition, Calibration, supersymmetry, Higgs, Rare decays, Unification theories, Cosmology, Medical physics.

### • Spiros Skourtis, Associate Professor

Theory of molecular electron transfer reactions, Chemical and biological tunneling phenomena, Theory of reaction rates in condensed phases, Protein structure-function relationships, Protein dynamics-function relationships, Molecular electronics.

### • Stavros Theodorakis, Associate Professor

Theoretical condensed matter physics (Bose-Einstein condensates, phenomenology of high temperature super-conductors, phenomenology of superfluid helium). Nonlinear physics.

### • Nicolaos Toumbas, Associate Professor

Theoretical high energy physics, M/Superstring theories of quantum gravity, black holes, gravity/gauge theory dualities and their holographic interpretation and non-commutative geometry. Applications of non-commutative geometry to condense matter systems with quantum disorder.

### • Theodosios Trypiniotis, Assistant Professor

Experimental condensed matter physics. Spintronics in semiconductor, metallic and nanomagnetic structures. Ultrafast dynamics in magnetic nanostructures. Molecular beam epitaxy (MBE). Nanoparticles for biochemical and energy applications.

### • Halil Saka, Lecturer

Experimental particle physics at the energy frontier. Searches for physics beyond the standard model with the Compact Muon Solenoid (CMS) detector at the CERN Large Hadron Collider (LHC), in particular for extensions of the electroweak sector in unconventional leptonic signatures. Use of machine-learning methods in big data analysis at the LHC. Operations and software development for the CMS hadron calorimeter.

## Contact Details

### DEPARTMENT SECRETARIAT

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Faculty of  
SOCIAL SCIENCES  
AND EDUCATION





# Department of Education

www.ucy.ac.cy/edu

The Department of Education currently offers eight postgraduate programmes, leading to Master and Doctoral degrees in the following areas:

- Educational Administration and Evaluation (Master and Doctoral)
- Curriculum, Teaching and Comparative Education (Master and Doctoral)
- Pedagogical Sciences (Master and Doctoral)
- Mathematics Education (Master and Doctoral)
- Learning in Natural Sciences and Environment (Master and Doctoral)
- Special and Inclusive Education (Master and Doctoral)
- Language, Literacy and Education (Master and Doctoral)
- Inter-departmental and Inter-disciplinary self-financed Programme in Gender Studies (Master and Doctoral)

***Important Note:** In all postgraduate programmes of study (Masters and Ph.D.), changes of the structure of studies have been made, which are pending for approval by the Agency of Quality Assurance And Accreditation In Higher Education in order to be implemented. The changes will be announced on the webpage of the Department, when approved. The postgraduate programmes (Master and Ph.D.), that have already been evaluated and approved, are the following: Educational Administration and Evaluation, Learning in Natural Sciences and Environment, Special and Inclusive Education, Curriculum, Teaching and Comparative Education Mathematics Education and Language, Literacy and Education.*

## Postgraduate Programmes

It is expected that the gradual increase in faculty and administrative personnel will allow additional programmes to be offered, so that a broader spectrum of disciplines in education can be covered.

The Programmes are supervised by the Coordinator of Postgraduate Programmes (CPP) of the Department, who is always the Chairperson of the Department. The Coordinator chairs a three-member Committee, the members of which are appointed by the Departmental Board.

The postgraduate programmes are based on ECTS.

## Completion of the Master Degree

All courses are credited with 12 ECTS. The programmes require 90 ECTS for their completion. Students may choose one of the following options:

### • Option A (completion of 7 courses)

7 Courses X 12 ECTS (84 ECTS) and 1 Seminar X 6 ECTS = 90 ECTS.

### • Option B (completion of 5 courses, 1 seminar and dissertation)

5 Courses X 12 ECTS (60 ECTS), 1 Seminar X 6 ECTS and Dissertation (24 ECTS) = 90 ECTS.

## Seminars

The seminar includes lectures which will focus on a specific topic of the discipline. Each seminar is credited with 6 ECTS.

## Requirements for the Ph.D. Degree

All postgraduate programmes in the Department require students to successfully complete 273 ECTS, distributed as follows:

	ECTS
5 Courses x 12 ECTS	60
Research Stages (8 stages x 15 ECTS)	120
Comprehensive Examination	33
Dissertation Ia, Ib x 15 ECTS	30
Dissertation IIa, IIb x 15 ECTS	30
EDU 750 Submission of Research Proposal	0
<b>Total</b>	<b>273</b>

In cases where a candidate for the Ph.D. programme holds a Master's degree from any department of the University of Cyprus or any recognized university, he is required to complete 3-5 courses (36-60 ECTS), following recommendation of the Academic Advisor responsible for the postgraduate studies of the programme. It is the student's responsibility to request credit transfer.



Students may also be examined by taking a comprehensive examination on three to five courses, depending on the demands of each programme, and in accordance with the Academic Advisor of each programme.

**Note:** All work beginning with *Dissertation III* onwards receives 0 ECTS.

## Application for Admission – Evaluation

For information on the application procedure and the evaluation of the candidates, refer to the *Admission and Attendance Regulations - Application Requirements* or please consult the Graduate School or the Department Secretariat.

In addition to the general requirements, candidates are requested to submit any certificates and/or other documentation that prove English language competency, and any other documentation they consider necessary to strengthen and further support their application for admission, such as articles, research reports, academic distinctions.

## EDUCATIONAL ADMINISTRATION AND EVALUATION

### Programme's Purpose and Objectives

The general aim of this degree is to provide a broad-based view of educational administration and educational evaluation, both through the explicit and focused study of specific concepts and issues, and through their application in the conduct of individual research projects. The teaching team draw on their research to illustrate ideas, and occasionally welcome visiting academics to enrich the programme still further. Students are encouraged to share their experiences and perceptions, and to learn from each other while relating knowledge, principles and insights to their own contexts. The ultimate aim of this programme is to promote the terms and practices of quality and equity in education through the professional development of educators, that will be able to cope with the demands of a contemporary and competitive society.

### Intended Learning Outcomes

The basic intention of the Master's programme of Educational Administration and Evaluation is to assure that contemporary knowledge, methods and basic principles in the field of educational administration and evaluation are gained by postgraduate students, so as to enable them to develop:

- An advanced knowledge and understanding of educational administration and educational evaluation.
- A set of skills for analysing educational administration and educational evaluation issues and practices.
- The ability to bring together theoretical perspectives on educational administration and evaluation and apply an informed critique of their inter-relationship.
- The ability to contribute to informed development of policy and practice in educational contexts.

## Structure of Master Degree

The Programme consists of 90 ECTS, which are distributed as follows:

### • Option A

4 compulsory courses x 12 ECTS (48 ECTS), 1 common core course (research) (12 ECTS), 1 elective course-specialisation (12 ECTS), 1 elective course- general content (12 ECTS) and 1 Seminar (6 ECTS) = Total 90 ECTS.

### • Option B

4 compulsory courses x 12 ECTS (48 ECTS), 1 common core course (research) (12 ECTS), 1 Seminar (6 ECTS) and Master Thesis I and II (24 ECTS) = Total 90 ECTS.

## OPTION A

	ECTS
<b>Specialization Courses</b>	<b>84</b>
<b>Compulsory Courses</b>	<b>48</b>
EDU 620 Introduction to Educational Administration*	12
EDU 623 Observation and Evaluation of Teaching and Personnel	12
EDU 631 School Effectiveness and School Improvement	12
EDU 645 Educational Policy	12
* <b>Note:</b> EDU 620 is prerequisite for all courses	
<b>Elective Courses-Specialisation</b>	<b>12</b>
One of the following:	
EDU 603 Comparative Education	12
EDU 617 Educational Government and the Management of Change	12
EDU 640 Principles and Processes of Curriculum Development and Evaluation	12
<b>Common Core Courses-General Content</b>	<b>12</b>
One of the following:	
EDU 533 Education for Life. Lifelong Education	12
EDU 550 Education and Social Exclusion	12
EDU 601 Philosophical Dimensions of Education	12
EDU 689 Independent Study	12
<b>Common Core Courses-Research</b>	<b>12</b>
One of the following:	
EDU 682 Qualitative Research in Education	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
<b>Seminar</b>	<b>6</b>
EDU 681 Seminar in Educational Administration and Evaluation	6
<b>TOTAL</b>	<b>90</b>

## OPTION B

5 Courses X 12 ECTS (60 ECTS), 1 Seminar X 6 ECTS and Master's Thesis (24 ECTS) = TOTAL 90 ECTS



### Notes:

- Postgraduate Students can register to Master Thesis and be exempted from two elective area courses. They can register in Master Thesis I and II and then continue with the registration in Master Thesis continuation (1 ECTS), until they complete their Thesis and support it to the Three Member Committee.
- Students can register to EDU 689 Independent Study Course, after consulting their Academic Advisor. The registration concerns only the substitution of Elective Area Course and can be supervised from one of the programme.

## Structure of the Doctoral Programme

### Programme's Purpose and Objectives

The Programme is designed to help develop researchers and scholars who can apply theoretical frameworks, methodological approaches, and analytical skills to improve quality and equity in education. More specifically, the Doctor of Philosophy (Ph.D.) in Educational Administration and Evaluation Programme prepares individuals to develop expertise in educational research methods in the areas of educational administration, teacher and school evaluation, educational effectiveness and school improvement. Graduates of the Programme are, therefore, prepared for academic positions in the field of educational administration and evaluation and as research methodologists; corporate positions in research, evaluation, and testing agencies, or government positions as researchers, evaluators and administrators of research programmes in education.

### Intended Learning Outcomes

By the end of the Programme, students will have demonstrated:

- Abilities in designing and conducting rigorous studies within the field of Educational Administration and Evaluation, which can contribute to the theoretical development of this field.
- Broad knowledge and systematic understanding of the research field of Educational Administration and Evaluation, as well as advanced and up-to-date specialized knowledge in a limited area of this field.
- Comprehensive understanding of research techniques, and a thorough knowledge of the literature applicable to their specific domain, within the field of Educational Administration and Evaluation.
- Originality in the application of knowledge, together with a practical understanding of how research and enquiry are used to create and interpret knowledge in the field of Educational Administration and Evaluation.
- Abilities in the critical evaluation of current research and research techniques and methodologies.
- Ability to present and discuss research findings within the academic community and society in general.
- Ability to make assessments of ethical aspects of their own research.

- Insight into the possibilities and limitations of their research, its role in society and the responsibility of the individual for its use.

The following are required for the completion of the Doctoral programme:

- Master degree in the same or similar subject.
- Success in courses totalling 60 ECTS.
- Success in a comprehensive examination 33 ECTS.
- Completion of a doctoral dissertation 180 ECTS.

In cases where the candidate holds a Master degree in a similar subject or a Master degree awarded by a recognised university, the Council of the Department can credit some or all the courses required for the Master's degree, following recommendation of the Academic Advisor responsible for the postgraduate studies of the programme.

## Requirements of Doctoral Programme

	ECTS
<b>3 Specialisation Courses (from the following)</b>	<b>36</b>
EDU 623 Observation and Evaluation of Teaching and Personnel	12
EDU 631 School Effectiveness and School Improvement <b>or</b>	
EDU 617 Educational Government and the Management of Change	12
EDU 645 Educational Policy <b>or</b>	
EDU 603 Comparative Education <b>or</b>	
EDU 640 Principles And Processes of Curriculum Development and Evaluation	12
<b>1 Academic Writing Course</b>	<b>12</b>
EDU 787 Academic Writing	12
<b>1 Common Core Course-Research</b>	<b>12</b>
EDU 788 Advanced Research Methods <b>or</b>	
EDU 780 Using Basic and Advanced Multilevel Modeling in Educational Research	12
Comprehensive Examination: EDU 820	33
Research Stage I (A and B): EDU 891A and EDU 891B	30
Research Stage II (A and B): EDU 892A and EDU 892B	30
Research Stage III (A and B): EDU 893A and EDU 893B	30
Research Stage IV (A and B): EDU 894A and EDU 894B	30
Dissertation I (A and B): EDU 895A and EDU 895B	30
Dissertation II (A and B): EDU 896A and EDU 896B	30
EDU 750 Submission of Research Proposal	0
<b>TOTAL</b>	<b>273</b>

**Note:** Ph.D. students may register to Elective Courses of Master degree programmes, relevant to their thesis proposal and after consultation with their Academic Advisor.

## Comprehensive Examination (CE)

The main goal of the CE is to evaluate the abilities of Doctoral candidates to work in a holistic way on the basis of a theoretical context, and offer solutions to real-world problems in Education. The CE consists of four distinct parts. In each part, we evaluate the ability of the candidate to synthesize knowledge in order to offer solutions. To be successful, the student must pass all four parts.

For more information on the CE, please refer to the *Admission and Attendance Regulations - Application Requirements* or consult the Graduate School (Tel.: 22894021/44) or the Department Secretariat.

## General Topics for the Examination

### (1) Organizational and Administrative Theory

- Organization and administration theories.
- Culture and climate in educational institutions.
- Leadership theories.
- Motivation theories.
- Job characteristics and job-redesign models.
- Group dynamics, group work and conflict in educational organizations.
- Individual decision-making models.
- Group decision-making models.
- Obstacles in decision-making.

### (2) Evaluation and Effectiveness in Education (Personnel, Programmes, Schools)

- Personnel evaluation in educational institutions.
- Personnel evaluation in educational institutions.
- Programme evaluation in educational and other organizations.
- Evaluation and school improvement.
- School effectiveness (theory practice).

### (3) Planning and the Management of Change in Organizations

- Strategic planning in educational institutions
- Management of change.

### (4) Economic Aspects of Education

- Basic principles of economics of education.
- Human capital theory.
- Budgets and budgeting.
- School choice.

### (5) Educational Policy

- Theoretical concepts and application.

## Contact Details

### PROGRAMME COORDINATORS

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## CURRICULUM, TEACHING AND COMPARATIVE EDUCATION

### Programme's Purpose and Objectives

The objectives of the postgraduate programme in Curriculum, Teaching and Comparative Education are the following:

1. Research on issues of curriculum design, development and evaluation, as well as of analysis and evaluation of teaching and of the professional development of educators as researchers of education, able to inquire scientifically and reflect upon matters of curriculum, teaching and comparative education in an increasingly globalized/internationalized world.
2. Promote curriculum and teaching theory, as well as the study of the philosophical, sociological, historical and comparative epistemological assumptions and principles, which support scholarly dialogue in curriculum studies and comparative education.
3. Promote and develop collaboration with universities and research centers in Europe and internationally on curriculum studies and comparative education.
4. Advance the study of and expertise on the areas of curriculum development and evaluation, teaching and teacher professional development as well as comparative education.
5. Prepare leaders and researchers, who will be internationally and locally renowned and who will understand the importance of the context within education, so that they can work creatively and efficiently in Cyprus, Europe and beyond.
6. Provide service to the academic community, the wider educational community and society.

In the context of these objectives, students will be given the freedom to develop their own programme of studies, tailored to their particular needs and interests.

### Intended Learning Outcomes

The Programme aims at the development of contemporary knowledge, methods and basic principles of inquiry in the field of Education in an effort for students to:

- Enrich their way of thinking and skills as educators and researchers, able to scientifically study, reflect upon and discuss issues of curriculum, teaching and comparative education.
- Become leading members and researchers who will be internationally and locally renowned and will be able to understand the importance of the context within education exists in its diverse forms, so that they can act creatively and efficiently in Cyprus, Europe and beyond.

### Structure of Master Programme

The Programme consists of 90 ECTS, which are distributed as follows:

#### Option A

3 Compulsory Courses X 12 ECTS (36 ECTS) + 1 Common Core Course X 12 ECTS (12 ECTS) + 3 Elective Courses X 12 ECTS (36 ECTS) + 1 Seminar X 6 ECTS = Total of 90 ECTS

#### Option B

3 Compulsory Courses X 12 ECTS (36 ECTS) + 1 Common Core Course X 12 ECTS (12 ECTS) + 1 Elective Course (12 ECTS) + Dissertation (24 ECTS) + 1 Seminar X 6 ECTS = Total of 90 ECTS

### OPTION A

#### Requirements of the Master Programme

	ECTS
<b>Compulsory Specialization Courses</b>	<b>36</b>
EDU 603 Comparative Education	12
EDU 640 Principles and Processes of Curriculum Development and Evaluation	12
EDU 693 Contemporary Trends in the Study of Teaching	12
<b>Educational Research Methodology</b>	<b>12</b>
<i>Choose one course:</i>	
EDU 520 Discourse Analysis	12
EDU 682 Qualitative Research in Education	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
<b>Seminar</b>	<b>6</b>
EDU 687 Seminar "Curriculum, Teaching and Comparative Education"	6
<b>Option A: Three Elective Courses</b>	<b>36</b>
<b>Elective Course-Specialization</b>	<b>12</b>
<i>Choose one course:</i>	
EDU 597 Educational Governance and Development	12
EDU 607 Sociology of Curriculum	12
EDU 654 History of Education	12
<b>Elective Courses-General Content</b>	<b>24</b>
<i>Choose two courses:</i>	
EDU 561 The Diverse Perspective of Play	12
EDU 583 Design and Development of Dynamic Educational Systems	12
EDU 598 Postcolonial Theory and the Curriculum	12
EDU 620 Introduction to Educational Administration	12
EDU 641 Gender and Education	12
EDU 646 Globalization, Cosmopolitanism and Education	12
EDU 689 Independent Study	12
<b>Option B: Master Thesis</b>	<b>24*</b>
EDU 798 Master Thesis I	12
EDU 799 Master Thesis II	12
<i>* Note: Exemption from two elective courses, one elective-specialization course and one elective-general content course.</i>	
<b>TOTAL</b>	<b>90</b>

## Structure of the Doctoral Programme

### Programme's Purpose and Objectives

The main purpose of the Doctoral programme in Curriculum, Teaching and Comparative Education is to create and enrich the education and research community on topics which fall within the fields of Curriculum and Teaching and Comparative Education, in order to contribute to attendant academic and educational discussions in Cyprus and beyond.

More particularly it aims at:

1. Cultivating research on issues of curriculum design, development and evaluation, as well as of analysis and evaluation of teaching and of the professional development of educators as researchers of education, able to inquire scientifically and reflect upon matters of curriculum, teaching and comparative education in an increasingly globalized and internationalized world.
2. Promoting curriculum and teaching theory, as well as the study of the philosophical, sociological, historical and comparative epistemological assumptions and principles, which support scholarly dialogue in curriculum studies and comparative education.
3. Promoting and developing collaboration with universities and research centers in Europe and internationally on curriculum studies and comparative education.
4. Advancing the study of and expertise on the areas of curriculum development and evaluation, teaching and teacher professional development, as well as comparative education.
5. Preparing leaders and researchers, who will be internationally and locally renowned and who will understand the importance of the context within education, so that they can work creatively and in a transformative manner in Cyprus, Europe and beyond.
6. Providing service to the academic community, the wider educational community and society.

### Intended Learning Outcomes

The Doctoral graduates are expected to:

- Become familiar with a wide range of epistemological and analytical tools which derive from "problematiques" of the fields of Curriculum and Teaching and Comparative Education, by drawing on relevant literature.
- Design appropriate methodology to inquire in a scientific/scholarly way, reflect upon and articulate/produce academic discourse around issues of curriculum, teaching and comparative education.
- Act constructively and in a transformational manner in academic and political matters of curriculum, teaching and comparative education in Cyprus, Europe and beyond.
- Discuss the historicity of contexts within which educational policy, curricula, schooling and diverse other educational environments, teacher professional identities, student/children/learner identities and those of other involved agents and agencies emerge and are constituted.

- Be able to locate schooling, policy and curricula within contexts that transcend the narrow boundaries of Cyprus.
- Enrich their way of thinking and skills as educators and researchers, able to scientifically study, reflect upon and discuss issues of curriculum, teaching and comparative education.

### Requirements of the Doctoral Programme

	ECTS
<b>4 Specialization Courses (from the following)</b>	<b>48</b>
EDU 597 Educational Governance and Development	12
EDU 603 Comparative Education	12
EDU 607 Sociology of Curriculum	12
EDU 640 Principles and Processes of Curriculum Development and Evaluation	12
EDU 654 History of Education	12
EDU 689 Independent Study	12
EDU 693 Contemporary Trends in the Study of Teaching	12
<b>1 Common Core Course-Research Course (from the following)</b>	<b>12</b>
EDU 520 Discourse Analysis	12
EDU 682 Qualitative Research in Education	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
EDU 780 Using Basic and Advanced Multilevel Modelling in Educational Research	12
EDU 788 Advanced Research Methods	12
<b>Comprehensive Examination</b>	<b>33</b>
<b>Research Stages</b>	<b>120</b>
Research Stages I (A and B)	30
Research Stages II (A and B)	30
Research Stages III (A and B)	30
Research Stages IV (A and B)	30
<b>Dissertation Stages</b>	<b>60</b>
Dissertation Stage I (A and B)	30
Dissertation Stage II (A and B)	30
EDU 750 Submission of Research Proposal	0
<b>TOTAL</b>	<b>273</b>
<b>Notes:</b>	
• From Dissertation III onwards receives 0 ECTS.	
• In cases where a candidate for the Ph.D. holds a Master's degree from any department of the University of Cyprus or any recognized university, he/she is required to complete 3-5 courses (36-60 ECTS), the selection of which is conducted following the recommendation of the student's Academic Advisor and the Programme's Coordinator. For the courses exempted (up to two courses), the student submits a request for credit transfer.	



## Comprehensive Examination (CE)

The CE evaluates the ability of candidates to synthesize theories and assumptions in a theoretical framework, which enables them to work on problem solving situations and reflect creatively on curriculum issues under consideration.

For more information on the CE, please refer to the *Admission and Attendance Regulations - Application Requirements* or consult the Graduate School or the Department Secretariat.

## General Topics for the Examination

### (1) Principles and Procedures of Curriculum Development: Course Design

- Models and paradigms of curriculum development.
- Curriculum development at the macro-level.
- Curriculum development at the micro-level.
- Structure and sequence of the curriculum.
- Hidden curriculum.

### (2) Curriculum Theory

- Critical discourse on curriculum aims and objectives, content, evaluation and assessment, methods of implementation, curricular material, teaching and learning.
- Functionalism.
- Foucaultian discourse.
- Critical pedagogy.
- Critical theories.
- Curriculum development in context.
- Social discourse and controlling curricular forms.
- Philosophical and psychological foundations of the curriculum.
- Postcolonial theory and the curriculum.
- Gender theories and curriculum studies.

### (3) Learning and Instruction: Curriculum as Praxis

- Constructivism, modern and postmodern.
- Teaching and learning as student and teacher conceptual change.
- Textbooks: writing and evaluation.
- Metacognitive development.
- Cooperative learning.
- Differentiation of teaching and learning in mixed ability classrooms.
- Teachers and students as biographies.
- Methods of teaching and learning in context
- Assessment and evaluation.
- Critical discourse on "effective teaching".

### (4) Teachers and Curriculum Studies

- Curriculum leadership.
- Teacher development in the context of critical pedagogy.

- Models and paradigms of teacher development: The instrumental-technical model vs. the critical - developmental paradigms.
- Teacher development in context.
- Action research and teacher development.
- Teacher development in the context of phenomenography, conceptual change, and postmodernity.
- Teachers' theories and beliefs.

### (5) Educational Policy and Curriculum Development

- Theories of educational change and consensus.
- Reforms in education.
- National standards and curriculum development.
- National and multicultural programmes and curricula.
- European educational policy.
- Accountability in education.

## Contact Details

### PROGRAMME COORDINATORS

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## MASTER DEGREE IN PEDAGOGICAL SCIENCES

### Aim

This Postgraduate Programme offers education specialists and professionals involved in education the opportunity to undertake specialized studies in the pedagogical sciences. Those, who complete the Programme to earn a Master degree, are well-placed in the field of Education to pursue a variety of careers; alternatively, they may continue their studies to a Doctoral degree level and pursue an academic or research-oriented career.

### Structure

Successful completion of 120 ECTS is required. More specifically, this entails 9 courses x 12 ECTS (108 ECTS) and 3 seminars x 4 ECTS. Students choose one of seven areas in which to concentrate and must take four courses in that area. The Programme structure is as follows:

- One course in Educational Research (12 ECTS).
- Three common core courses (36 ECTS).
- Four courses from one of the following areas: Religious Education; Sociology of Education; Preschool Education; Theory and Philosophy of Education; Physical Education; Cultural Dimensions of Education; Educational Technology (48 ECTS).
- One elective course from the Postgraduate Programme of the Department (12 ECTS).
- Three seminars (12 ECTS).

**Note:** Students who choose to write a Dissertation (24 ECTS) may be exempted from one core course and one elective course.

	ECTS
<b>Common Core Courses</b>	<b>36 or 31.5</b>
Students must complete three (3) courses (36 ECTS or 31.5 ECTS, in case where students choose the course PSY 610 or other course from the Department of Education) from the following:	
EDU 521 First Language Acquisition	12
EDU 522 Contemporary Approaches to Literacy Development	12
EDU 524 Text Linguistics-Multiliteracies	12
EDU 529 Monolingual, Bilingual, Multilingual Education: Attitudes, Trends and Perspectives	12
EDU 530 Theological Dimensions of Education	12
EDU 531 Religions in the Area of Globalisation	12
EDU 532 Issues of Ethics	12
EDU 533 Education for Life. Lifelong Education	12
EDU 534 Religious Education in School	12
EDU 535 Methodology of Religious Education in School	12
EDU 536 Religions and Gender	12
EDU 542 Special and Inclusive Education (EDU 542 is a prerequisite for EDU 639)	12
EDU 545 Disability in School and Society	12

EDU 548 Current Trends in Inclusive Education	12
EDU 549 Disability Studies in Education	12
EDU 550 Education and Social Exclusion	12
EDU 555 Postmodern Philosophers, Alterity and Education	12
EDU 556 Advanced Seminar in the Theory and Philosophy of Education	12
EDU 560 Contemporary Principles in Early Childhood Education	12
EDU 561 The Diverse Perspectives of Play	12
EDU 562 Mathematical Thinking in the Early Years: Theoretical and Empirical Approaches	12
EDU 563 Supporting Creativity in Early Childhood Education	12
EDU 564 Ways of Studying and Observing Young Children's Development and Learning	12
EDU 565 The Semiotic Approach to Learning and Teaching Mathematics in Early Childhood	12
EDU 570 Research and Theory of Sports Pedagogy	12
EDU 571 Instructional and Curriculum Models in Physical Education	12
EDU 572 Current Issues in Sports Pedagogy	12
EDU 573 Curriculum Development in Physical Education	12
EDU 574 Analysis of Teaching in Physical Education	12
EDU 580 Theoretical Foundations of Instructional Technology: Problems and Prospects	12
EDU 581 Research Methodology in Instructional Technology: Conclusions and Applications	12
EDU 582 Preparation of Research Proposals in Instructional Technology	12
EDU 583 Design and Development of Interactive Learning Environment	12
EDU 598 Postcolonial Theory and the Curriculum	12
EDU 601 Philosophical Dimensions of Education (S, I)	12
EDU 608 Critical Discourses on Teacher Development	12
EDU 611 Curriculum Theory	12
EDU 618 Sociological Aspects of Education	12
EDU 620 Introduction to Educational Administration	12
EDU 623 Observation and Evaluation of Teachers and Personnel	12
EDU 631 School Effectiveness and School Improvement	12
EDU 637 The Theory and Politics of Multicultural Education	12
EDU 639 Inclusive Education: The New Face of Special Education?	12
EDU 662 The Role of Information of Communication Technology in Promoting Learning in Natural	12
EDU 640 Basic Principles and Processes of Curriculum Development	12
EDU 641 Education and Gender	12
EDU 642 Fundamentals of Measurement and Assessment in Education	12
EDU 643 Application of new Technology in Curriculum Development	12
EDU 644 Development and Evaluation of Educational Texts and Materials	12

EDU 645	Educational Policy	12
EDU 646	Globalization, Cosmopolitanism and Education	12
EDU 651	The Development of Theories in Natural Sciences: The Natural Sciences	12
EDU 652	The Process of Inquiry in Natural Sciences	12
EDU 653	Cognitive Constraints in Learning Natural Sciences: Diagnosis and Teaching Interventions	12
EDU 660	Design, Development and Evaluation of Curricula	12
EDU 662	The Role of Information of Communication Technology in Promoting Learning in Natural Sciences	12
EDU 664	Integrated Curricula in Natural Sciences	12
EDU 673	Mathematics Curriculum: Development and Instruction	12
EDU 676	Contemporary Technology in Mathematics Teaching	12
EDU 677	Theories of Representation and Educational Teaching	12
EDU 678	Affects and Mathematics Learning	12
EDU 680	Theories of Mathematical Understanding	12
EDU 682	Qualitative Research in Education	12
EDU 683	Educational Statistics with Statistical Package Applications	12
EDU 684	Ethnographic Approaches in Educational Research	12
EDU 694	Seminar in Programme Evaluation	12
PSY 610	Psychological Aspects of Education Migration and Decolonial Education	7.5
Any other courses from the Postgraduate Programme of the Department of Education		
<b>Note:</b> Students who choose the course PSY 610 (7.5 ECTS) must complete the Seminar PSY 612 (4.5 ECTS), in order to fulfill the requisite number of credits for the degree.		
<b>Area Courses (4 courses X 12 ECTS)</b>		
Students must complete four courses from one of the following areas:		
<b>Preschool Education</b>		
EDU 560	Contemporary Principles in Early Childhood Education	12
EDU 561	The Diverse Perspectives of Play	12
EDU 562	Mathematical Thinking in the Early Years: Theoretical and Empirical Approaches	12
EDU 563	Supporting Creativity in Early Childhood Education	12
EDU 564	Ways of Studying and Observing Young Children's Development and Learning	12
EDU 565	The Semiotic Approach to Learning and Teaching Mathematics in Early Childhood	12
EDU 566	Social Dimensions of the Child's Development	12
EDU 567	Developing Research Proposals in the Field of Early Childhood Educator	12
<b>Sports Pedagogy</b>		
EDU 570	Research and Theory of Sports Pedagogy	12
EDU 571	Instructional and Curriculum Models in Physical Education	12

EDU 572	Current Issues in Sports Pedagogy	12	
EDU 573	Curriculum Development in Physical Education	12	
EDU 574	Analysis of Teaching in Physical Education	12	
EDU 623	Observation and Evaluation of Teachers and Personnel	12	
EDU 631	School Effectiveness and School Improvement	12	
FDU 695	Evaluation of Schools' Performance	12	
<b>Multiculturalism, Migration and Decolonial Education</b>			
EDU 556	Advanced Seminar in the Theory and Philosophy of Education	12	
EDU 598	Postcolonial Theory and the Curriculum	12	
EDU 599	Gender Theories and the Politics of the Curriculum	12	
EDU 637	The Theory and Politics of Multicultural Education	12	
EDU 646	Globalization, Cosmopolitanism and Education	12	
EDU 734	SE Seminar in Pedagogical Sciences I (Sociology of Education)	4	
EDU 734	PE Seminar in Pedagogical Sciences I (Preschool Education)	4	
EDU 734	TP Seminar in Pedagogical Sciences I (Theory and Philosophy of Education)	4	
EDU 734	SP Seminar in Pedagogical Sciences I (Sports Pedagogy)	4	
EDU 734	ET Seminar in Pedagogical Sciences I (Educational Technology)	4	
EDU 735	Seminar in Cultural Dimensions of Education I	4	
EDU 744	CE Seminar in Pedagogical Sciences II	4	
EDU 647	Christian Humanocentrism and the Contemporary World	12	
One course from the postgraduate programme Language Pedagogy (with the Programme Coordinator's approval)			12
<b>Educational Technology</b>			
EDU 580	Theoretical Foundations of Instructional Technology: Problems and Prospects	12	
EDU 581	Research Methodology in Instructional Technology: Conclusions and Applications	12	
EDU 582	Preparation of Research Proposals in Instructional Technology	12	
EDU 583	Design and Development of Interactive Learning Environments	12	
EDU 643	Application of New Technology in Curriculum Development	12	
<b>Educational Research (1 Course x 12 ECTS)</b>			12
Students must complete one of the following courses:			
EDU 682	Qualitative Research in Education	12	
EDU 683	Educational Statistics with Statistical Package Applications	12	
EDU 684	Ethnographic Approaches in Educational Research	12	
<b>Seminars (3 Seminars x 4 ECTS)</b>			12
EDU 734	CE Seminar in Pedagogical Sciences I (Christian Education)	4	
EDU 744	SE Seminar in Pedagogical Sciences II (Sociology of Education)	4	

EDU 744	PE Seminar in Pedagogical Sciences II (Preschool Education)	4
EDU 744	TP Seminar in Pedagogical Sciences II (Theory and Philosophy of Education)	4
EDU 744	SP Seminar in Pedagogical Sciences II (Sports Pedagogy)	4
EDU 744	ET Seminar in Pedagogical Sciences II (Educational Technology)	4
EDU 745	Seminar in Cultural Dimensions of Education II	4
EDU 764	CE Seminar in Pedagogical Sciences III (Christian Education)	4
EDU 764	SE Seminar in Pedagogical Sciences III (Sociology of Education)	4
EDU 764	SE Seminar in Pedagogical Sciences III (Preschool Education)	4
EDU 764	TP Seminar in Pedagogical Sciences III (Theory and Philosophy of Education)	4
EDU 764	SP Seminar in Pedagogical Sciences III (Sports Pedagogy)	4
EDU 764	ET Seminar in Pedagogical Sciences III (Educational Technology)	4
EDU 765	Seminar in Cultural Dimensions of Education III	4

## Ph.D. IN PEDAGOGICAL SCIENCES

### Structure

Successful completion of 273 ECTS is required. This includes the following courses:

	ECTS
<b>5 Courses x 12 ECTS</b>	<b>60</b>
- 3 Compulsory Courses	
- 1 Elective Course	
- 1 Research Course	
<b>Comprehensive Examination (examination in 5 courses)</b>	<b>33</b>
<b>Research Stage (8 courses x 15 ECTS)</b>	<b>120</b>
<b>Dissertation ta, b x 15 ECTS</b>	<b>30</b>
<b>Dissertation Ha, Mb x 15 ECTS</b>	<b>30</b>
<b>TOTAL</b>	<b>273</b>
<i>Note: All work beginning with Dissertation III and following receives 0 ECTS.</i>	

### Aim

This Postgraduate Programme offers education specialists and professionals involved in education, the opportunity to undertake specialized studies in the Pedagogical Sciences. Those, who successfully complete the programme, can pursue an academic career.

### Requirements

Applicants must hold a Master's degree in a similar/same area as the Ph.D. programme; a Master degree in Science Education is also acceptable. Successful applicants must subsequently receive the approval of their Postgraduate Advisor to be admitted to the specific programme selected.

## Structure

All courses selected for the Ph.D. programme must be approved by the student's Postgraduate Advisor.

	ECTS
<b>Christian Education Compulsory Courses</b>	<b>36</b>
EDU 530 Religious Aspects in Education	12
EDU 534 Religious Education in School	12
EDU 535 Methodology of Religious Education in School	12
<b>Sociology of Education Compulsory Courses</b>	<b>36</b>
EDU 550 Education and Social Exclusion	12
EDU 618 Sociological Aspects of Education	12
EDU 641 Education and Gender	12
<b>Preschool Education Compulsory Courses</b>	<b>36</b>
Three of the following:	
EDU 560 Contemporary Principles in Early Childhood Education	12
EDU 561 The Diverse Perspective of Play	12
EDU 562 Mathematical Thinking in the Early Years: Theoretical and Empirical Approaches	12
EDU 563 Supporting Creativity in Early Childhood Education	12
EDU 564 Ways of Studying and Observing Young Children's Development and Learning	12
EDU 565 The Semiotic Approach to Learning and Teaching Mathematics in Early Childhood	12
<b>Theory and Philosophy of Education Compulsory Courses</b>	<b>36</b>
Three of the following:	
EDU 555 Postmodern Philosophers, Alterity and Education	12
EDU 556 Advanced Seminar in the Theory and Philosophy of Education	12
EDU 598 Postcolonial Theory and the Curriculum	12
EDU 601 Philosophical Dimensions of Education	12
EDU 611 Curriculum Theory	12
EDU 646 Globalization, Cosmopolitanism and Education	12
<b>Sports Pedagogy Compulsory Courses</b>	<b>36</b>
Three of the following:	
EDU 570 Research and Theory of Sports Pedagogy	12
EDU 571 Instructional and Curriculum Models in Physical Education	12
EDU 572 Current Issues in Sports Pedagogy	12
EDU 573 Curriculum Development in Physical Education	12
EDU 574 Analysis of Teaching in Physical Education	12
EDU 623 Observation and Evaluation of Teaching and Personnel	12
EDU 631 School Effectiveness and School Improvement	12
EDU 682 Qualitative Research in Education	12
EDU 780 Using Basic and Advanced Multilevel Modeling in Educational Research	12
EDU 788 Advanced Research Methods	12



### **Multiculturalism, Migration and Decolonial Education**

EDU 555	Postmodern Philosophers, Alterity and Education	12
EDU 556	Advanced Seminar in the Theory and Philosophy of Education	12
EDU 598	Postcolonial Theory and the Curriculum	12
EDU 637	The Theory and Politics of Multicultural Education	12
EDU 646	Globalization, Cosmopolitanism and Education	12
	One course from the Ph.D. Programme Language and Education (with the Programme Coordinator's approval)	12

### **Educational Technology Compulsory Courses 36**

EDU 580	Theoretical Foundations of Instructional Technology: Problems and Prospects	12
EDU 581	Research Methodology in Instructional Technology: Conclusions and Applications	12
EDU 582	Preparation of Research Proposals in Instructional Technology	12
EDU 583	Design and Development of Interactive Learning Environments	12

### **Educational Research 12**

One of the following:

EDU 682	Qualitative Research in Education	12
EDU 683	Educational Statistics with Statistical Package Applications	12
EDU 780	Using Basic and Advanced Multilevel Modeling in Educational Research	12
EDU 788	Advanced Research Methods	12

### **Elective Courses 12**

One of the following:

EDU 524	Text Linguistics-Multiliteracies	12
EDU 529	Monolingual, Bilingual, Multilingual Education: Attitudes, Trends and Perspectives	12
EDU 531	Religions in the Era of Globalisation	12
EDU 532	Issues of Ethics	12
EDU 533	Education for Life. Lifelong Education	12
EDU 536	Religions and Gender	12
EDU 542	Special and Inclusive Education	12
EDU 548	Current Trends in Inclusive Education	12
EDU 550	Education and Social Exclusion	12
EDU 566	Social Dimensions of the Child's Development (humor, play, social agency, communities of practice, Barbie-TV)	12
EDU 567	Critical Reconceptualisations in Early Childhood Education	12
EDU 583	Design and Development of Interactive Learning Environments	12
EDU 598	Postcolonial Theory and the Curriculum	12
EDU 601	Philosophical Dimensions of Education (S, I)	12
EDU 611	Curriculum Theory	12
EDU 618	Sociological Aspects of Education	12
EDU 625	Applications of New Technology in Educational Administration	12

EDU 637	The Theory and Politics of Multicultural Education	12
EDU 641	Education and Gender	12
EDU 643	Application of New Technology in Curriculum Development	12
EDU 646	Globalization, Cosmopolitanism and Education	12
EDU 647	Christian Humanocentrism and the Contemporary World	12
EDU 662	The Role of Information and Communication Technology in Promoting Learning in Natural Sciences	12
EDU 676	Contemporary Technology in Mathematics Teaching	12
EDU 689	Independent Study (in every specialization)	12

## **Contact Details**

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## MATHEMATICS EDUCATION

### Programme's Purpose and Objectives

The Master degree Programme is designed for teachers of all levels who teach mathematics courses, or people who hold administrative or other positions and participate in decision-making about mathematics teaching and learning. The purpose of the Programme is to provide students with the opportunity to pursue specialized studies in Education and particularly in Mathematics Education. It is a flexible programme aiming at developing students' theoretical knowledge, understanding and professional specialization in mathematics education and developing their research skills in mathematics teaching and learning. Students will enrich their knowledge on key issues in mathematics education and discuss past practices, contemporary approaches, potential methodologies and policies that promote technology integration.

Through seminars, discussions, lectures and conference participations, students reflect on theoretical approaches and their implications for instruction. They also develop a critical understanding of the current state of mathematics education. Special attention is paid to analyzing current research and its implications for educational and curriculum programmes.

### Intended Learning Outcomes:

After successful completion of the Programme, it is expected that students will:

- Deepen their understanding of core mathematical concepts.
- Become acquainted with mathematics education literature and contemporary theories of Cognitive Development and Implementation of Educational Projects in Mathematics.
- Familiarize themselves with a range of qualitative or/and quantitative research methods in mathematics education.
- Enhance their ability to design and analyze research activities.
- Be able to implement research findings into teaching practice.
- Critically analyze mathematics education policies as well as practices being applied to school practice.
- Acquire skills of designing learning experiences.
- Be able to use technology to reinforce students' understanding of mathematical concepts.
- Possess skills for establishing appropriate learning conditions that stimulate students' interest and motivation for learning mathematics

### Structure of Master Degree

Students must complete courses totalling 90 ECTS, as shown in options A and B. The courses of the Programme are divided in three categories: a) Specialization Courses, b) Educational Research Courses and c) Seminars. Students may complete one of the following options:

#### • Option A (completion of 7 courses and 1 seminar)

The student selects five courses from the Specialization Courses (60 ECTS), two courses from the Educational Research Courses (24 ECTS) and 1 Seminar (6 ECTS)= 90 ECTS.

#### • Option B (completion of 5 courses, 1 seminar and dissertation)

The student selects four courses from the Specialization Courses (48 ECTS), one course from the Educational Research Courses (12 ECTS), one Seminar (6 ECTS) and completes a Dissertation (24 ECTS)=90 ECTS.

### OPTION A

	ECTS
<b>Specialization Courses</b>	<b>60</b>
<b>Compulsory Courses</b>	<b>48</b>
EDU 673 Curriculum Development for Mathematics and Educational Evaluation	12
EDU 674 Mathematical Problem Solving	12
EDU 676 Contemporary Technology in Mathematics Teaching	12
EDU 680 Theories of Mathematical Understanding	12
<b>Elective Courses</b>	<b>12</b>
One of the following:	
EDU 562 Mathematical Thinking in the Early Years: Theoretical and Empirical Approaches	12
EDU 583 Design and Development of Dynamic Educational Systems	12
EDU 662 New Technologies and Learning in the Natural Sciences	12
EDU 667 Theory and Research in Geometry Learning and Teaching	12
EDU 670 Theory and Research in Algebra and Calculus Learning and Teaching	12
<b>Educational Research Courses</b>	<b>24</b>
Two of the following: (EDU 675 is compulsory)	
EDU 675 Recent Trends in Mathematics Education	12
EDU 682 Qualitative Research in Education or	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
<b>Dissertation</b>	<b>24</b>
EDU 798M Dissertation I	12
EDU 799M Dissertation II	12
<b>Seminar</b>	<b>6</b>
EDU 685 Seminar in Mathematics Education	6
<b>Total</b>	<b>90</b>

*Postgraduate Students who register to Master Thesis are exempted from 1 Elective Area Courses and 1 Research Course (EDU 682 or EDU 683).*

## Structure of Doctoral Programme

### Programme's Purpose and Objectives

The Ph.D Programme affords significant opportunities to pursue specialized studies in Mathematics Education and engage in research on relevant issues. The Programme is devoted to fostering students' theoretical knowledge, understanding and professional specialisation in mathematics education and places particular emphasis on improving their ability to conduct advanced research. In particular, students will gain deeper insights into core theoretical and methodological issues in mathematics education. They will acquire essential skills and knowledge for undertaking original and important research. The Programme covers a broad spectrum of research methods, which are necessary for critically engaging with literature on specialized themes of mathematics education. These research methods allow students to expand their skills in designing and conducting research, analyzing and interpreting their findings and writing original research. Students will interact with the professors of our Department and professors of international prestige who are invited to participate in seminar courses. This interaction prepares them for their future careers as researchers and academics.

Through seminars, discussions, lectures and conference participations, students reflect on theoretical approaches and their implications for instruction. They also develop a critical understanding of the current state of mathematics education. Special attention is paid to analyzing current research and its implications for educational and curriculum programs. In addition, students can take part in externally funded research projects.

### Intended Learning Outcomes

After successful completion of the Programme, it is expected that students will:

- Enhance their ability to design, interpret and analyze research activities.
- Be able to implement research findings in the area of mathematics education into educational policy issues.
- Critically analyze mathematics education policies as well as practices being applied to the educational system.
- Critically review and understand existing literature about the contemporary theories of Cognitive Development and Implementation of Educational Projects in Mathematics.
- Acquire skills for designing and carrying out original research (quantitative and/or qualitative).
- Will be able to design, write and present research articles in conferences.
- Develop research and theoretical cooperation with researchers and academics of different fields of specialisation.

## Requirements of Ph.D. Programme

	ECTS
<b>5 Compulsory Courses</b>	<b>60</b>
Comprehensive Examination	33
Research Stage I	30
Research Stage II	30
Research Stage III	30
Research Stage IV	30
Dissertation Stage I	30
Dissertation Stage II	30
EDU 750 Submission of Research Proposal	0
<b>A total of 273 ECTS is required for its successful completion</b>	

	ECTS
<b>Specialization Courses (choose three courses)</b>	<b>36</b>
EDU 673 Curriculum Development for Mathematics and Educational Evaluation	12
EDU 674 Mathematical Problem Solving	12
EDU 675 Recent Trends in Mathematics Education	12
EDU 676 Contemporary Technology in Mathematics Teaching	12
EDU 680 Theories of Mathematical Understanding	12
<b>Research Courses (choose one course)</b>	<b>12</b>
EDU 683 Educational Statistics with Statistical Package Applications	12
EDU 682 Qualitative Research in Education	12
EDU 780 Using Basic and Advanced Multilevel Modelling in Educational Research	12
EDU 788 Advanced Research Methods	12
<b>Courses of Writing Research Papers</b>	<b>12</b>
EDU 787 Academic Writing	12
Comprehensive Examination	33
Research Stage I	30
Research Stage II	30
Research Stage III	30
Research Stage IV	30
Dissertation Stage I	30
Dissertation Stage II	30
EDU 750 Submission of Research Proposal	0
<b>TOTAL</b>	<b>273</b>

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## LEARNING IN NATURAL SCIENCES AND ENVIRONMENT

### Programme's Purpose and Objectives

#### A) Specialization "Learning in Natural Sciences"

The development of Science Education as an autonomous scientific area, has led to expectations for teaching improvement at all levels of education. These expectations have not been satisfactorily achieved yet. A key factor influencing the accomplishment of these expectations is the provision of appropriate education and teacher training programmes.

There is a need for teachers in primary and secondary education to acquire up-to-date knowledge concerning the modern trends of the science education domain and to acquire research skills. The programme aspires to foster the development of teachers-researchers specialized in science learning, who will be well equipped in terms of knowledge from Natural Sciences, Cognitive Psychology, and Research Methodology and, thus, be in a position to provide the evidence that will support a continuous qualitative upgrading of school science education.

The general aim of the programme is to offer comprehensive education for teachers-researchers concerning cognitive development, epistemology and learning in science education. Programme participants will acquire skills in basic and applied research, designing and developing science curricula, evaluating and reforming educational policy, and acquiring skills for critically analyzing recent trends and findings related to Science Education.

#### B) Specialization "Environmental and Sustainability Education"

The Programme aims to give the students the opportunity to develop knowledge and skills to systematically study Environmental and Sustainability Education (ESE) on a scientific basis. Furthermore, the programme aims to develop the students' ability to critically reflect upon sustainable development in an educational context and to strengthen their abilities to develop, design and evaluate educational initiatives that can contribute to sustainable development. Questions from various disciplinary and interdisciplinary starting points, in relation to both formal and informal educational contexts, are explored, and possibilities and challenges for the educational practice are discussed and problematized.

Beginning and experienced environmental educators, including teachers, non-formal educators, environmental or park managers, zoo or botanic garden educators will acquire skills in basic and applied research, designing and developing curricula, evaluating and reforming educational policy, and acquiring skills for critically analysing recent trends and findings related to environmental and sustainability education. The programme also supports ongoing professional development of in-service teachers.

### Intended Learning Outcome:

#### A) Specialization "Learning in Natural Sciences"

After successful completion of the Programme, it is expected that students:

- Will be acquainted with the basic literature on science learning, the current theories of cognitive development, and approaches to the design, development, and implementation of science education curricula.
- Will acquire knowledge on how science knowledge is constructed in relation with science related skills, scientific practices and the affective domain.
- Will develop an understanding of the importance of teaching science for preparing the future citizens (Scientific literacy – Science for all).
- Will acquire knowledge on utilizing technological tools for scaffolding science teaching and learning.
- Will develop skills for designing and running research in the science education domain.
- Will formulate research questions and choose the appropriate methodology for their study.
- Will be acquainted with a range of quantitative and qualitative research methods, and will acquire experience in applying these methods to the collection and analysis of data and in promoting the study of basic and applied questions in science learning.
- Will be able to utilise available research evidence and develop detailed suggestions for educational policy changes, taking into consideration existing needs and constraints of the educational system, in an attempt to continuously optimise the effectiveness of the teaching-learning process in the natural sciences.

#### B) Specialization "Environmental and Sustainability Education"

After successful completion of the Programme, it is expected that students:

- Will learn about environmental and sustainability education foundations and approaches, and environmental action in schools and non-formal settings.
- Will be able to critically review and analyse perspectives in Educational Science on complex phenomena and processes of change within sustainable development.
- Will be able to apply a scientific approach in relation to theoretical, practical and policy-related aspects of Environmental and Sustainability Education.
- Will be able to apply research-based knowledge to start new or enhance existing environmental education programmes.
- Will develop skills for designing and running research in ESE.
- Will be acquainted with a range of quantitative and/or qualitative research methods, and will acquire experience



in applying these methods to the collection and analysis of data and in promoting the study of basic and applied questions in ESE.

- Will be able to utilise available research evidence and develop detailed suggestions for educational policy changes, taking into consideration existing needs and constraints of the educational system, in an attempt to continuously optimise the effectiveness of the teaching-learning process.

## Structure of Master Programme

For the completion of the Programme, each graduate student must successfully complete courses corresponding to 90 ECTS, which are distributed as follows:

### OPTION A

2 Core Courses (24 ECTS) + 1 Research Course (12 ECTS) + 4 Elective Specialization Courses (48 ECTS) + 1 Seminar (6 ECTS) = TOTAL 90 ECTS.

### OPTION B

2 Core Courses (24 ECTS), 1 Research Course (12 ECTS), 2 Elective Specialisation Courses (24 ECTS), 1 Seminar (6 ECTS), Master Thesis (24 ECTS) = Total 90 ECTS.

	ECTS
<b>Programme Requirements</b>	
<b>2 Core Courses</b>	<b>24</b>
EDU 652 Constructivism and Inquiry Learning	12
EDU 660 Design, Development and Evaluation of Curricula in Science Education <b>or</b>	
EDU 640 Principles and Processes of Curriculum Development and Evaluation	12
<b>1 Course Methodology of Educational Research</b>	<b>12</b>
EDU 682 Qualitative Research Education <b>or</b>	
EDU 683 Educational Statistics with Statistical Packages Applications	12
<b>Elective Specialization Courses</b>	<b>48 or 24*</b>
<i>Choose one area:</i>	
<b>Learning in Natural Sciences (4 courses of the following)</b>	
EDU 651 Nature of Science and Science Teaching	12
EDU 653 Cognitive Constraints in Learning Natural Sciences	12
EDU 662 New Technologies and Learning in the Natural Sciences <b>or</b>	
EDU 580 Theoretical Foundations of Instructional Technology: Problems and Prospects <b>or</b>	
EDU 583 Design and Development of Dynamic Educational Systems	12
EDU 663 Modern Trends in Teaching Natural Sciences	12
EDU 664 Integrated Curricula in Natural Sciences	12

### Environmental and Sustainability Education (4 courses of the following)

EDU 655 Fundamentals of Environmental and Sustainability Education	12
EDU 656 Teaching and Learning in Environmental and Sustainability Education	12
EDU 657 Design and Implementation of Environmental and Sustainability Education Curricula and Project	12
EDU 658 Formal and Non-formal Learning Environments	12
EDU 659 Research in Environmental and Sustainability Education	12
EDU 668 Critical Environmental Literacy: Identities, Places and Frames in Environmental and Sustainability Education	12

### Master Thesis I (EDU 800) and Master Thesis II (EDU 801)

EDU 800 Master's Thesis I*	12
EDU 801 Master's Thesis II*	12

\* **Note:** For the completion of Master Thesis, students can be exempted from two elective specialization courses

Master Thesis contribution, EDU 600 (1 ECTS). Postgraduate Students register in Master Thesis continuation, until they complete their Thesis and support it before the Three Member Committee.

### Seminar 6

EDU 684 Seminar: Learning in Natural Sciences and Environment	6
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### TOTAL 90

**Note:** Students can register to EDU 689 Independent Study course after consulting their Academic Advisor. The registration concerns only the substitution of an Elective Area Course and can be supervised from one of the programme coordinators.

## Structure of the Doctoral Programme

### Programme's Purpose and Objectives

- There is a need for teachers in primary and secondary education to acquire research skills. The Ph.D. programme aspires to foster the development of researchers specialized in science learning, who will be well equipped in terms of knowledge from natural sciences, cognitive psychology, and research methodology and, thus, be in a position to provide the evidence that will support a continuous qualitative upgrading of educational policy in science.
- The general aim of the programme is to offer comprehensive education for researchers in Science Education. Programme participants will acquire skills in basic and applied research; they will develop strategies for evaluating and reforming educational policy; and they will acquire skills for critically analysing recent trends and findings related to Science Education.

## Intended Learning Outcomes

After successful completion of the Programme, it is expected that students:

- Will be acquainted with the basic literature on science learning, the current theories of cognitive development, and approaches to the design, development, and implementation of educational programmes in natural sciences.
- Will develop skills for reviewing and critically analysing the literature related to specific research questions.
- Will be acquainted with a range of qualitative and quantitative research methods, and will acquire experience in applying these methods to the collection and analysis of data and in promoting the study of basic and applied questions in science learning.
- Will be able to formulate questions that could be investigated, specify the degree of constraint of these questions, and select an appropriate methodology for providing answers.
- Will be able to utilise available research evidence and develop detailed suggestions for educational policy changes, taking into consideration existing needs and constraints of the educational system, in an attempt to continuously optimise the effectiveness of the teaching-learning process in the natural sciences.

## Completion of the Programme

	ECTS
<b>Compulsory Courses</b>	<b>60</b>
EDU 751 Design of Research Proposals	12
EDU 752 Analysis and Implementation of Research Evidence	12
EDU 753 Models of Teaching and Didactical Recontextualization of the Content of Natural Sciences	12
<b>Two Courses from:</b>	<b>24</b>
EDU 660 Design, Development and Evaluation of Curricula in Science Education	12
EDU 662 New Technologies and Learning in the Natural Sciences	12
EDU 663 Modern Trends in Teaching Natural Sciences	12
EDU 664 Integrated Curricula in Natural Sciences	12
EDU 689 Independent Study	12
EDU 780 Using Basic and Advanced Multilevel Modeling in Educational Research	12
EDU 788 Advanced Research Methods	12
<b>Comprehensive Examination</b>	<b>33</b>
<b>Four Research Stages</b>	<b>120</b>
Research Stage I (A and B)	30
Research Stage II (A and B)	30
Research Stage III (A and B)	30
Research Stage IV (A and B)	30

<b>Two Dissertation Stages</b>	<b>60</b>
Dissertation Stage I (A and B)	30
Dissertation Stage II (A and B)	30
<i>All work beginning with Dissertation Stage III and following, receives 0 ECTS</i>	
<b>TOTAL</b>	<b>273</b>

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## SPECIAL AND INCLUSIVE EDUCATION

### Programme's Purpose and Objectives

Theory and research in Special and Inclusive Education is increasingly enriched to inform teachers at all levels of education (pre-primary, primary, secondary, and higher education). The Programme is shaped around a range of theorists' and researchers' work and seeks to develop teachers who own the knowledge, attitudes and skills to conduct further research in the area and develop inclusive education further.

The general aim of the Programme is to offer comprehensive education concerning the development of Special and Inclusive Education ideologies and systems at international and local level, the underpinnings of different theoretical and research approaches exploring different aspects of the topic, and the promotion of research of all kinds aiming to understand how teaching, curricula, language, history, family, society and culture shape special and inclusive education policy and practice.

### Intended Learning Outcomes

After successful completion of the Programme, it is expected that students:

- Will be acquainted with the basic literature on special and inclusive education.
- Will be familiar with the approaches to the design, development, and implementation of special and inclusive education research.
- Will develop skills for designing and running research in special and inclusive education.
- Will be acquainted with a range of research methods, and will acquire experience in applying these methods to the collection and analysis of data and in promoting

the study of basic and applied questions in Special and Inclusive Education.

- Will be able to employ theory and research in the development of policy and curricula.

## Structure of the Master's Programme (90 ECTS)

### OPTION A

7 Courses x 12 ECTS (84 ECTS) + 1 Seminar x 6 ECTS = 90 ECTS in total.

### OPTION B

5 Courses x 12 ECTS (60 ECTS) + 1 Seminars x 6 ECTS + Master's Thesis (24 ECTS) = 90 ECTS in total.

	ECTS
<b>Compulsory Courses</b>	<b>60</b>
EDU 542 Special and Inclusive Education in Cyprus	12
EDU 545 Disability in the Society and at School	12
EDU 546 Differentiated Instruction in the Inclusive Classroom	12
EDU 639 Inclusive Education: the New Face of Special Education?	12
<b>One of the following:</b>	
EDU 682 Qualitative Research in Education	12
EDU 683 Educational Statistics with Statistical Package Applications	12
<b>Elective Core Courses</b>	<b>24</b>
<b>Two of the following:</b>	
EDU 529 Monolingual, Bilingual, Multi-lingual Education: Attitudes, Trends and Perspectives	12
EDU 550 Education and Social Exclusion	12
EDU 563 Supporting Creativity in Early Childhood Education	12
EDU 603 Comparative Education	12
EDU 637 The Theory and Politics of Multicultural Education	12
EDU 689 Independent Study	12
<b>or</b>	
<b>Master Thesis I and II</b>	
EDU 798 Master Thesis I	12
EDU 799 Master Thesis II	12
<i>(Students can register to Master Thesis and be exempted from two elective area courses)</i>	
<b>Seminar</b>	<b>6</b>
EDU 688 Seminar: Current Trends in Special and Inclusive Education	6
<b>TOTAL</b>	<b>90</b>

### Note:

- Postgraduate Students can register to Master Thesis and be exempted from two elective area courses. The registration can be in Master Thesis I and II and then continue with the registration in Master Thesis continuation (1 ECTS) until

they complete their Thesis and support it to the Third member Committee.

- Students can register to Independent Study course after consulting their Academic Advisor. The registration concerns only the substitution of Elective Area Course and can be supervised from one of the program coordinators.

## Structure of the Ph.D. Programme Programme's Purpose and Objectives

The Programme is designed to help develop researchers and scholars who can apply theoretical frameworks, methodological approaches, and analytical skills to improve quality and equity in education. More specifically, the Doctor of Philosophy (Ph.D.) in Educational Administration and Evaluation Programme prepares individuals to develop expertise in educational research methods in the areas of educational administration, teacher and school evaluation, educational effectiveness and school improvement. Graduates of the Programme are, therefore, prepared for academic positions in the field of educational administration and evaluation and as research methodologists; corporate positions in research, evaluation, and testing agencies; or government positions as researchers, evaluators, or administrators of research programmes in education.

### Intended Learning Outcomes

By the end of the Programme, students will have demonstrated:

- Abilities in designing and conducting rigorous studies within the field of educational administration and evaluation, which can contribute to the theoretical development of this field.
- Broad knowledge and systematic understanding of the research field of educational administration and evaluation, as well as advanced and up-to-date specialized knowledge in a limited area of this field.
- Comprehensive understanding of research techniques, and a thorough knowledge of the literature applicable to their specific domain within the field of educational administration and evaluation.
- Originality in the application of knowledge, together with a practical understanding of how research and enquiry are used to create and interpret knowledge in the field of educational administration and evaluation.
- Abilities in the critical evaluation of current research and research techniques and methodologies.
- The ability, in both national and international contexts, to present and discuss research findings in speech and writing and in dialogue with the academic community and society in general.
- The ability to make assessments of ethical aspects of their own research.
- Insight into the possibilities and limitations of their research, its role in society and the responsibility of the individual for its use.

To be awarded a Ph.D. in Special and Inclusive Education, students must have completed the following requirements:

	ECTS
<b>Compulsory Courses</b>	<b>48</b>
EDU 542 Special and Inclusive Education in Cyprus	12
EDU 545 Disability in the Society and at School	12
EDU 546 Differentiated Instructions in the Inclusive Classroom	12
EDU 639 Inclusive Education: The New Face of Special Education	12
<b>Research Courses</b>	<b>12</b>
One of the following:	
EDU 520 Discourse Analysis	12
EDU 682 Qualitative Research in Education	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
EDU 788 Advanced Research Methods	12
<b>Comprehensive Examination</b>	<b>33</b>
<b>Four Research Stages</b>	<b>120</b>
Research Stage I (A and B)	30
Research Stage II (A and B)	30
Research Stage III (A and B)	30
Research State IV (A and B)	30
<b>Two Dissertation Stages</b>	<b>60</b>
Dissertation Stage I (A and B)	30
Dissertation Stage II (A and B)	30
<b>Total</b>	<b>273</b>

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## LANGUAGE, LITERACY AND EDUCATION

### Purpose and Objectives

The program's main objective is the in-depth study of language and language arts education, based on theoretical knowledge from the fields of Literacy Studies and Linguistics. The various sociological-anthropological, linguistic and philosophical trends that have contributed to the formation of different approaches in the study of language, literacy and language arts are examined. The Programme is especially designed for teachers and other professionals who are interested in language, discourse and texts in various epistemological fields, offering theoretical and research foundations on issues relating to language, literacy and education. Special emphasis is placed on the synchronic and diachronic influence of the sociocultural context on the formation of language policies, language values, language use and different types of literacies and on the way all these interact with language arts and language education in and out of school. Finally, the Programme focuses on various research approaches employed for the study of language and literacy in an out of school such as critical discourse analysis, linguistic ethnography, multimodal interaction analysis and cyber-ethnography.

### Intended Learning Outcomes

Upon the completion of the Programme, the students are expected to:

- Critically analyze the concepts of language, text, discourse and communication and the various aspects of literacy in relation to contemporary sociocultural, sociolinguistic and socio-anthropological theories.
- Recognize those theoretical premises that are necessary for bridging the gap between a narrow understanding of literacy as a reading and writing skill, and a broader social understanding of literacy in society.
- Acquire theoretical expertise on various aspects of language arts, such as grammar teaching, reading and writing, communicating in different modes, digital literacy and bilingual/multilingual education.
- Be able to respond to the different challenges for language and literacy education in the contemporary era.
- Contribute to research in the domains of language, literacy and education.

### Structure of the Master Degree

Completion of the Programme requires 90 ECTS. Students may take one of the following options:

#### OPTION A

7 Courses X 12 ECTS (84 ECTS) and 1 Seminar (6 ECTS) = 90 ECTS.

#### OPTION B

5 Courses X 12 ECTS (60 ECTS), 1 Seminar (6 ECTS) and Master Thesis\* (24 ECTS) = 90 ECTS.



\* In the case the students take the option of a Master Thesis, they are exempted from the two elective courses

## PROGRAMME REQUIREMENTS

	ECTS
<b>Compulsory Core Courses</b>	
EDU 521 Language, Discourse and Communication	12
EDU 522 Contemporary Approaches to Language Arts and Literacy Education	12
<b>Compulsory Methodology of Educational Research</b>	
<i>(choose one course)</i>	
EDU 682 Qualitative Research in Education or	12
EDU 683 Educational Statistics with Statistical Packages Applications	12
<b>Elective Specialization Courses</b>	
<b>2 Core/Content Courses</b>	
EDU 524 Multiliteracies and Literacies in the Digital Age	12
EDU 527 Capitalizing on Language Variation in Education	12
EDU 529 Monolingual, Bilingual and Multilingual Education: Attitudes, Trends and Perspectives	12
<b>2 Elective Courses of the Master's Programme</b>	
EDU 563 Supporting Creativity in Early Childhood Education	12
EDU 583 Supporting Creativity in Early Childhood Education	12
EDU 607 Sociology of Curriculum	12
EDU 637 Theory and Politics of Multicultural Education	12
EDU 689 Independent Study	12
<b>or</b>	
Master Thesis I	12
Master Thesis II	12
<i>(In the case the students take the option of a Master Thesis, they are exempted from the two elective courses).</i>	
<b>Seminar</b>	
EDU 686 Seminar in Language, Literacy and Education	6
<b>TOTAL</b>	<b>90</b>

### Notes:

- Postgraduate Students can register to Master Thesis and be exempted from two Elective Area Courses. The registration can be in Master Thesis I and II and then continue with the registration in Master Thesis continuation (1 ECTS), until they complete their Thesis and support it to the Third member Committee.
- Students can register to EDU 689 Independent Study course, after consulting their Academic Advisor. The registration concerns only the substitution of Elective Area Course and can be supervised from one of the Programme's Coordinators.

## Structure of the Doctoral Programme

### Programme's Purpose and Objectives:

The PhD programme aims to provide the basis for the in-depth theoretical and empirical study of language, literacy and education in and out of school, with special emphasis placed on language arts, literacy theory and pedagogy, and applied and social linguistics. It thus targets teachers and other professionals and sets as its main purpose to enhance their research development in language, literacy and education, and offer strong theoretical grounding in sociocultural approaches to literacy, multimodality, critical discourse studies, applied linguistics, and sociolinguistics. Special emphasis is placed on the synchronic and diachronic influence of various theoretical traditions that formed and influenced the study of language and literacy as objects of research and instruction across different, localized and historicized contexts. The Programme further aims to deepen students' knowledge and expertise in research approaches employed for the study of language and literacy such as critical discourse analysis, policy analysis, linguistic ethnography, multimodal interaction analysis and cyber-ethnography, with the ultimate goal of producing knowledge in relevant fields of study.

### Intended Learning Outcomes

Upon the completion of the programme, the students are expected to:

- Familiarize themselves with theoretical tenets and traditions for the study of language, literacy and education, including current sociocultural-anthropological approaches to literacy and literacy education, multimodal theories, and sociolinguistic theories on language, discourse and communication.
- Develop skills for reviewing and critically analysing the literature related to specific research questions.
- Formulate research questions and select the appropriate methodology for providing answers to these questions.
- Familiarize themselves with a broad range of educational research methods and methods in language and literacy research, and accumulate experience in implementing these methods for the collection and analysis of data.
- Interpret research findings and consider the implications of their research so as to provide specific suggestions for the development of language policies and for the design (at the levels of curriculum design, development of instructional materials, and identification of practices for the enactment in real classrooms) of literacy education, multilingual education, pedagogies of multiliteracies and multiple literacies in diverse educational settings.
- Participate in different academic activities and fora, at the local and international level, in order to promote theoretical and pedagogical knowledge for the study of key issues in language, literacy and education approaching those both as phenomena and domains of study.

## Structure

The following are required for the completion of the Doctoral programme:

- 1) A Master Degree in Language Pedagogy/Language Arts Education or in Applied Linguistics/Linguistics or in Educational Studies or in international M.A. programmes relevant to the aims and context of the proposed Ph.D. programme.
- 2) Successful completion of the following:

	ECTS
<b>5 Courses X 12 ECTS</b>	<b>60</b>
- 1 Course in Educational Research	
- 3 Content Areas/Specialization Courses	
- 1 Limited-Choice Course	
<b>Research (8 stages X 15 ECTS)</b>	<b>120</b>
<b>Comprehensive Examinations (exam in 5 courses)</b>	<b>33</b>
<b>Dissertation Stage Ia, Ib 1 X 15 ECTS</b>	<b>30</b>
<b>Dissertation Stage IIa, IIb 15 ECTS</b>	<b>30</b>
<b>Total</b>	<b>273</b>

- 3) Success in a comprehensive examination.
- 4) Completion of a doctoral dissertation.

## PROGRAMME REQUIREMENTS

	ECTS
<b>Compulsory Core Courses</b>	
EDU 521 Language, Discourse and Communication	12
EDU 522 Contemporary Approaches to Language Arts and Literacy Education	12
<b>Educational Research</b>	
<i>(choose one course)</i>	
EDU 520 Discourse Analysis or	12
EDU 788 Advanced Research Methods	12
<b>Elective Specialization Courses</b>	
<b>2 core/content courses</b>	
EDU 524 Multiliteracies and Literacies in the Digital Age	12
EDU 527 Capitalizing on Language Variation in Education	12
EDU 529 Monolingual, Bilingual and Multilingual Education: Attitudes, Trends and Perspectives	
<b>Comprehensive Examination</b>	<b>33</b>
<b>Four Research Stages</b>	
Research Stage I (A and B)	30
Research Stage II (A and B)	30
Research Stage III (A and B)	30
Research Stage IV (A and B)	30
<b>Two Dissertation Stages</b>	
Dissertation Stage I (A and B)	30
Dissertation Stage II (A and B)	30
<i>All Work beginning with Dissertation Stage III and following, receives 0 ECTS</i>	
<b>TOTAL</b>	<b>273</b>

**Note:** In cases where a candidate for the Ph.D. holds a Master degree from any Department of the University of Cyprus or any recognized university, he/she is required to complete 3-5 courses (36-60 ECTS), following recommendation of the Academic Advisor responsible for the postgraduate studies of the Programme. It is the student's responsibility to request credit transfer

## Comprehensive Examination (CE)

The main goal of the CE is to evaluate the abilities of doctoral candidates to work in a holistic way, on the basis of a theoretical context of Language and Literacy. The CE consists of three distinct parts: A theoretical account of different approaches in Literacy, a research-based perspective on issues concerning language and literacy and, finally, an applied section in which the students will need to synthesize and apply knowledge in pedagogical contexts. To be successful, the student must pass all three parts.

## Tentative Topics for the Examination

### 1) Theoretical Framework on Literacy and Language Arts

- Language and literacy theories.
- Sociocultural perspectives on literacy and literacy development (orality and literacy, literacy as a situated social practice, etc.).
- Theoretical foundation of literacy and language arts education (e.g., sociocognitive approaches, functional perspectives, genre theory, critical literacy, etc.).
- Multimodality and multiliteracies.
- Sociolinguistics and literacy.

### 2) Research in Literacy and Language

- Ethnographic approaches in language and literacy research.
- Discourse and critical discourse analysis.
- Textual analysis.

### 3) Applied Aspects of Literacy and Language

- Language policy and language planning.
- Multilingual/bilingual and bidialectal education.
- Textbooks and curricula in literacy and language teaching.

## Course Descriptions for Cycle B (Compulsory and Elective Courses)

The courses in this cycle aim to:

- a. Offer the necessary linguistic training that will enable educators to comprehend the processes of children's language development. Although in recent decades, research in language acquisition has been developing rapidly, the study of the structural features of the language of Greek-speaking children is still in its initial stages. The relevant courses offer a sound theoretical understanding, that will lead to further research and

production of scientific knowledge in this area.

- b. Examine the notions of communicative competence and the various aspects of Literacy, in relation to contemporary sociolinguistic and anthropological approaches and the frameworks of Discourse Analysis and Text Linguistics. The aim of these courses is twofold: On the one hand to offer the necessary theoretical understanding in an area in which relevant research related to the Greek language is still emerging, and on the other hand to bridge the gap between the narrow concept of literacy offered by the current curricula and the multifaceted reality of literacy in contemporary societies, which ought to be promoted in pedagogical practice.
- c. Study a wide variety of teaching practices and methodologies, ranging from teaching the structural elements of language to teaching literature. The aim of this group of courses is the critical positioning towards the existing approaches and methodologies from both a scientific and a practical perspective.
- d. Cover the area of bilingual and multilingual education, with a twofold target: First, to offer a wider understanding of the related theoretical concepts (bilingualism, interlanguages, underlying linguistic competence); second, to provide educators with practical preparation and reinforcement to ensure both their understanding of the socio-cultural dimensions of bilingualism and their competence in deploying these effectively in a multilingual and multicultural classroom.

## Contact Details

### PROGRAMME COORDINATORS

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## INTER-DEPARTMENTAL AND INTER-DISCIPLINARY SELF-FINANCED PROGRAMME IN GENDER STUDIES

### Programme Description

The University of Cyprus Gender Studies postgraduate programme is offered by the Department of Education of the University of Cyprus in both Greek and English. The Programme is inter-disciplinary, self-financed, and co-ordinated by the UNESCO Chair and the Centre for Gender Studies Board (as appointed). The courses for the Programme are university-wide, and are offered by different departments of the University of Cyprus and by outstanding academics and researchers from around the world.

The Programme is addressed to students with an accredited University degree from across the disciplines, and it seeks to combine excellence in postgraduate education, innovative research, and a critical approach, not only towards theoretical issues, but also towards more practical and concrete issues.

The Master degree can be completed in one academic year of full-time study, or in two to three academic years of part-time study, and by earning 90 credit hours of taught course-work. The Ph.D. programme can be completed in three (i.e. six semesters) to eight (i.e. 16 semesters) academic years.

The degree programmes are offered in both Greek and English.

### Aim

The main aim of this Programme is to equip graduates with expertise in Gender Studies, providing them with the competence and skills necessary for their employment in either the public or the private sector, in executive, research and official posts where they will manage, promote and investigate gender issues through an inter-disciplinary perspective.

Moreover, the course aims to educate, train and prepare young scholars to take up a leading role in the field of Gender Studies, and to promote and develop gender issues in an innovative and creative manner across various disciplines and multiple strata of governance and policy, within the framework of democratic values, human rights and the politics of social justice.

More specifically, the Programme aims to:

- Promote Gender Studies at a postgraduate and interdisciplinary level.
- Promote research in the field of Gender Studies.
- Support the specialized study of key texts in Gender Studies literature and research, as well as the study of EU and other international policy documents on the subject of gender equality.
- Integrate research on the construction of gender within its historical and social context.
- Contribute to the development of modern and up-to-date policies and policy frameworks on gender matters, through the production of related scientific research and discourse.

- Support the development and fostering of leading personalities, who will be able to work on gender equality in all its dimensions and policy terrains, and promote gender issues on national and international agendas of social inclusion, economic development, legal reform and fair governance.

## Structure of the Gender Studies Master Degree

The Programme is based on the ECTS (European Credit and Accumulation System) and consists of 120 ECTS, which are distributed as follows:

### OPTION A

The Programme includes seven courses, two core/mandatory and five electives, and the production and submission of research work on a specific gender-related question, issue, matter or debate (mandatory). It also includes three mandatory post-graduate seminars.

*Total number of credits:*

2 Mandatory Courses X 12 ECTS (24 ECTS) + 5 Elective Courses X 12 ECTS (60 ECTS) + 3 Seminars X 4 ECTS (12 ECTS) + Dissertation (24 ECTS) = TOTAL 120 ECTS

### OPTION B

The Programme includes nine courses, three core/mandatory and six elective, and three mandatory postgraduate seminars (common core courses).

*Total number of credits:*

3 Mandatory + Specialization Courses X 12 ECTS (36 ECTS) + 6 Elective Courses X 12 ECTS (72 ECTS) + 3 Seminars X 4 ECTS (12 ECTS) = TOTAL 120 ECTS

	ECTS
<b>List of Core/Mandatory Courses</b>	<b>24-36</b>
GRS / EDU 682 Qualitative Research in Education or GRS / EDU 683 Educational Statistics with Applications of Statistical Packages	12
GRS 629 Feminist Theory	12
GRS 776 Queer Theory and the Study of Sexuality	12
<b>Mandatory Seminars</b>	
Student attendance at seminars is mandatory. Two seminars are core courses recommended by the Academic Advisor responsible for the programme. The third seminar will vary each semester.	
1. GRS 774 Academic Writing	4
2. GRS 775 Discourse Analysis	4
3. GRS 777 Seminar III	4
<b>Elective Courses</b>	<b>60-72</b>
Elective courses include: a) Courses that are already offered by various departments from across the University and are also cross-listed for the Gender Studies Programme (Group A); b) Courses that are new and designed specifically for the Gender Studies Postgraduate Programme, by the participating University departments and schools (Group B).	
Courses from another postgraduate programme/department may also be considered as an alternative elective course with the approval of the student's supervisor.	

### Indicative List of Group A Courses

The following are courses already running in other postgraduate studies programmes at the University and may also be offered for the Gender Studies Programme.

EDU 599 Gender Theories and the Politics of the Curriculum	12
EDU 536 Religions and Gender	12
EDU 641 Gender and Education	12
SPS 514 Feminist Theory	12
BMG 535 Byzantine Masculinities and Femininities	12
BMG 561 The Image of Women in Byzantine Literature	12
ARC 562 Portraits of Women in Byzantine Art	12

### List of Group B Courses

GRS 601 Power, Ideology, Inequality	12
GRS 602 History of Sexuality	12
GRS 603 Critical Theory in Gender Studies	12
GRS 604 Writing (and) Gender: Masculinity, Femininity and Beauty in Literature	12
GRS 605 Psychoanalysis and Gender Theories	12
GRS 606 Queer Theory and Civil Rights	12
GRS 607 Men and Masculinities	12
GRS 608 Femininities and Masculinities	12
GRS 609 Gendered Culture and the Socio-political Context: Issues and Questions of Power, Regulation, Control, Patriarchy, Familial and Inter-familial Discrimination	12
GRS 610 Gender, Media and the Production of Knowledge	12
GRS 611 Body, Gender, Sex in an Inter-cultural and Comparative Perspective	12
GRS 612 Performativity: Performing Gender and the Concept of Performativity in Judith Butler's Gender Trouble	12
GRS 613 Gender and the Cinema	12
GRS 614 Gender and Mathematics	12
GRS 615 Gender and Science	12
GRS 616 Gender and Biology	12
GRS 617 Gender and New Technologies	12
GRS 618 Gender Equality and the Law	12
GRS 619 Gender Equality, Human Rights, Gender Equality and the Law	12
GRS 620 Gender in Antiquity (Classic Greece) and Byzantium	12
GRS 621 Gender in Education	12
GRS 622 Gender and Economy	12
GRS 623 Architecture and Perspectives on Gender: Place, Gender, Space	12
GRS 624 "Masculinity", "Femininity", "Androgyny": Psychological Approaches to Gender Formation	12
GRS 625 Work and Gender Identities: A Psychological Approach	12
GRS 626 Work and Gender Identities: A Sociological Approach	12
GRS 627 Violence Counselling and Gender	12
GRS 628 Gender and Educational Administration	12
GRS 630 European Policy and Gender	12
GRS 631 Visual Sources in the Humanities and Social Sciences	12



GRS 632	Contemporary Trends and Issues	12
GRS 633	Gender in Archaeology	12
GRS 634	Gender and Disability	12
GRS 635	Sports - Women and Gender Equality	12
GRS 636	Gender in Greek Literature from Antiquity to the Present	12
GRS 637	Introduction to the Archaeology of Gender	12
GRS 638	Museum and Gender: Presentation and Education	12
GRS 639	Language and Gender	12
GRS 640	Gender and Public Policy	12
GRS 641	Anthropology of Gender	12
GRS 642	Race, Gender and Post-colonial Feminism	12
GRS 643	Feminist Political Philosophy	12
GRS 644	Gender and Biopolitics	12
GRS 689	Independent Course of Study	12
<b>Mandatory Seminars</b>		<b>12</b>
GRS 774	Seminar I Academic Writing	4
GRS 775	Seminar II Discourse Analysis	4
GRS 777	Seminar III (Seminar in Gender Studies, to be determined each semester)	4
<b>Master Dissertation</b>		<b>24</b>
GRS 798	Master Dissertation I	12
GRS 799	Master Dissertation II	12

## Structure of the Gender Studies Ph.D. Degree

For admission to the Ph.D. programme, the candidate is required to hold a Master degree in the same or a related subject. The Gender Studies Doctoral Programme requires students to successfully complete either 240 or 258 ECTS, distributed as follows:

	ECTS
• Successful completion of three to five courses	36-60
• Success in a Comprehensive Examination	33
• Research (8 stages X 15 ECTS)	120
• Doctoral Dissertation (on an original topic or a topic that makes an original contribution to knowledge)	
- Dissertation Writing Ia, Ib X 15 ECTS	30
- Dissertation Writing IIa, IIb X 15 ECTS	30
<b>Total</b>	<b>249-273</b>

## List of Courses

	ECTS
GRS 820 Comprehensive Exams	33
GRS 891 Research I a, Ib X 15 ECTS	30
GRS 892 Research IIa, IIb X 15 ECTS	30
GRS 893 Research IIIa, IIIb X 15 ECTS	30
GRS 894 Research IVa, IVb X 15 ECTS	30
GRS 895 Dissertation Writing Ia, Ib X 15 ECTS	30
GRS 896 Dissertation Writing IIa, IIb X 15 ECTS	30

## Courses Description

Each University department and school will add to/select courses to teach from the list. Each course is credited with 12 ECTS.

## Contact Details

### PROGRAMME COORDINATOR

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## Mandatory Core Courses and Seminars

### GRS 629 Feminist Theory (12 ECTS)

Study of classic and foundational feminist texts; familiarization with feminist theory; research on key issues. Theoretical background in, and contemporary theoretical approaches to, gender studies. The historical, social and individual approach to gender. Contemporary philosophical approaches to gender and feminism.

### GRS 774 Seminar I: Academic Writing (12 ECTS)

The course is designed to introduce students to the demands and challenges of graduate study, and to topics and questions characteristic of interdisciplinary scholarship in the field of gender studies. Thus, it offers advice and guidance on academic writing style and techniques, referencing and citing sources, writing the literature review, and planning and constructing the academic work required for the Master programme. At the same time, the course examines questions appropriate to interdisciplinary work in gender studies. That is, it explores the significance of gender as a field of study, and discusses themes and issues involved in analysis and postgraduate work, which would be specific to the particular field. As a result, the course equips students with the tools necessary to approach a topic, text, aspect of social organization, a discipline or a section of life in terms of gender, gender theory and gender-related analysis.

### GRS 775 Seminar II: Discourse Analysis (12 ECTS)

The course focuses on the relationship between gender and discourse and explores how gendered systems of power, social identity, and systems of knowledge and belief are constituted, reconstituted, normalized and maintained through the regulation of registers of discourse. The emergence of discourse as an analytical tool is examined with reference to different disciplines in the humanities and social sciences in order to illuminate how discourse analysis goes beyond the dichotomies of text/context, meaning/practice, intentionality/ effect to explore how social practices implicate signifying acts and vice versa. The focus is on language-in-use, interpellation, the constitution of subjectivity in and through discourse, and the legitimizing force of meaning production in specific social contexts. By the end of the course, students are expected to be able to develop a critical understanding of the relationship between language (use), normalization and power and to develop a critical understanding of how gender marks discourse and encodes power.

## Other Courses

### **GRS 601 Power, Ideology, Inequality (12 ECTS)**

Comparative perspectives on inequality in different societies based on either a structural/synchronic or a historical approach.

### **GRS 602 History of Sexuality (12 ECTS)**

The course investigates how sex, sexualities, sexual identities, and sexual practices are talked about, silenced, contained, enabled, comprehended, regulated, enter normative fields of meaning and regulation but also open up new terrains for agency and transformation, from the 19th century to the present day (from the Victorians to Freud to EU policy documents). Through the discussion of relevant theories, critical events, discursive shifts and critical concepts in the study of gender, the course also aims to highlight the processes through which the elaboration of gender as a field of inquiry has contributed to the re-thinking of traditional analytical categories, to the development of new epistemological and methodological approaches and to the inauguration of new kinds of politics. Towards this end, the 'historicization' of gender and sexuality is related to the study of race, labour, violence, religion, economy, class, body, age, hegemony and popular culture. Many of the topics to be addressed are relevant to contemporary public debates, including controversies over censorship of pornography, sexual violence, gay and lesbian sexualities, abortion, sexually transmitted diseases, sex education, trafficking, prostitution, medically assisted reproduction, sexual dysfunction, male potency, virility, fertility, etc. Theorists to be studied include, among others, Michel Foucault, George Chauncey, Katie King, William Connolly, Thomas Laqueur, Ann Laura Stoler and Sara Ahmed.

### **GRS 603 Critical Theory in Gender Studies (12 ECTS)**

The course examines the question of gender as a question of exploitation, subjugation and emancipation by revisiting key concepts, questions and debates in critical theory, from Marx to the Frankfurt School to contemporary theorists such as Jurgen Habermas and Seyla Benhabib. Topics to be explored include the tension between the universal human as the proper subject of philosophy and political theory and the historically gendered subject (human identified with male and humankind identified with mankind), responses to this tension (de-gendering universality, valorizing gender particularity), questions on the gendering of the inquiry on the nature of exploitation and alienation, the relation of gender to family, class, race, and culture, feminist perspectives on science and philosophy, the question of how the economy of goods has now moved into the life of emotional relations, etc. The encounter between critical theory and feminist theory is explored in the works of, among others, Patricia Williams, Patricia Hill Collins and Uma Narayan (class, race, culture), Sandra Harding, Evelyn Fox Keller and Donna Haraway (Gender, Science), Iris Marion Young and Seyla Benhabib (ethics and difference), Gender Democracy, Politics (Nancy Fraser, Susan Moler Okin, Bonnie Honig, Alexandra Halkias and Maro Panteliadou-Maloutas).

### **GRS 604 Writing (and) Gender: Masculinity, Femininity and Beauty in Literature (12 ECTS)**

The course investigates the role of gender in the history of literary genres, examines how gender consciousness mobilizes the renegotiation of theories and economies of genres, critically investigates the gender/genre intersection in texts such as consciousness raising narratives, autobiography, letter writing, travel writing, science fiction, feminist romance, lesbian fiction and other genres. The course also aims to mobilize a rereading of canonical literary texts from a gender sensitive perspective and, at the same time, aims to investigate the construction, the

acts and operation of gender through literary and cultural representations. Textual practices and readings are linked to the historical, social and cultural perspective from which the texts originate, the politics of production and the subject positionalities of reception so as to problematize the discursive construction both of gender and the ways we come to experience the gendered self.

### **GRS 605 Psychoanalysis and Gender Theories (12 ECTS)**

The course explores the relationship between psychoanalytical theories and theories of gender in order to foreground the complex formation of self, identity, subjectivity and alterity. The class discussions will look at object-relations theory and why the feminist appropriation and use of this theory has become a subject of debate among feminists. Also questioned will be what psychoanalytic theory has to do with the gendering of literary studies, and whether Freud's phallogocentric theories can be redeployed by feminist critics. We will look to see if the difference between Freud and Lacan makes any difference for the feminist study of gender, and what impact has Kristeva's work had on the redefinition of feminist questions on gender and politics. The course highlights the critical reception of traditional psychoanalytic works by feminists (Juliet Mitchell, Luce Irigaray, Teresa Brennan, Kaja Silverman, Teresa de Lauretis), and also explores how more nuanced psychoanalytic approaches to subjectivity and discourse have been interpreted as opening up new possibilities for feminist theory (Judith Butler, Jane Gallop, and Elizabeth Grosz).

### **GRS 606 Queer Theory and Civil Rights (12 ECTS)**

The course traces the multiple genealogies of the category of "queer" in relation to the emergence of the modern and the normalization of modern apparatuses of social control: analyzes the contribution of feminist theory and gender studies to the critical reclaiming of queerness; explores more recent developments in theories of power, politics, and social change in order to locate social movements within complex cultural structures of power, domination and transformation. The course examines critical moments in the history of LGBT movements and social activism in order to highlight the political relevance of the resignification of public space and the innovative reclamation of political engagement and social transformation. The seminar also introduces students to social movement theory, offers a critical review of the dominant theoretical frameworks, which have shaped interpretations of social activism and social movements, and stresses the relevance of gay activism for the theoretical and political reappraisal of the struggles for Civil Rights in tandem with the cultural struggles over meaning.

### **GRS 607 Men and Masculinities (12 ECTS)**

This course discusses and juxtaposes, initially, the essentialist view of masculine "identity" with postmodern feminism's engagement with masculinity as a terrain of multiple formations that are constructed and simultaneously (re) constructed in different historical and cultural contexts. It explores how men's lives and constructions of masculinity are affected by and influence the gendered social order, including the varied gendered constructions of violence, national identity and social risk. We will address issues such as: Men's networks, primary and secondary socialization and masculine identity construction, school as an arena of hyper (hetero) sexuality, discourses of male sexuality and fertility, male aggression and violence, the intersectionality of masculinity with multiple axes of marginality and privilege, intimacy and friendship among males, fathers and children, male body image and health, media representations of boys and men. The course debates and critically approaches the various mechanisms through which homophobic policing and

misogyny establish their presence within a variety of spaces and contexts, and provides a setting to debate strategies and prospects for changing the gendered social order and men's (as well as women's) lives.

#### **GRS 608 Femininities and Masculinities (12 ECTS)**

The course explores the meaning, nature and construction of femininities and masculinities, and how notions of femininity and masculinity operate in diverse areas to determine the roles and behaviours of men and women. Beginning with the body of theory that surrounds gender and the gendered self, the course moves on to examine masculinities and femininities as historical and conceptual constructions; that is, how they are understood historically and in terms of theory, conceptualization and analysis. The historical perspective will lead to an examination of contemporary debates and problematics surrounding gender, such as men's movements, third wave feminism, and the involvement of men in so-called women's causes, such as the "men against rape" initiatives. Then the course studies gender in relation to specific topics such as beauty, food and sports. Finally, consideration is given to the literary expression of gender, and to the ways in which women/ femininities and men/ masculinities are depicted in images and film.

#### **GRS 609 Gendered Culture and the Socio-political Context: Issues and Questions of Power, Regulation, Control, Patriarchy, Familial and Inter-familial Discrimination (12 ECTS)**

The course will emphasize the historical, structural and comparative analysis of gendered culture and the socio-political context, based on feminist scholarship and research. Within this framework, it will also present, discuss and critically approach the research findings that highlight the intense inter-relationship between the professional choices of young people, their views on family life, and the formation of gendered identities in adolescence.

#### **GRS 610 Gender, Media and the Production of Knowledge (12 ECTS)**

The course introduces students to key concepts on the power and influence of the mass media and explores the complex relationships among media images, cultural values, the development of gender identities and self-images and the trafficking of desire. The course encourages students to see themselves as products of media influence but also provides them with tools for critical viewing and deconstruction. Readings, assignments and production workshops will reflect a critical analysis of gender constructions, a nuanced understanding of the contemporary mass media environments and a more context-specific understanding of the operation of gender roles and audience reception in various media genres (these might include cartoons, the soap opera, music video, video games, talk shows, TV reality shows, etc.). Particular topics of concern include: (a) Investigation of the construction of sexuality and gender by and within the Cypriot media; (b) Gender and media audiences; (c) Gender and new technologies.

#### **GRS 611 Body, Gender, Sex in an Inter-cultural and Comparative Perspective (12 ECTS)**

This course offers an advanced exploration of the study of gender, sex and the body from a comparative and inter-cultural perspective, with particular emphasis on gender as an axis of cultural norms, values, meanings and signification processes. Drawing primarily on anthropological and ethnographic studies, the course examines how gender and gendering come to have meaning within kinship relations, politics, religion, ritual, production and reproduction, and other processes. Some of the questions to be investigated: How are gender and sexuality construed differently in different cultures? How and why did the

materialization of the body, its flows, signification and control come to be demarcated as areas of cultural, ethnic and religious regulation? How do structures and institutions within different cultures reinforce and support or destabilize and empty of meaning certain gender distinctions?

#### **GRS 612 Performativity: Performing Gender and the Concept of Performativity in Judith Butler's Gender Trouble (12 ECTS)**

The course aims to analyze the performativity turn in feminist theory and its impact on the analysis of power, normativity, subjectification and agency. It includes a conceptual clarification of key terms such as performativity and performance, iteration, re-iteration and iterability, interpellation and subjectification, subversion and reification. The course elaborates how the "gender trouble" initiated by Butler is revisited and redeployed in the work of scholars such as Wendy Brown and Sara Ahmed, and also explores critical response to the emphasis on performativity and the downplaying of structural and systemic factors.

#### **GRS 613 Gender and the Cinema (12 ECTS)**

The course studies the filmic representation of socially conceptualized gender relations and gendered identities within varying socio-historical contexts. The course centres on, analyzes, and critically engages with the variety of discourses on the meaning of terms such as "masculinity" and "femininity", which may co-exist even within the same filmic narrative; at the same time, it establishes the problematic that relates to the ideological assumptions of filmic narrative, and the ways these are not always unambiguous. Through the study, critical thought on, and re-consideration of, the above issues, in tandem with creative debate, the course attempts to record and compare the rigid gender regimes within a variety of socio-historical contexts, and also to comment on historical changes taking place with regard to attitudes, ways of life and beliefs, as these are reflected within filmic narratives.

#### **GRS 614 Gender and Mathematics (12 ECTS)**

The course looks at: Gender-based differences in learning mathematics as well as in relation to beliefs and attitudes towards mathematics, and the social factors that influence them; International research output and the gender perspective on mathematics; gender and mathematics education; strategies and planning that educators can use for the development of a gender perspective in mathematical education.

#### **GRS 615 Gender and Science (12 ECTS)**

The course investigates gendered differences in cognitive development and performance in the sciences, and the factors that influence them, with emphasis on international research output and paradigms on the interest, participation and performance results in the natural sciences across educational levels. The course looks at strategies and planning that educators can use to address the gender aspect of natural sciences courses.

#### **GRS 616 Gender and Biology (12 ECTS)**

The course analyses the physiology of gender and the environment, and examines new reproductive technologies and issues and debates in bioethics.

#### **GRS 617 Gender and New Technologies (12 ECTS)**

The course examines issues related to gender and technologies: feminist theories on technology; gender difference in the use of information technology and the acquisition of competence and skills in information technology; study of these through an overview and analysis of international research literature; technology as masculinised culture; representations of gender,

and the consequences of using gender to create and/or reinforce sexist attitudes and conceptions.

#### **GRS 618 Gender, Equality and the Law (12 ECTS)**

The course examines the relationship between the law, the legal institutions and gender: The processes of gender construction through the law; analysis of the law, legal institutions and gender in relation to equality, the rule of law, and equality before the law.

#### **GRS 619 Gender Equality, Human Rights, Gender Equality and the Law (12 ECTS)**

The course looks at: the legal aspects of contemporary issues in gender equality; historical and contemporary approaches to the legal aspects of gender equality; quotas, sexual harassment, trafficking. This course is an introduction to various areas of law that affect women in specific ways. It will examine laws relating to sex discrimination, employment, sexual harassment, rape and sexual assault, abortion, marriage, divorce, child custody, inheritance, pornography and prostitution. It will explore topical debates in these various areas of law and how the law can be used as a strategy to bring about social change.

#### **GRS 620 Gender in Antiquity (Classical Greece) and Byzantium (12 ECTS)**

The course examines the different activities and the social roles of gender in ancient Greece and Byzantium, through the use and analysis of relevant written resources, ancient findings and works of art. Special emphasis is placed on the gendered ideologies that affected the construction of social roles and ways of acting, as well as the behaviour of men, women and eunuchs, this last being considered the third sex in Byzantium. The gendered structures of ancient and medieval societies, like ancient Greece and Byzantium, reveal a historically detached scheme that enables us to understand how gendered roles affect the lives and behaviours of individuals. The determining role that the ancient Greek and Byzantine notions of gender and sexuality play in the interpretation of historical data regarding individual lives is understood through knowledge of these notions. A basic goal of the course is to help students realize that many of the ideologies and values considered important in the construction of gendered identity in modern and contemporary societies come from the past itself. In fact, the knowledge of this past facilitates a better understanding of the ways gendered differences function today.

#### **GRS 621 Gender in Education (12 ECTS)**

The course examines the way in which gendered and sexual identities are constructed and produced within the educational system. In particular, it studies issues such as the socialization of the two genders, gender and social class, media stereotyping, and the relationship between gender and success at school. Emphasis will also be placed on the processes of learning, organization and discipline within the school environment, which defines the acceptable and appropriate manifestations of gendered sexuality, and also on the way this gives meaning to the gendered social stratification of contemporary societies.

#### **GRS 622 Gender and the Economy (12 ECTS)**

This course examines issues such as participation of gendered individuals in the labour market, the relationship between pay and gender, social welfare and gender, gender and business initiative, gender within the centres of decision-making, forms of employment and their relationship to gender.

#### **GRS 623 Architecture and Perspectives on Gender: Place, Gender, Space (12 ECTS)**

The course investigates the gender dimension of the design, the use and the reproduction of architectural space. Questions to be raised involve the extent to which the organization and allotment

of space reflect and reproduce gendered social difference/ inequality and how difference/ inequality influences the design of space. The course takes an interdisciplinary approach, employing tools from various fields, including the history of architecture and the history of world cities, social sciences, philosophy, history and the sociology of science.

#### **GRS 624 "Masculinity", "Femininity", "Androgyny": Psychological Approaches to Gender Formation (12 ECTS)**

The course introduces, presents and critically discusses the major psychological approaches to gender formation: Freudian theory, psychoanalysis post-Freud, Lacanian theory and theorization; Melanie Klein's object-relations theory; Albert Bandura's and Walter Mischel's theory of social learning; Lawrence Kohlberg's theory of cognitive development; gender schema theory; Sandra Bem's theory of psychological androgyny. Moreover, the course engages with feminist criticism that goes in tandem with theories such as the above.

#### **GRS 625 Work and Gender Identities: A Psychological Approach (12 ECTS)**

The course examines the way that gendered identities are formed and produced within the workplace. The issue is studied on the basis of the various psychological theories that relate to identity formation and the theorizing of work and the workplace.

#### **GRS 626 Work and Gender Identities: A Sociological Approach (12 ECTS)**

The course examines the way that gendered identities are formed and produced within the workplace. The issue is studied on the basis of sociological approaches to labour and work and the theorizing surrounding the workplace and work. It examines the role of gender stereotyping in the choice of profession, and also gender discrimination within the workplace. Topics of inquiry include: historical and contemporary accounts of women's participation in paid and unpaid labour; the nature of women's work through the divisions in the labour market due to gender, race, nationality, ethnicity, and class; a detailed look at occupational sex segregation, sexual harassment, the glass ceiling; the role of religion, culture, and education in determining women's opportunities and their value as workers and as family providers.

#### **GRS 627 Violence Counselling and Gender (12 ECTS)**

The course examines the multiple forms of violence as well as the causes and various effects of violence on victims and perpetrators. It also studies the role counselling can assume in the prevention of, and response to, violence, along with the forms of support that are available through counselling.

#### **GRS 628 Gender and Educational Administration (12 ECTS)**

The course examines developments and research related to gender equity in educational administration and leadership. Gender is used as a conceptual lens to investigate policies, practices, and reforms in schools and other educational settings, with particular attention on the implications for administration. The course highlights and studies the career paths of male and female school leaders and their perceptions of gender factors that affect entry and advancement in leadership. It investigates the role of gender barriers to women in school administration and the leadership styles of female administrators. Administrative gender equity issues in higher education are also discussed.

#### **GRS 630 European Policy and Gender (12 ECTS)**

The course presents, analyses and critically investigates European Union policy, including the policy of equality, the policy of positive measurements, and the gender mainstreaming policy. It employs a critical approach to the theory-practice divide.



### **GRS 631 Visual Sources in the Humanities and Social Sciences (12 ECTS)**

During the last three decades, discussions among social scientists over the effects and nature of “visual culture” have provided original insights into how technologies and imaging systems have had profound implications for the way we create, record, manipulate, circulate, store, interpret, remember, and use information. This course aims to highlight the importance of visual sources in the humanities and social sciences, and to explain the ways in which researchers can locate, evaluate and interpret visual sources. Learning how to use a “critical visual methodology” will significantly improve students’ research skills and enable them to use photographs, works of art, films, maps, advertisements to answer questions on issues of identity, human relations, power and knowledge.

### **GRS 632 Contemporary Trends and Issues (12 ECTS)**

The course investigates contemporary trends and issues related to gender, equity, equality and gender mainstreaming in contemporary society.

### **GRS 633 Gender in Archaeology (12 ECTS)**

The aims of the course are : a) Present the theoretical framework for gender, as it has been developed in the areas of sociology, social anthropology and archaeology; b) discuss the main issues and meanings that concern archaeologists when they study the role and function of gender in ancient societies; c) explain the role of gender, age and experience in the construction and expression of social identity; d) examine the existing methodological ways of studying gender in ancient societies, and; e) present the ways in which gender has been studied with reference to archaeological examples. Through the course, students will: a) learn the basic terms and the current debates and problematic on the archaeology of gender that relate directly to the area of social sciences; b) learn the ways in which gender played a determining role in the construction of social and personal identity, and in the negotiation of social relations and relationships in prehistory; c) critically approach the proposed developmental models concerning gender that continue to formulate the interpretations of ancient societies and are associated with the progress of modern social organization; d) recognize the consequences that the study of gender has on the understanding of the socio-economical and political organization of ancient as well as contemporary societies.

### **GRS 634 Gender and Disability (12 ECTS)**

The course presents and analyzes critical issues of gender and disability arising from the feminist perspective developed in the field of Disability Studies. The feminist approach to disability is related to issues of gender and disability, since it considers that the disabled person is traditionally oppressed by a society where decisions are made exclusively by the able-bodied (similar to the way in which traditional feminism considers that women are oppressed by a society controlled by men). The dominant themes for this course will be the understanding of issues surrounding the social construction of the notion and category of disability in relation to gender, and the basic principles developed by the major theorists on feminist approaches to disability in relation to personal experience, and how this can be utilized in politics. The personal experience of disability is examined through the interaction of different factors such as gender, age, type of disability, the individual’s personal and professional life, etc. The way in which people use their experience of disability for the political struggle is examined in different countries. The course analyzes classic and contemporary texts by disabled theorists and activists, as these encourage critical thinking on contemporary issues that are of interest to theory, research, and daily practices. For example, the position of men and women with disabilities is

discussed in relation to the following issues: politics and disability (disability movements, anti-racist legislation, etc.), agents of power and oppression against persons with disabilities, representations of the disabled body, stereotypes of the disabled, perceptions of their sexuality, eugenics, sterilization, euthanasia, etc.

### **GRS 635 Sports, Women and Gender Equality (12 ECTS)**

The course addresses key issues relating to women in sports, taking into account sociological, psychological, historical, biological and other important parameters. It analyzes the influence of women in sport through their role as athletes as well as their role in decision-making at a local and international level. The course also considers the purpose and impact of official pronouncements on the topic of Women and Sport, such as those of the International Olympic Committee and the European Union, from the perspective of gender equality and feminist theory. Finally, it includes case studies of women in sports, so as to enable students to critically approach and analyze the key issues and challenges involved.

### **GRS 636 Gender in Greek Literature from Antiquity to the Present (12 ECTS)**

The primary objective of this course is to examine comparatively the representations of gender in Greek literature throughout the years, from the ancient era to our own, through contemporary theories of gender, sexuality, body, identity and performativity. Approaching literature through gender theory allows for basic literary motives and characteristics to appear. In addition, this kind of approach allows us to understand the structures of a whole literary system with a long history. Moreover, this approach shows how concretized social perceptions, preconceptions and ideologies can affect the art of discourse as well as how these can be reproduced to create modern cultures and conceptions.

### **GRS 637 Introduction to the Archaeology of Gender (12 ECTS)**

The course aims to introduce students to the study of gender as this has developed in the discipline of Archaeology in the last decades, with reference to archaeological examples from Europe and the eastern Mediterranean. Gender Archaeology is a specialist field in the Humanities and Social Sciences that contributes critically to the understanding of social organization, gender behaviour and roles in human societies. The aim of the course is to encourage the critical review of stereotypes that are used to explain social roles and behaviour in ancient societies, and to promote new analytical approaches to archaeological evidence within the framework of the Social Sciences. The study of gender in ancient societies deconstructs social stereotypes that legitimise social inequalities in modern society. At the same time it contributes to the wider fields of history and education through the promotion of new interpretations regarding gender that shape modern social awareness.

The course will present the theoretical framework for the study of gender in Archaeology and Social Anthropology with reference to the methods and archaeological evidence used or the understanding of gender in past societies. Some of the themes covered in the course are:

- Evolutionary models, matriarchy and patriarchy.
- Gender and social organization.
- Theory of the mother-goddess.
- Man the hunter/warrior: myths and reality.
- Gender and social identity.
- Gender, social roles and behavioural norms.
- Embodied gender.

- Gender, labour division and Production.
- Gender and material culture.
- Funerary archaeology and gender.
- Representation and gender (anthropomorphic figurines, wall paintings, etc.).
- Case studies: Gender in ancient societies of the Eastern Mediter-Ranean (Aegean, Cyprus).

#### **GRS 638 Museum and Gender: Presentation and Education (12 ECTS)**

The course introduces students to the theorisation that has developed recently in the field of Museum Studies regarding the presentation of gender in modern museums. In particular, in the course we will discuss the role of the museum in the way that it shapes/ can shape academic, social and educational norms (organized collections, printed material). We will explore the biases that not only influence the work of archaeologists/museologists, but also legitimise modern social stereotypes through the manipulation of history. We will examine the ways in which gender is presented in museums today with reference to specific examples. Furthermore, we will discuss the ways that the distorted presentation of gender roles affect history/historical accounts and the perpetuation of modern social stereotypes. Finally, we will look at new approaches in Museum Studies that aim to 'free' gender subjects from modern biases, and suggest new research models in education. Some of the themes covered in the course are:

- Museum as educational medium in modern society.
- Social stereotypes and the interpretation of gender in archaeology.
- The impact of archaeological interpretations in museum studies and education.
- Presentation of gender in modern museums.
- Case studies: gender in archaeological, folk and natural history museums.
- New approaches for the presentation of gender in museums
- The use of media for the presentation of gender and educational methods.
- Learning from the past.

#### **GRS 639 Language and Gender (12 ECTS)**

This seminar explores the role that gender plays in various disciplines, focusing on areas of language/linguistics such as phonology (intonation), morphology (values of feminine trade names), semantics (derogation of feminine terms), conversational analysis and pragmatics (politeness, insults and humor). Indeed, since the 80s, linguistics and language studies have undergone a major paradigm shift, as gender, a hitherto peripheral category in the discipline, has emerged as a pivotal area of linguistic inquiry. The result is the new discipline called Language and Gender Studies. We will first define language and then gender according to the main theoretical frameworks structuring the field: The deficit theory (Lakoff 1975/2004), the difference theory (Tannen 1990), and the post-modern/queer theory (Hall & Bucholtz 1995; Cameron 1998 et passim). We will then investigate how gender interacts with language structure and how gender structures discourse: We will particularly emphasize the latter direction in considering both language and gender as embedded in structures of power, authority, and social inequality. Therefore, the social and cultural contexts will be considered as pivotal in giving meaning to both linguistic practices and gender categories.

#### **GRS 640 Gender and Public Policy (12 ECTS)**

Through feminist discourse critique, social movement theory and feminist analysis of policy frames, the course explores the ways in which issues related to women and gender move into the public realm and are reflected in policy agendas. Continuities and discontinuities between different kinds of gender equality politics are also addressed (politics of difference and politics of identity; politics of recognition and/or politics of redistribution; affirmative action and equal opportunity policies; gender mainstreaming policies). In the context of the theories of gender difference, biologism and essentialism, the course examines how issues such as care, unemployment and intimate citizenship become gendered and/or de-gendered in policy agendas and policy debates, as well as how contemporary social and political legal instruments, machineries and institutions which are organized around gender differences promote or fail to promote gender equality and overturn or confirm the various gender regimes. The course focuses particularly on social problems with different and differential impact on men and women, exploring policy solutions at the international and national level, and evaluating the relative success/failure of these policies in meeting their objectives. The analysis of marginality and subjugation is based on inter-sectionality; while the overlapping influences of race, class, gender and sexual orientation on policy are reflected both in the readings and in the analytic approaches to course topics. The course allows graduate students to focus on specific policy domains: Employment and unemployment; states, families and social welfare; work-family balance; gendered division of housework and care; regulation and control of women's bodies; gender based violence and harassment; abortion and reproductive rights; marriage, adoption and intimate life.

#### **GRS 641 Anthropology of Gender (12 ECTS)**

The course explores gendered identities, relationships and meanings across a range of cultures. It examines the historical development of anthropological theories of gender from classic perspectives to the postmodern era, discusses male bias in the discipline of Anthropology, questions uses of anthropological accounts that sustain patriarchal ideologies and explains how a gender-sensitive approach destabilizes dominant trends in anthropology and opens up for analysis gendered dimensions of human life.

Major questions that will be addressed in the course include: What kinds of commonalities shape cultural understandings of masculinity and femininity? How have anthropological data been used in arguments about the universality or historical specificity of sexual inequality? How might an exploration of theories on human nature, cultural structures, power, and agency help us evaluate alternative strategies for representing 'maleness' and 'femaleness' cross-culturally? What is the contribution of feminist anthropology to both the field and gender equality policies? Considering the relationship between gender and other relations of difference and inequality, what is the future of Gender Studies in Anthropology? How have feminist anthropologists responded to universalist claims of women's oppression? How have feminist anthropologists focused attention on gender and how has this shift of attention reshaped the field of Anthropology? What are the challenges of feminist fieldwork and feminist ethnography? How has feminist anthropology widened theoretical and methodological framings of culture, kinship, power, sexuality, incest taboo, family, cleanliness, health and sickness?

#### **GRS 642 Race, Gender and Post-Colonial Feminism (12 ECTS)**

The main goal of the course is to integrate feminist post-colonial thought, which delves into the experiences of women

particularly affected by the (post)colonial condition, with an understanding of the relevance of gender, race, sex and class in the study of colonial and imperial histories. Imperial projects have been sustained through hierarchical categorizations that marginalize colonized subjects. The course delves into the particularities of women's subaltern experiences, struggles and solidarities through an exploration of the following questions: How have (post)colonial encounters shaped gender, racial, class and sexual identities? How have women built solidarities amidst violence? How have gender, racial, class and sexual negotiations of power redefined the history of colonies, empires and the broad post-colonial world?

The course does not take (post)coloniality as a geographically and historically bound category, but rather as a reference to the unequal power relationships resulting from modern colonial-imperial interactions. The rise of post-colonial and diaspora studies has produced a new set of issues for feminist post-colonial criticism. Parallel to these issues, the course examines the meanings of transnationalism, its relationship to other concepts such as globalism and planetarity, and these concepts' impact on feminist literary and cultural studies.

#### **GRS 643 Feminist Political Philosophy (12 ECTS)**

This module gives students the opportunity to focus and reflect on representative thinkers and key ideas in feminist political philosophy, as the course covers a wide range of schools (liberal feminism, radical feminism, analytical feminism, continental feminism), historical periods, and philosophers. We will discuss the work of such political philosophers as Christine de Pizan, Mary Wollstonecraft, J.S. Mill, Harriet Taylor Mill, Iris Marion Young, Catherine McKinnon, Carole Pateman, Martha Nussbaum, Andrea Dworkin, Anne Phillips, Virginia Held, Susan Moller Okin, and others. The module discusses and critically assesses their ideas on gender and public policy, representation, equality and difference, multiculturalism, democracy, republicanism, civic virtue and citizenship, the capabilities approach, pornography and prostitution as forms of violence against women, gender and human development, care ethics, the feminist state, equality, respect and recognition, the social contract discourse, human rights, body politics, feminist perspectives on civil society, development and the market, empowerment, justice (social and global), responsibility and inclusion.

#### **GRS 644 Gender and Biopolitics (12 ECTS)**

The course investigates the relationship between gender and biopolitics. In his late lectures at the College de France, Foucault used the term biopolitics to refer to modes of politics and mechanisms of population control that are exercised at the level of life as optimization. These include policies that control birth and mortality as well as systems of surveillance that monitor rates of health and disease. The course examines specific kinds of biopolitics exercised specifically on the bodies of men, women, GLBTQIA (Gay, Lesbian, Bisexual, Transgender, Questioning, Intersexed and Ally) and other groups, but also examines gender itself as a technology specific to the normalizing of sexuality through the regulation of the reproductive arena and the optimization of sexual reproduction. With a focus on questions of reproduction and reproductive choice, fertility and infertility, gendered optimization of health and well-being, the course explores how a biopolitical lens reframes debates on gender and sexuality. Key questions include: What is gendered biopolitics? Is gender itself a biopolitical technology? What are some contemporary mechanisms that control reproduction and sexual health? How do these mechanisms reflect and produce health disparities across axes of race, class, and gender? How should we concep-

tualize choice and autonomy in regulatory, normalizing contexts? How are the incidence, diagnosis, and treatment of particular diseases (e.g., breast cancer, cardiovascular disease, eating disorders, aging) shaped by gender, race, and class? What are the conditions that lead to optimal for women, men and GLBTQIA?

#### **GRS 689 Independent Course of Study (12 ECTS)**

Aims to familiarize students with texts and research data not covered by other courses.

#### **GRS 776 Queer Theory and the Study of Sexuality (12 ECTS)**

The seminar aims to introduce students to queer theory and its relevance to the troubling of the theoretical binary of sex (as natural) vs. gender (as socially constructed), the destabilization of heteronormativity (both as a social system and as framework of normative assumption that informs the study of history and texts), the critical genealogy of the category of "normal" and the increased emphasis on the study of sexuality and sexual acts in tandem and in tension with essentialist notions of gender and identity politics. The seminar traces the theoretical roots of queer theory in poststructuralist critical theory, critical moments in the history of LGBT movements and the latter's continuities and discontinuities with other liberation movements. The seminar covers key texts by Eve Kosofsky Sedgwick, Judith Butler, Lauren Berlant and Michael Warner and recent literature.

*For additional course descriptions please refer to the relevant department(s).*

## **Courses Description**

All courses are credited with 12 ECTS.

All seminars are credited with 6 ECTS.

#### **EDU 520 Discourse Analysis (12 ECTS)**

- The notion of discourse. Theoretical approaches.
- Text as a unit of study. Texts, text types, genres.
- Connection of discourse to ideology.
- Discourse as performance and identity construction.
- Discourse analysis across epistemological domains. Approaches and methods of discourse analysis.
  - o Critical Discourse Analysis.
  - o Systemic Functional Linguistics.
  - o Multimodal – multisemiotic analysis of discourse and communication.
  - o Analysis of multimodal texts and genres (print, digital).
  - o Conversation analysis and Linguistic Ethnography.
- Discourse analysis in education (pedagogical discourse, classroom discourse).
- Discourse analysis across domains.

#### **EDU 521 Language, Discourse and Communication (12 ECTS)**

- Discourse through sociolinguistic and anthropological theories.
- Language as a communication system and as semiosis.
- Language use, domains of language use, the model of SPEAKING by Hymes.
- Language as performance.
- Language and identity from an individual and a collective perspective.
- Language in social groups and in communities of practice.
- Orality and literacy.

- Language and institutions.
- Language and education.

#### **EDU 522 Language, Discourse and Communication (12 ECTS)**

- Unpacking the notion of literacy.
  - o Comparison of different meanings/definitions.
  - o Connections to notions of reading, text (oral and written discourse), meaning-making, children's development as literate beings.
- Language and literacy as sociocultural and political practice.
  - o Oral and written cultures.
  - o Multiple literacies – school/academic literacies.
- Literacy studies.
  - o The history of the field – phases/generations of literacy studies.
  - o Contemporary approaches to theorizing literacy.
  - o Implications of literacy education and pedagogy, in and out of school.
- The teaching of language and of language arts – genealogical and epistemological analysis.
  - o Examination of the field as localized and historicized – changes over time and connections to broader epistemological trends.
  - o Pedagogical approaches and epistemological premises for the teaching of language arts (e.g., structural, communicative, functional, genre-based, critical, post-critical approaches).
  - o Education policy, official curricula and instructional materials for the teaching of language arts: contemporary views and changes over time.

#### **EDU 524 Multiliteracies and Literacies in the Digital Age (12 ECTS)**

- Key terminology: multiliteracies, multiple literacies, new literacies, digital literacy, literacies in the digital age.
- Texts and practices in the digital age.
  - o Notions of text and textuality.
  - o Connections to broader issues of identity, multiplicity, diversity and social equity.
- Theorizing language and literacy in the digital age.
  - o Contrasting theorizations of “new literacies” – emergence and reconceptualization of the term.
  - o Comparison of the theoretical grounding of contemporary approaches like multimodality, social semiotics, sociocultural approaches, sociomaterial approaches, and post-humanism.
- Meaning-making and text production in digital spaces and with digital media – Theoretical constructs for the analysis of:
  - o Digital, multimodal, and multimedia texts.
  - o Digital spaces, social networking sites, and hybrid practices (e.g., on/off screen, on/off-line, augmented reality, artificial intelligence).
- Teaching models and pedagogical approaches.
  - o Multiliteracies and New Learning.
  - o Digital literacy approaches.
  - o Media literacy.

#### **EDU 527 Capitalizing on Language Variation in Education (12 ECTS)**

- Theoretical grounding of language variation.
- Geographical language variation.
- Social groups, communities and language.
- Social groups, communities and language in Greek-speaking populations.
- Language contact, language change, language maintenance.
- Pedagogical dimensions of language variation I: translanguaging, bidialectalism, biliteracy, creole and ebonics in education.
- Pedagogical dimensions of language variation II: Geographical and social varieties of the Modern Greek Language.
- Pedagogical dimensions of language variation III: The context of Cyprus.
- Variation as a characteristic of literacy in society.
- Epistemological fields, discourse communities, genres across the content areas.
- Content area literacies: historical and epistemological grounding.
- Content area literacies: pedagogical and educational dimensions.

#### **EDU 529 Monolingual, Bilingual and Multilingual Education: Attitudes, Trends and Perspectives (12 ECTS)**

- Introduction in core concepts: Individual bilingualism. The psycholinguistic approach.
- Introduction in core concepts: Social bilingualism. The sociolinguistic approach.
- Identity, nation and cultural diversity. The construction of "national" identity in monolingual and multilingual contexts.
- Second language acquisition, Code switching. A framework for teaching second language.
- Dealing with multilingualism: Educational policy.
- Models of bilingual/multilingual education I & II.
- Case studies in different countries: Multilingualism and educational policy (e.g. Canada, Belgium, Pakistan, Israel, Spain).
- Multilingualism in Greece.
- EU and Multilingualism.
- Multilingualism in Cyprus.

#### **EDU 530 Theological Dimensions of Education (12 ECTS)**

The theological dimensions of education and paideia. Ontologies and education. Several theories regarding the goal, content, methodology and valuation of education.

#### **EDU 531 Religions in the Era of Globalisation (12 ECTS)**

Religions in the history of humankind. The ontologies of several religions. The great religions and religious phenomena today.

#### **EDU 532 Issues of Ethics (12 ECTS)**

Ontologies and Ethics. Ethics in modernism and postmodernism. The great issues in Ethics.

#### **EDU 533 Education for Life. Lifelong Education (12 ECTS)**

Theology: The relationship of human beings with God. Self-knowledge: The relationship of human beings with themselves. Sociality: The relationship between human beings. Physical theory: The relationship of human beings with nature. Sexuality, eros, love. Friendship, entertainment, loneliness. Politics,



economy, work. Peace, justice, violence. Creativity, art, holidays. Literature, Cinema, Mass Media. Community, Tradition, Ecumene. Illness, death, mourning. Sacramental life.

#### **EDU 534 Religious Education in School (12 ECTS)**

History, goal, content, methodology, etc., of Religious Education in school. The role of religious education in Cypriot, European and the global educational system today.

#### **EDU 535 Methodology of Religious Education in School (12 ECTS)**

The theological, philosophical, psychological, sociological and historical dimensions of Religious Education in school. Goals, curricula, textbooks, etc., of Religious Education in School.

#### **EDU 536 Religions and Gender (12 ECTS)**

The sacred and gender. Religious matriarchy. Religious patriarchy. Gender in the great global religions. The Orthodox Church and gender. Western Christianity and gender. Religious presentations of gender in a secular society.

#### **EDU 542 Special and Inclusive Education in Cyprus (12 ECTS)**

- Inclusive education: terms and definitions.
- Special education, integration, and inclusive education.
- Inclusive education and learners with disabilities.
- Policies for inclusive education.
- History of education in Cyprus: From segregation to integration and inclusion.
- Policy and practice in relation to the education of learners with disabilities in Cyprus.
- Barriers in thinking and practice that prevent inclusive education.
- Experiences of people with disabilities in different educational settings (segregating settings, integration settings, and inclusive settings).
- Implementing inclusive education.

#### **EDU 545 Disability in the Society and at School (12 ECTS)**

- Disability studies: models of disability and disability approaches.
- Critical Disability Studies.
- Cultural Disability Studies.
- The construction of the concept of disability: international literature and literature focusing on the Greek-Cypriot culture.
- Personal experiences of disability in the Greek-Cypriot culture.
- Disability activism.
- Disability arts.
- Disability studies in education.
- Anti-oppressive pedagogies.
- Key approaches in anti-oppressive curriculum development.

#### **EDU 546 Differentiated Instruction in the Inclusive Classroom (12 ECTS)**

- Definitions and understandings of differentiated instruction in the inclusive classroom.
- Critical issues in inclusive education that can be informed by differentiated instruction (e.g. achievement, assessment, curriculum).
- Planning for differentiation.
- Differentiation of the content.
- Differentiation of the process.

- Differentiation of the outcome.
- Differentiation of the final product.
- Differentiation according to learners' learning styles.
- Differentiation according to learner's readiness.
- Differentiation according to learners' interests.
- Software and hardware for differentiated instruction and materials in the inclusive classroom.
- Universal Design for Learning and differentiated instruction: How they are linked.
- Practicing on the development of differentiated instruction skills.

#### **EDU 550 Education and Social Exclusion (12 ECTS)**

What is social exclusion, related terms (poverty, marginalization). The economic, social and political dimensions of social exclusion. The EU policy for defining social exclusion. Moral issues. Social exclusion groups and inclusion policies in Cyprus.

Social stratification and social class. The role of cultural capital in social class and school achievement. Ways of responding to the phenomenon of school dropouts and vulnerable groups. The dimension of gender. The reproduction of the working class through school failure.

Relationship between sexuality and vulnerability for social exclusion, statistics for LGBT+ and social exclusion. Movements against homophobia, current policies and transformations. Legalization of same-sex marriage/civil unions and its role in preventing social exclusion.

World statistics on gender inequality, girls' educational and professional choices, gender inequality at work. Social exclusion of women in developing countries especially through the lens of globalization and trade liberalization.

The new migration order after the cold war, migration patterns, world statistics on migrants and refugees, forced migration, asylum seekers and trafficking. The role of economic globalization in creating waves of refugees, racism and xenophobia.

The politicization of disability in the 1980s. Review of policies and practices for supporting disabled people. How the connection between a person's value and paid labor contributes to the marginalization of disabled people.

Unemployment statistics, ways of measuring unemployment. The experience of unemployment through personal narratives, connection with dominant public narratives in presenting the phenomenon of unemployment.

The meaning of the welfare state, historical evolution of the concept and the European model, connection with globalization and waves of economic crises. The 'flexible' worker and the concept of 'affirmative action'.

#### **EDU 555 Postmodern Philosophers, Alterity and Education (12 ECTS)**

The course offers a broad and in-depth study of the philosophical work of theorists such as Levinas, Lyotard, Kristeva, Derrida, Butler, and Spivak among others. It explores a multiplicity (ethical, linguistic, psychoanalytic, etc.) of approaches to alterity and presents the relationship of education to alterity as one of a subjectivization process, of developing a connection between the familiar and the uncanny. It also accounts for the relation of education to alterity in terms of polarizations between inwardness and outwardness as well as between reconstruction and deconstruction of meaning. By unravelling the many relations to alterity, the course broadens the various perspectives on educational topics such multiculturalism, cosmopolitanism,

the construction of subjectivities and regimes of normality in educational settings, processes of racialization, constructions and transformations of gendered boundaries and desires, the teaching of textuality, the rupture of borders, post-disaster memory and writing.

#### **EDU 556 Advanced Seminar in the Theory and Philosophy of Education (12 ECTS)**

The seminar offers an in-depth study of either: The work of a specific philosopher or of a specific school of thought/theory; or of an exchange between philosophers with regard to a concrete debate or to a dialogue between philosophers. It encourages students to make a concomitant investigation of educational ideas, ideals, aims and practices. The main objective of the course is the careful and attentive reading of philosophical and theoretical texts and the freeing of educational thought from algorithmic receptions of discourses related to issues of ethics, historiography, textuality, epistemology and so on.

#### **EDU 560 Contemporary Principles in Early Childhood Education (12 ECTS)**

This course enables students to study, explore and reconceptualise the current educational, theoretical, practical and research trends in the field of early childhood education. We will analyze specific ideological principles and directions (e.g. postmodernism, feminism, deconstruction, reconceptualism, multiculturalism, ethics, etc.) to help students reconceptualise current practices and ideologies. The multiple identities of the child will be explored through diverse perspectives. The goal is to have students reconceptualise their understanding of the field through research and theory.

#### **EDU 561 The Diverse Perspectives of Play (12 ECTS)**

- Syllabus analysis.
- Adult play.
- Definition, theories and types of play.
- Play, literature review and research.
- Play, learning and development.
- The role of the adult/educator in children's play.
- Play and policies.
- Play, observation and research.
- Critically reviewing play and taking on a postmodern approach to play.

#### **EDU 562 Mathematical Thinking in the Early Years: Theoretical and Empirical Approaches (12 ECTS)**

This course examines contemporary theoretical perspectives on the development of mathematical thinking and mathematics education research trends in early childhood. Specifically, the course focuses on the following topics: the definition of mathematical thinking and its significance to young children's cognitive development; developmental progression of mathematical thinking in various concepts and processes-the learning trajectories approach; the development of problem solving strategies and intuitive rules as used by children; factors that influence the development of mathematical thinking; the role of representations and symbolism in the development of mathematical concepts and structures in young children; the impact of teaching on the development of mathematical concepts and abilities in young children; methods of exploring and assessing the development of mathematical thinking in young children; and future research directions.

#### **EDU 563 Supporting Creativity in Early Childhood Education (12 ECTS)**

- Syllabus analysis.
- Definition and characteristics of creativity.
- Literature review, research studies and creativity.
- Relationship of creativity, learning and development.
- The role of the educator/adult in enhancing creativity.
- The role of the environment and the materials in enhancing creativity.
- Humor and creative thinking.
- Visual and verbal humor and creative thinking.
- Music and creative expression-thinking.
- Arts and creative expression-thinking.
- Creativity, observation and research methods.

#### **EDU 564 Ways of Studying and Observing Young Children's Development and Learning (12 ECTS)**

This course examines various methods and approaches for investigating, observing, documenting and assessing children's development and learning in early childhood. Specifically, the course focuses on the following issues: How children think and express their thoughts; techniques for observation of individual children or children in groups; and documentation of young children's learning. Students will first critically explore and use existing assessment tools of learning and development in early childhood, and will then develop their own methods considering the unique characteristics of young children.

#### **EDU 565 The Semiotic Approach to Learning and Teaching Mathematics in Early Childhood (12 ECTS)**

The course focuses on the following topics: The definition and importance of semiotic representations in learning and teaching mathematics; internal and external representations; classification of representations; discussion of various theories about mathematical representations and their development in relation to learning early mathematics; the role of multiple representations in young children's understanding of mathematical concepts and problem solving; pictorial representations in books and the development of mathematical thinking; the significance of children's and the teacher's use of gestures in learning and teaching early mathematics; and research applications and methodological approaches used in the exploration of young children's development of representations.

#### **EDU 566 Social Dimensions of the Child's Development (12 ECTS)**

This course includes discussion of development issues through the prism of socio-cultural contexts in a child's life (e.g., family, child care, school, friends, playground). Based on socio-epistemological principles in the field of Education as well as the reconceptualisation of existing theories, we will identify the basic elements that affect children's social identities and examine their impact on the child's development. Using current research in the field of Early Childhood, students will critically analyze the variables that affect the provision of appropriate experiences and opportunities for the child within a hybrid society.

#### **EDU 567 Developing Research Proposals in the Field of Early Childhood Education (12 ECTS)**

This course will focus on recent Early Childhood research studies and methodologies, in order to highlight gaps in the field and guide students in thinking about the most appropriate ways of developing research proposals in the field of Early Childhood Education. The students will learn how to write literature reviews, develop research questions, collect and analyze data within the

context of the international research agenda of the Early Childhood field.

#### **EDU 570 Research and Theory of Sports Pedagogy (12 ECTS)**

This course examines research, theory, and methods of physical education. The course offers a critical approach to analyzing the existing knowledge base in sports pedagogy. It explores the historical and contemporary perspectives on the research, theory, and methods related to teacher education in physical education.

#### **EDU 571 Instructional and Curriculum Models in Physical Education (12 ECTS)**

Presentation and analysis of various models of physical education. Description of instructional approaches and programs that maximize children's learning and improve educational systems. Study and critical analysis of programs and models used internationally.

#### **EDU 572 Current Issues in Sports Pedagogy (12 ECTS)**

This course examines recent topics and trends in physical education. Specifically, it investigates the major issues surrounding physical education in schools, analyzes the major trends in physical education, discusses the provisions of reform and their repercussions in physical education, and considers ways to make teaching more effective in physical education settings.

#### **EDU 573 Curriculum Development in Physical Education (12 ECTS)**

The course considers the principles underlying curriculum instruction and various curriculum elements in the field of sports pedagogy. It offers analysis of the planned and sequenced learning experiences that allow students to reach significant goals. Students study the standards-based physical education curriculum and build a program based on this approach.

#### **EDU 574 Analysis of Teaching in Physical Education (12 ECTS)**

The course presents and analyzes systems used in evaluating student behavior, teacher behavior and student-teacher interaction. Students will examine strategies for planning and implementing effective teaching in physical education.

#### **EDU 580 Theoretical Foundations of Instructional Technology: Problems and Prospects (12 ECTS)**

- Learner-centered design principles.
- Learner-centered computer environments.
- Technological pedagogical content knowledge theory.
- Cognitive load theory.
- Cognitive type.
- Multimedia design principles.
- Internet-based learning environments

#### **EDU 581 Data Analysis in Instructional Technology: Conclusions and Applications (12 ECTS)**

This course examines a number of qualitative and quantitative studies representative of research efforts (local and international) in Instructional Technology, and discusses the advantages, disadvantages, and usefulness of each research methodology. The analysis of the studies follows strict criteria related to issues of sampling, reliability, internal and external validity. The course emphasizes the need, however, for both analytic and systemic research methodologies in the field of Instructional Technology in order to examine adequately the interactions of individuals with technological tools.

#### **EDU 582 Preparation of Research Proposals in Instructional Technology (12 ECTS)**

The course identifies research areas and questions in the field of Instructional Technology that merit systematic examination. These include: Grounding research in appropriate theoretical frameworks; literature review; design methodology; methods of data analysis; interpretation of results, conclusions, and their educational and theoretical importance and application.

#### **EDU 583 Design and Development of Dynamic Educational Systems (12 ECTS)**

- Modeling.
- Simulation.
- Educational design of simulations.
- Programming techniques for simulations.
- The integration of simulations in teaching and learning.

#### **EDU 597 Educational Governance and Development (12 ECTS)**

In recent decades, the educational world has changed. Many new actors – global, regional, national and subnational – that are involved in the governance of education have emerged or are emerging. These include: Regional blocks such as the EU, Mercosur, NAFTA, ASEAN; international governmental organizations (IGOs) such as the World Bank, OECD, UNDP, the Council of Europe, and UNESCO; non-governmental organizations (NGOs); and private, for- and non-profit agencies and institutions such as business corporations, consultancy firms, professional communities of practice and individual scientific experts. Old and new actors conceptualise and promote growth and development across the world, more often than not in the same direction – thus, while some define and are involved in actualizing the 'world-class university', others advocate the 'effective school', the 'professional teacher', and the 'lifelong learner'. This course explores the overall shape and particular features and characteristics of the new landscape of educational governance, seeking to identify and map out what, how and where new imaginings of development are articulated, as well as the ways in which these are diffused in different parts of the world.

#### **EDU 598 Postcolonial Theory and the Curriculum (12 ECTS)**

It analyzes the history that made Europe the subject of history and the relational form of power / knowledge of orientalism. It examines the productive-positive form of power and the production of colonial subjects in relation to colonial and post-colonial education. Governance and racialization. Interdisciplinary discussion of the discourses on culture, race, sex and sexuality, evolutionism, civilization and learning is being explored, and the political and epistemological relationship between educational institutions and narrations of analytical programs and colonialism both in the metropolis as well as in the archeological and archeological (Foucault) and in the regions.

#### **Themes**

- The concept of empire (Negri and Hardt) and educational change.
- Genealogy of curricula: from hygiene to biopolitics (Agamben).
- Travel, journalistic texts, comic series, and the tropism of the empire / hegemony.
- The gender dimension of power (Stoler).
- The gendered dimension of subalternation processes.
- Colonial genealogy of the literary rule.
- "The spark of Turkish fire" ("grecian profile").

- The ideology of civilization and salvation in curricula.
- The reason for breed in textbooks.
- Building / claiming "whiteness".
- Idea of "English learning".
- The invention of "Africa": Somatic and sexuality.
- Zoos, museums of natural history, museums of national culture, housekeeping as post-cultural cultural fields.
- The colonial genealogy of the Cypriot educational system.
- Feminism of the Third World.
- Colonialism and biopolitics:
  - The leopard.
  - Colonial policies to promote hygiene and the treatment of aphrodisiacs.
  - Women's school "Victoria".
  - The establishment of the nursing school.
  - Criminalization of homosexuality.

### **EDU 601 Philosophical Dimensions in Education (12 ECTS)**

The main themes of the course enhance the students' understanding of philosophy, philosophy's relationship to education and the analysis of meta- theoretical justifications of educational practice. The relationship of philosophy and education is tackled chiefly through a thematic perspective. We explore and discuss the pedagogical significance of ideas related to reason, language, ethics, subjectivity and culture. Theory and practice, private and public sphere, knowledge and power, truth and deception are some of the binary oppositions that we study, since these have determined many of the modern and postmodern framings of education.

### **EDU 603 Comparative Education (12 ECTS)**

Comparative Education (CE) as educational relationships. The core themes of CE include: System, transfer, space, time, state, context, culture, identity. Deconstructing entrenched ideas, such as CE compares countries and systems, looking for similarities and differences. Globalization, internationalization, Europeanisation, democratisation, colonialism, neo- imperialism and their educational codings. The role of international development agencies (e.g. UNESCO, World Bank, OECD) and non-governmental organizations in global and local education. The dialectic of the global and the local. European education policy and national translation. New trends in international education (school autonomy, parental choice, accountability, benchmarking, educational markets, and so on). The 'Finnish model', the Prussian and Soviet models: the promises and perils of comparison. The use and abuse of CE. The relationship of CE to education policy and reform. The importance of CE for a small state like Cyprus. Cyprus education as educational transfer.

### **EDU 607 Sociology of Curriculum (12 ECTS)**

- Sociology of education; the sociology of curriculum within the curriculum studies field; conceptualizations of curriculum (formal, informal, hidden, null, etc) and their sociological study. Curriculum as political and ideological text and social agents/actors.
- Functionalism, reproductive theories, resistance theories and radical intervention theories; critical theories; the turn towards matters of political and pedagogical practice, (micro) interpretative approaches and symbolic interactionism, Combining approaches in the sociology of curriculum.
- Curriculum and cultural studies: Issues of representation, hegemony, ideology and identity.

- The 'new sociology of education', curricula and school knowledge; genealogies of school subjects, social and critical realism.
- Post-structural approaches and critiques of the sociology of curriculum: The 'problem' of agency and the constitution of subjects, identity as embodiment.
- Sociology of the teaching profession and conceptualisations of curriculum: Issues of autonomy and heteronomy, biography and autobiography, identity as narrated self, personal and professional identities.
- Political sociology of curriculum: Theories of curriculum reform, change and review.
- Constitutional and legal dimensions in the study of curriculum.
- A thematic approach in the study of curriculum: Gender and sexuality, social class and educational background, racism, ethnocultural identity and diversity, globalization and migration, human rights etc.
- Analytical-theoretical and empirical research in the sociology of curriculum.

### **EDU 617 Educational Government and the Management of Change (12 ECTS)**

The meaning of change and types of change in education. The main dimensions/aspects of change mainly in relation to the way teachers deal with change. The fear of change, resistance to change and ways of managing them. The role of the organisation, the leader and other factors in the process of acceptance and implementation of change in education. Characteristics of the leader which are linked to acceptance and effective promotion of change in organisations. Examination of educational change and reform issues in the national and international context.

### **EDU 620 Introduction to Educational Administration (12 ECTS)**

The educational system and the knowledge basis for educational theory and practice. Concepts and theories related to leadership, motivation, decision making, communication etc. Educational administration topics in the Cyprus context. The structural characteristics of the Cyprus educational system and the main problems that relate to it. Contemporary trends and research in the area of educational administration and their effect on educational policy.

### **EDU 623 Observation and Evaluation of Teaching and Personnel (12 ECTS)**

The course consists of four major units. The first unit focuses on educational evaluation in general (summative and formative) and on educational evaluation in the Cypriot educational context, in particular. The second unit considers studies that empirically validate the critical role that teachers have in promoting student learning and discusses the notions of good and effective teaching. The third section explores different approaches employed to evaluate teaching and teachers, including value-added models. Classroom observations have a central role in this unit; discussed among other topics are issues such as, observation foci and approaches for studying instruction, different models and rubrics (generic and content-specific) for observing and evaluating instruction, reliability and validity of observation estimates, and adapting different observation rubrics for use in the Cypriot educational context. The last unit focuses on how classroom observation and evaluation can create an arena for improving instruction; issues of meta-evaluation are also considered.



### **EDU 631 School Effectiveness and School Improvement (12 ECTS)**

The course focuses on two main units. The first unit examines the major findings of international research in the field of school effectiveness, and general effectiveness-enhancing factors are analysed. The following three disciplinary backgrounds to educational effectiveness modelling are discussed: a) the economic approach, focused on “education production functions”, b) the educational psychological approach to effective instruction and learning conditions, and c) the generalist-educationalist approach to integrated, multilevel school effectiveness modelling. Major issues of school effectiveness research such as the size, stability, consistency and scope of school effects are discussed. Theories on school, organizational, and instructional effectiveness are examined and implications for the development of school effectiveness research are drawn. The second unit is an attempt to draw on what is known about managing change and school effectiveness and to apply this knowledge to practical development activities in schools. Thus, the contribution of school effectiveness research to school improvement is examined and the strengths and weaknesses of both fields of educational research are identified. Special emphasis is given to the development of research projects attempting to use insights from effectiveness and improvement research to managing the process of ongoing development.

### **EDU 637 Theory and Politics of Multicultural Education (12 ECTS)**

Multicultural education is addressed as a pedagogical field of aporia and also possibilities related to the movement of peoples, ideas, cultures and power in the contemporary globalized setting, as social action but, also, as a field of crisis production and crisis containment.

The class opens up the discussion by posing the claim of recognition of cultural difference as anchor of collective identity in multicultural states. The class historicizes the definitions and political articulation of terms such as civilization and race throughout fields of discourse that produced legitimization tools for politics of conquest, assimilation and segregation. This includes a political genealogy of whiteness in connection to migration policies, a postcolonial genealogy of the terms culture and Civilization in various disciplines, and a critical analysis of how colonial conceptualization of multiculturalism have been inherited by dominant discourses and debates about multicultural education and its prospects.

The course covers issues such as: Classroom approaches to cultural, ethnic and national diversity; minorities, minoritization, and minority education; cultural mobility, multilingualism, hybridity and displacement in contexts of migration, globalization, diaspora, postcoloniality; the veil affair in France and its redeployment in Europe; racism and critical race theory; faces and frames of multicultural education in Cyprus.

### **EDU 639 Inclusive Education: The New Face of Special Education? (12 ECTS)**

- The dualistic thinking in special and inclusive education: Controversies and projections.
- The rhetoric of special and inclusive education: Similarities and differences.
- Learners with disabilities: Experiences in the mainstream and special school, academic and social achievement in relation to placement in different settings.
- Parents of children with disabilities: Their role and experience in special education and in mainstream schools, their positions on inclusive education.
- Segregating practices in mainstream schools: The need to change the roles of all the stakeholders involved.

- Mainstream class teachers: views on inclusive education, role, challenges.
- Special education teachers: views on inclusive education, role, challenges.
- The peers’ role in inclusive education.
- Teaching assistants in the mainstream school.
- The ‘place’ of special education in inclusive education systems: Myths, realities, and prospects.

### **EDU 640 Principles and Processes of Curriculum Development and Evaluation (12 ECTS)**

- The field of Curriculum Studies: genealogy, spectrum, focus.
- Epistemological and methodological issue in the study of curriculum.
- Basic terminology, types and conceptualisations of curriculum.
- Curricula as social, historical, political, cultural constructs and under negotiation amongst social actors: The case of the history of Cyprus curricula.
- Curriculum as supranational and trans-national text: Examples of influences and “localization” in Cyprus.
- Philosophical orientations-foundations, aims and objectives of curricula.
- Curriculum development models: Premodern, modern, child-centred, scientific-positivist, practical, critical, poststructural.
- Curriculum as product and as praxis: Teacher role and that of other social actors, action research as a process of curriculum development and reflective practice.
- Approaches of selection and organization of content in curriculum development: Horizontal and vertical structuring of content, academic, interdisciplinary and integrated/cross-curricular programmes, the project method, the case of the current official curriculum: Success and efficiency indicators & framework of purpose development.
- Selection and sequencing of learning activities in curriculum development, approaches, types, strategies and techniques of teaching, examples of activities and practices.
- The process of needs assessment and situational analysis, child/learner evaluation before, during and after curriculum implementation.
- Paradigms of curriculum evaluation: Functional-positivist-technical, naturalistic, transactional-constructive, critical, postmodernism- poststructuralism and programme evaluation.
- Sectors/foci of evaluation: Product, process, politics, staff and goals.
- Types of programme evaluation e.g. proactive, clarificative, interactive, monitoring, impact.
- Evaluation models, e.g. Goals oriented-Tyler, Goals-Free Evaluation- Scriven, Judicial /Adversary, Connoisseurship model-Eisner, Kirkpatrick’s model, Situated evaluation, CIPP model (Context, Input, Processes, Products).
- Theories of change and implementation of curricula, cases of reform in Cyprus and elsewhere.
- The hidden/latent curriculum, paraprogramme, the null curriculum.
- Interpretation, writing, evaluation criteria and analysis of school textbooks and educational materials.

#### **EDU 641 Gender and Education (12 ECTS)**

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- The role of feminist thought in education. Gender, Education and social reproduction. The role of feminist theory in educational research.
- Women's access to the teaching profession. Historical arguments for opening up the profession to women. The model of ideal teacher as ideal mother. Gender and the work force. Feminization of the teaching profession. Gender and reproduction of the educational work force.
- Care as a form of work and care as women's work. Women in charge of offering care (physical and emotional). Care as ethic. Contradictory positions on the ethics of care in feminist thought.
- Film Kramer vs Kramer.
- The study of masculinity, historically and culturally. The concept of Hegemonic Masculinity. Multiple Masculinities. The role of school. The "crisis" of masculinity and debates on boys' educational failure.
- Femininity and beauty. The concept of beauty in feminist thought. Beauty as a form of oppression and beauty as a victim of feminism.
- Gender violence in schools. Gender and bullying. Sexual harassment in schools. Gender-based violence in youth relationships. Involving men in cultural change on the issue of violence against women.
- The concept of gender as identity. The role of parents in creating gendered environments at home. Gender variance. Differentiating boys' and girls' behavior.
- Sexuality and modernity. Sexual orientation and the LGBTI community.
- Sexual orientation in Cyprus.

#### **EDU 645 Educational Policy (12 ECTS)**

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- The concept of educational policy and the knowledge base for decision making and policy making in this area.
- Factors influencing educational policy both at the macro-level of state policy and the micro-level of the school unit.
- The use of research in the formulation of educational policy. Trends in contemporary educational policy.
- Important issues in educational policy as they relate to the aims and priorities of developed and developing countries.
- Educational policy issues in the Cyprus context.
- Recent trends in education and their effect on educational policy

#### **EDU 646 Globalisation, Cosmopolitanism and Education (12 ECTS)**

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Discussion of globalization, nationalism, patriotism and cosmopolitanism with an eye to philosophical-educational sources and political-philosophical springboards, past and present. From the Cynics and the Stoics, to Rousseau and Kant and then down to Nussbaum we will cover a broad spectrum of ideas relevant to political and citizenship education.

#### **EDU 651 Nature of Science and Science Teaching (12 ECTS)**

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The main topic of this course relates to the nature of scientific theories and deals with issues such as the role of observation and experimentation, processes of scientific inquiry, the role of models, the sociology of scientific research, and the main attributes differentiating a scientific theory from other thought processes. Other major topics of the course are: The main characteristics of scientific knowledge (tentativeness, multi-

modal, social, non-objective, human endeavor); difference between theories, laws and hypotheses; the pluralistic view on the nature of science and the scientific method; teaching NoS; science and pseudo-science; nature of science in school's science curriculum.

#### **EDU 652 Constructivism and Inquiry Learning (12 ECTS)**

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The course explores the process of inquiry as it relates to scientific conceptualizations and consequent explanation of natural phenomena. Within this framework, the logical relationship between the scientific concepts embedded in a hypothesis and the design of a valid experiment are exemplified. We place emphasis on the formulation of appropriate questions and the design and implementation of investigations. We recognize the role of empirical data and the importance of critical evaluation of the data sources, the data collection process as well as the validity of data processing and analysis. Issues related to scientific reasoning and argumentation, the integration of procedural and conceptual knowledge, and the contribution of mathematics and technology in promoting the process of inquiry are also examined.

#### **EDU 653 Cognitive Constraints in Learning Natural Sciences (12 ECTS)**

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Student responses to questions relating to issues of natural sciences reveal problems in their understanding, for example, preconceptions, naive conceptions, alternative frameworks, inert knowledge, context-dependent knowledge, contradictions. The course exemplifies ways of identifying these problems and examines theoretical propositions regarding their interpretation. Within these theoretical orientations, the course examines the role of different factors such as pre-existing knowledge, conceptual reasoning or epistemological difficulties, and instructional approaches in an attempt to address the issues pertaining to the design of more effective teaching interventions. All of the mainstream, up-to-date theories on knowledge construction and conceptual change are examined.

#### **EDU 654 History of Education (12 ECTS)**

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What is history? Education in Europe since the Enlightenment and the rise of the nation-state. The invention of the grammar of modern schooling. Education, nation-building and national identity formation; Education and industrialisation; education and national culture; education, state formation and patriotic citizenship. The welfare state and the democratisation of education after World War II. Post-industrial and post-modern patterns of education: Education for global economic competitiveness and global citizenship; European citizenship, multiculturalism and interculturality in education. The neoliberal state. Education in Greece after the establishment of the nation-state. Irredentism and the Great Idea in education. Church, orthodoxy and education. Reform and counter-reform in Greek education. Education in early colonial Cyprus (1878- 1909). Education and colonialism. Ideology and the founding of the first public gymnasium (1893). The hidden curriculum of Greek-Cypriot schools (1900-1931). Enosis and education. British education policy and the conflict of identity (1931- 1949). School history as conflict. Education in the first post-independent years (1959-1974). The education reforms of Sophianos (1976-1980). Education reform in the period 2004- 2010. Education and ethnic conflict. Cyprus education as educational transfer. Cyprus curriculum today: historical reflections.

#### **EDU 655 Fundamentals of Environment and Sustainability Education (12 ECTS)**

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Basic concepts (sustainable development, sustainability, environmental education, education for sustainability, social, environmental and economic dimensions of environmental

crisis, environmental identity, environmental literacy and environmental citizenship, environmental justice, environmental values, global education). Theories of de-growth and localization. Circular economy. Definition of ESE. Relations and Connections between Environmental Education and Education for Sustainability. History of ESE. Foundations of ESE. Environmental ethics and environmental values. Critical exploration of different perspectives of Sustainability

#### **EDU 656 Teaching and Learning in Environmental and Sustainability Education (12 ECTS)**

Theories of learning (constructivism, socio-cultural theories of learning, activity theory, communities of practice, theories of children participation, transformative learning). Educational traditions within ESE. Pedagogical strategies for democratic, inclusive teaching and learning. Critical pedagogy. Implications of educational psychology for ESE. Environmental psychology and learning. Learning environments. Children participation and involvement in decision making and action.

#### **EDU 657 Design and Implementation of Environmental and Sustainability Education Curricula and Projects (12 ECTS)**

Principles of effective curriculum design. Curriculum design literature. Advantages and disadvantages of different kinds of ESE curricula and projects. Inclusion of race, ethics, science gender in ESE curricula. Evaluate and critique different EE programmes and curricula from different theoretical stances. National and international curricula resources. Instructional methods associated with ESE. Incorporating technology and social media in ESE curricula and projects.

#### **EDU 658 Formal and Non-formal Learning Environments (12 ECTS)**

Place-based education, pedagogies of place. Nature-based, residential and adventure programmes. Community ESE. Comparison of Formal ESE, Informal ESE and Interpretation. Education for sustainable living and learning activities for both formal (i.e. school and university based) and non-formal (i.e. community-based) education settings. Garden-based Learning. Urban Environmental Education.

#### **EDU 659 Research in Environmental and Sustainability Education (12 ECTS)**

- Trends in ESE research.
- Insights from research on environmental and sustainability learning.
- Review of research orientations that relate to ESE – tensions between different research orientations.
- Practical examples from multiple contexts.
- Quantitative and Qualitative Traditions in ESE research.
- Research ethics.

#### **EDU 660 Design, Development and Evaluation of Curricula in Science Education (12 ECTS)**

- Theories on curriculum design, development and assessment.
- Principles for conceptual hierarchies in curriculum activities.
- Principles for design activities and material in curriculum.
- Difficulties who arise when designing curricula and exceeded practices.
- Epistemological analysis of content in science curricula.
- The role of facilitator questions to integrated development of conceptual understanding and reasoning skills.
- Methods for validating curriculum materials.
- Develop of conceptual understanding and the development of reasoning and investigative skills.

#### **EDU 662 New Technologies and Learning in the Natural Sciences (12 ECTS)**

Cognitive tools for teaching and learning. Mechanisms for integrating and applying information and communication tools in the development of curriculum materials in the natural sciences. Information and communication tools for modelling, simulating, communicating, organizing and processing information, controlling mechanisms and sensors. Modelling as a process of teaching and learning.

#### **EDU 663 Modern Trends in Teaching Natural Sciences (12 ECTS)**

Intended learning outcomes (dissemination of information, cognitive and procedural skills, construction of concepts) and teaching approaches. Teaching methods and teaching interventions. Cooperative learning in natural sciences. Problem solving approaches. Teaching as a process of scientific investigation and as a process of promoting conceptual development. Development of attitudes and skills. The contribution of natural sciences in promoting social and cultural change.

#### **EDU 664 Integrated Curricula in Natural Sciences (12 ECTS)**

- Principles of design, develop and evaluate curriculum and teaching materials which are aiming at integrating physics, chemistry, biology, engineering and technology all together.
- Principles of interdisciplinary and domain integration.
- The big ideas of science and engineering.
- Scientific practices.
- Physical and chemical systems and mechanisms.
- Modelling of phenomena and other approaches of integration.
- STEM.
- Reasoning abilities and scientific thinking.
- The development of conceptual understanding through integrated curricula (physics, chemistry, biology, and technology).

#### **EDU 667 Theory and Research in Geometry Learning and Teaching (12 ECTS)**

The course studies research data and their connection with the teaching practice for the development of the required knowledge for the teaching of geometry and measurement in secondary education. The course will discuss the role of geometry in mathematics curriculum, as well as issues related to the teaching of these topics. In particular, through the study and discussion of research papers, the course will outline issues related to the development of geometrical thinking, the role of geometric shapes and intuition in geometry, problem solving, understanding of definitions, proving and the use of technology in geometry and measurement teaching.

#### **EDU 668 Critical Environmental Literacy: Identities, Places and Frames in Environmental and Sustainability Education (12 ECTS)**

- Critical Theory and Pedagogy.
- Eco-justice. Cultural knowledge, decolonization and ESE. Ecofeminism.
- Past & current ESE criticisms. Theories of Identity.
- Critical theories of Place.
- Examinations of values & ethics in EE.
- Environmental action and social change. Activism and participatory ESE.
- Critical engagement in environmental and sustainability action.
- Engagement with multiple cultural perspectives.

- Framing the debate around approaches to ESE (neoliberal, critical and transformative approaches to ESE).
- Collaborative learning environments.
- Transformative learning environments.
- The pluralistic perspective of ESE.

#### **EDU 670 Theory and Research in Algebra and Calculus Learning and Teaching (12 ECTS)**

The course aims to develop prospective teachers' knowledge for teaching algebra and calculus in high school by utilizing research findings and their connection with teaching practice. In particular, through the study of research papers and discussions based on hypothetical teaching scenarios, students will get a further insight of the mathematical knowledge, pedagogical issues, conceptual difficulties, and teaching approaches for calculus concepts and proofs.

#### **EDU 671 Cognitive Analysis of Mathematics Learning (12 ECTS)**

The course uses a cognitive approach to examine how mathematics is understood and learnt. Methodologies and concepts from mathematics psychology are used to examine how mathematics knowledge develops. The course covers the following themes: Intelligence theories, cognitive styles, mathematical creativity, students gifted in mathematics and critical thinking in mathematics.

#### **EDU 672 Topics in the Philosophy and History of Mathematics (12 ECTS)**

This course investigates the fundamental problems of the epistemology of mathematics such as what is mathematics and how is it created, what does it mean for a person to learn, how does learning take place, etc. The three main positions on the foundations of mathematics are discussed: Logicism, Formalism, and Intuitionism, as well as some recent views on quasi-empiricism (Lakatos, Putnam). Specifically, topics such as the concept of mathematical truth, the concept of proof are discussed. Philosophical topics are presented in the context of their historical development and emphasis is placed on methods and approaches that make use of history in the teaching of mathematics.

#### **EDU 673 Curriculum Development for Mathematics and Educational Evaluation (12 ECTS)**

This course is divided into two parts. The first part analyses fundamental aspects of curricula with emphasis on the organization and structure of mathematics curricula. A philosophical analysis of programmes developed in the last few years both in Greece and internationally is provided. The parameters influencing the development of curricula are investigated. Special emphasis is given to the content and the pedagogical aspect of mathematics curricula and several models of developing curricula are examined. Specifically, the curricula used in the United States, United Kingdom, and Greece are examined and compared to those used in Cyprus. In the second part of the course, emphasis is placed on the importance of assessment in the effort to modernize the curriculum. In particular, methods of curricular assessment in mathematics are presented and contemporary student evaluation procedures are examined. Finally, the international literature is examined for methods of specifying standards and the basic approaches to their assessment.

#### **EDU 674 Mathematical Problem Solving (12 ECTS)**

The course examines concepts and strategies related to mathematical problem solving, problem posing and assessment. We discuss the classical heuristics strategies proposed by Polya

and more contemporary interpretations and their applications to the process of problem posing, the teaching process and assessment of problem-solving capability. Introducing open problem activities in instruction is an integral part of the course. The course also attempts to offer a comprehensive assessment of the recent findings of the extensive research activity on the subject.

#### **EDU 675 Recent Trends in Mathematics Education (12 ECTS)**

The aim of the course is to introduce the student to the main concepts and methods used in contemporary research on Mathematics Education. The course has three main dimensions:

- First Dimension: Concepts and methods in mathematics teaching. Several concepts and methods associated with Mathematics Teaching are presented, such as the didactic contract, didactic transformation, the concept of the obstacle, didactic situations, and framework games. These concepts and methods are applied to mathematical concepts of primary and secondary education.
- Second Dimension: Language and learning in mathematics. This involves the reading of mathematical texts; characteristics of mathematical texts; comprehension tests; types of legibility; completion tests.
- Third Dimension: Representation problems in the teaching and learning of mathematics. This dimension presents evidence on the role of representations and translations in the learning of mathematics and the solution of problems. It examines applications associated with mathematical concepts used in primary and secondary education.

#### **EDU 676 Contemporary Technology in Mathematics Teaching (12 ECTS)**

The course examines current findings in relation to the incorporation of technology with the subject of mathematics. Special emphasis is given to contemporary theories of psychology, which constitute the basis for the introduction of new learning processes. The course discusses ways of incorporating computers and software packages (Logo, Mathematica, Cabri, Spreadsheets, Sketchpad, etc.) in the teaching of mathematical concepts, with emphasis on use of the Internet. It analyzes methods of introducing and using computer graphics in the teaching of algebra and calculus. Finally, it presents projects developed abroad concerning the introduction of technology in the teaching of mathematics.

#### **EDU 680 Theories of Mathematical Understanding (12 ECTS)**

The aim of the course is to draw together contemporary views on the growth of mathematical knowledge and relate these to theories developed within Mathematics Education Research.

The main themes of the course are:

- Different forms of mathematical understanding.
- Cognitive growth in mathematics.
- Notions of abstraction and their influence on the development of mathematical concepts.
- Intuitive rules and mathematical understanding.

#### **EDU 681 Seminar: Educational Administration and Evaluation (6 ECTS)**

Structure of a scientific article. Purpose of the literature review. Difference between descriptive, critical and systematic literature review. The main steps of a qualitative synthesis of literature review. Conducting quantitative syntheses of research findings (meta-analyses): Main steps and examples of meta-analyses in the field of educational administration and evaluation. Organization of a master's thesis (emphasis on the structure of a



thesis and what each part contains). Presentation and exemplary implementation of writing techniques. Preparation of a thesis presentation.

#### **EDU 682 Qualitative Research in Education (12 ECTS)**

The course consists of four major units. The first unit, which is introductory, defines educational research and discusses the philosophical/conceptual underpinnings of qualitative research as opposed to those of quantitative research; it also considers basic strategies of qualitative research (ethnography, phenomenology, case studies, participatory/action research, and critical theory). Focusing on issues of research design, the second unit presents the "emergent design model," and discusses the role of theory, conceptual maps, and autobiographical notes in qualitative research; it also considers issues related to sampling, entrance to the field, rapport, and reciprocity, and ethics in conducting qualitative studies. The third unit focuses on data collection (interviews, observations, texts and pictures) and data analysis methods (constant comparative, analytic induction, grounded theory, and content analysis). The last section familiarizes students with Atlas.ti for analyzing qualitative data and discusses issues of writing and evaluating qualitative research using a set of criteria.

#### **EDU 683 Educational Statistics with Applications of Statistical Packages (12 ECTS)**

The course focuses on two main units. The first unit, which is introductory, familiarizes students with fundamental concepts in conducting (quantitative) research; basic types of research designs (experimental studies, correlational studies, surveys, ethnography, case studies, etc); the four basic stages in conducting a research study (defining and elaborating upon a research problem; considering issues of sampling, instrumentation, validity/reliability; analyzing data and presenting findings; and interpreting findings); the five basic chapters of a research report (problem definition, literature review, methodology, results, conclusions); and ethics in conducting educational research. The second unit, which occupies the greatest portion of the course, first introduces students to data manipulation (e.g., data recoding/computing). It then immerses students to basic and more advanced statistical analyses (descriptive, correlational, and inferential analyses, non-parametric criteria, one and two-way ANOVA, exploratory factor analyses, reliability analyses, and multiple linear regression analyses), while also discussing issues of variable normality/transformation, and effect sizes.

#### **EDU 684 Seminar in Learning in Natural Sciences and Environment (6 ECTS)**

Structure of a scientific article. Purpose of the literature review. Difference between descriptive, critical and systematic literature review. Exemplary reviews on science learning topics. Organization of a Master's thesis (emphasis on the structure of a thesis and what each part contains). Presentation and exemplary implementation of writing techniques. Preparation of a thesis presentation.

#### **EDU 685 Seminar in Mathematics Education (6 ECTS)**

Customised to the topic of each particular seminar.

#### **EDU 687 Seminar in Curriculum, Teaching and Comparative Education (6 ECTS)**

Customized to the topic of each particular seminar.

#### **EDU 688 Seminar in Current Trends in Special and Inclusive Education (6 ECTS)**

The content will vary, depending on the current trends in the field of special and inclusive education. Examples of possible topics for seminars:

- Policy reforms in special and inclusive education.
- The power of the special education discourse.
- Examples of good practice in inclusive education.

#### **EDU 689 Independent Study (12 ECTS)**

Students conduct an Independent Study, which resembles the process of writing an empirical or a theoretical master thesis. The topic selected is of students own interest, as long as it falls within the fields of their program of study.

#### **EDU 693 Contemporary Trends in the Study of Teaching (12 ECTS)**

It examines the parameters that, according to contemporary research and literature, determine quality in teaching through modern and post-modern approaches. The various methodological approaches are critically examined through the criterion of their suitability for specific educational work and teaching to/with a particular student population. The components of a lesson plan are analysed along with decisions about their implementation, teaching methods, classroom organization, how students work, the role of the teacher as a facilitator of learning, the assessment and self-assessment of the lesson. The theory of constructivism, cooperative learning and the differentiation of teaching - learning in mixed ability classes are particularly examined. It also examines the teaching of subjects that have a particular place in the curriculum, such as critical thinking, metacognition, creative thinking, teaching through narration drama and play, interdisciplinarity and cross-curricularly, as well as general and specific skills.

#### **EDU 751 Design of Research Proposals (12 ECTS)**

Identification of real problems that are amenable to productive investigation. Formulation of research questions or hypotheses that are open to investigation based on evidence. Projects as part of wider programmes of research. Literature review. Identifying and labelling variables, constructing operational definitions. Research design. Reliability and validity. Approaches to data collection and analysis. The implementation of research findings in practice. The theoretical and educational implications of research.

#### **EDU 752 Analysis and Implementation of Research Evidence (12 ECTS)**

Multiple interpretations of research data. The complementarity of qualitative and quantitative approaches to data analysis. The selection of appropriate analytical techniques in relation to specific research objectives and data constraints. Validity and reliability of research findings. Critical analysis of research reports. Generalization of research findings to wider populations. Open questions for research and current research trends. Complementarity in different research approaches.

#### **EDU 753 Models of Teaching and Didactical Recontextualization of the Content of Natural Sciences (12 ECTS)**

Principles of designing learning environments in physical science. School knowledge and its relation to children's ideas and the structure and content of the discipline. Informal and non-formal approaches to science education. Developmental appropriateness in the objectives of science learning. The role of curriculum resources in effective teaching interventions. Teacher preparation in science.

### **EDU 780 Using Basic and Advanced Multilevel Modeling in Educational Research (12 ECTS)**

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Multilevel theories, Multi-stage sampling and Multi-level models; The Random intercept model; The hierarchical linear models; Testing and model specification; Assumptions of the hierarchical linear models; Designing Multilevel studies; Crossed random coefficients; Multivariate multilevel models; Non-linear multilevel models; Binary response models; Multilevel logistic regression; Random slope multilevel logistic regression models; Multilevel Factor Analysis and Multilevel structural equation models.

### **EDU 787 Academic Writing (12 ECTS)**

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The course unfolds in five units. The first unit, which serves as the introduction to this course, focuses on familiarizing students with the structure and the basic characteristics of academic writing (as opposed to other types of writing). Students will also work on developing and sharpening/shaping a compelling research question, which comprises the building block for effective research work. The second unit revolves around reviewing and critically synthesizing existing studies. In the context of this unit, students will first be familiarized with the steps involved in writing effective literature reviews (searching the literature, critically reviewing, and synthesizing the literature). They will also use this work to revise their research question(s). The third unit focuses on writing the methods and the results sections in ways that are informative and easy to follow for different types of audiences. The fourth section focuses on writing compelling discussion sections that draw upon and are informed by the study findings as well as on writing effective and concise abstracts and introductions. These parts are left last because they are typically among the hardest to write. The fifth section discusses more general issues including differences among various types of academic writing (thesis, journal paper, conference paper); APA writing conventions; and tips/strategies for effective academic writing (e.g. issues of the frequency of writing and finding a balance between writing and reading).

### **EDU 788 Advanced Research Methods (12 ECTS)**

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Research design, Review of Regression Analysis, Basic functions of Structural Equation Modelling, Review of Exploratory Factor Analysis, Confirmatory Factor Analysis (First-order CFA model, CFA models with Higher-Order factors), The Multi-trait Multi-method model, The Full Latent Variable model, Growth Modelling, Logistic Modelling, Multiple-Group Analyses (Testing for invariant factorial structure of a theoretical construct, Testing for invariant latent mean structure, Testing for Invariant Causal Structure), Item Response Theory, Rasch measurement models (The dichotomous Rasch Model, Partial Credit Model, Rating scale analysis)

### • Panayiotis Antoniou, Lecturer

Educational Management and School Leadership, Human Resource Management in Education, Teacher Evaluation and Appraisal, Program and School Evaluation, Student Formative Assessment, Value-added assessment, Factors influencing the development of educational policy at various levels, The impact of school leadership on student outcomes.

### • Charalambos Charalambous, Assistant Professor

Research focuses on: Assessing/measuring the quality of teaching with emphasis on high-leverage teaching practices and the cognitive level of the tasks implemented during instruction; factors contributing to educational effectiveness, including teacher knowledge and curriculum materials and their use; quantitative and qualitative research in exploring the quality of teaching; quality of teaching and student learning.

### • Miranda Christou, Associate Professor

The role of educational systems in shaping questions of history and collective memory, pedagogical role of media representations of human pain and suffering, education and globalization, gender and education.

### • Constantinos Constantinou, Professor

The physics curriculum in secondary and tertiary education, the content of the science curriculum at the elementary level, educational technology with particular emphasis on the use of the computer as a cognitive tool and an educational medium, curriculum integration and creativity in the domain of science education.

### • Iliada Elia, Associate Professor

Mathematical problem solving, understanding of geometrical figures, the semiotic approach to learning mathematics especially in primary education, picture books and development of mathematical concepts, the role of gestures in the understanding of mathematical concepts by young children.

### • Stavros S. Fotiou, Professor

Christian education, christian ethics, sociology of christianity, methodology of teaching, attitudes toward christian education.

### • Zelia Gregoriou, Associate Professor

Philosophy of education (in particular, post-structuralist analysis of pedagogical discourses and educational practices; negotiation of cultural identities in educational contexts with regard to phenomena of diaspora, globalization and multiculturalism; postcolonial theory and education; theory and politics of multicultural education; performativity; mourning and/as memorialization.

### • Elena Ioannidou, Associate Professor

Language pedagogy, language education policy, bidialectalism and education, developing multicompetence through language teaching, interrelations of language and identity, multilingualism and multiculturalism in education.

### • Eleftherios Klerides, Assistant Professor

Global governance and international development, European education policy and reform, international relations and educational transfer, colonialism and neo-colonialism, the

discursive construction of identities and subjectivities, education in the Mediterranean and Southeast Europe, textbook theory and research, History of education in colonial Cyprus.

### • Stavroula Kontovourki, Assistant Professor

Research interests include: Literacy and language arts education, use of socio-cultural and post-structural theoretical approaches and qualitative research methodology for the examination of literacy development and literacy practices, the performance of literate identities in and out of school, multimodality (textual and embodied), and the realization of literacy curricula in elementary classrooms.

### • Konstantinos Korfiatis, Associate Professor

Methodology of environmental education projects, conceptual difficulties in ecology, evaluation of learning material, conceptual change and worldview theories, history and philosophy of science with an emphasis in biological sciences.

### • Leonidas Kyriakides, Professor

School effectiveness and school improvement, baseline and value-added assessment, school self-evaluation, integrating formative and summative functions of educational evaluation, strategies for investigating construct validity.

### • Eleni Loizou, Professor

Research interests include: Young children's humor and its impact on learning; involvement and empowerment of young children, teachers and parents in educational processes; language and early literacy; early childhood curriculum; infant, toddler development and practice, and teacher education.

### • Maria Eliophotou-Menon, Professor

The use of rates of return in educational management, the influence of economic and sociological factors on the demand for higher education, factors influencing educational policy, and pre-service teachers' expectations with respect to school organization and management.

### • Demetra Pitta-Pantazi, Professor

Understanding the structure of mathematical thinking, Cognitive development of mathematical concepts, Integration of new technologies in mathematics teaching and learning, Mathematical creativity, Identification and nurturing of mathematically gifted students, Cognitive styles and mathematical abilities, Mathematics teacher education.

### • Marios Pittalis, Lecturer

Young student's functional thinking, early algebraic thinking, number sense development, digital tools in mathematics teaching and learning, embodied instrumentation with digital tools, curriculum development, mathematics textbooks and digital resources design, 3d-geometry thinking and spatial ability, problem solving and posing, mathematical modeling

### • Marianna Papastephanou, Professor

The modernism vs. postmodernism debate in philosophy of education, knowledge interests and learning. Theories of subjectivity, language and culture and their application to education, social and critical theory of the Frankfurt School.

• **Stavroula Philippou, Assistant Professor**

Research interests include: Curriculum development; Theory and methodology of teaching; Theory, history and sociology of curriculum; Teacher professional identity and official curricula; Action research; Curriculum studies; European education policy and curriculum; National and European identity/citizenship in education; Social studies education; Citizenship education.

• **Helen Phtiaka, Professor**

Educational legislation, policy and practice, the notion of difference in education, disability, inclusive education, globalisation.

• **Simoni Symeonidou, Associate Professor**

History, policy and practice of inclusive education in Cyprus and in other countries, Inclusive education and the curriculum, Inclusive education pedagogy, Teacher education for inclusion, Disability studies in education, disability studies.

• **Niki Tsangaridou, Professor**

Reflective teaching, Teachers' knowledge, Teachers' beliefs, Effective teaching, Instructional and curriculum models in physical education.

• **Charoula Angeli-Valanides, Professor**

The utilization of educational technologies in K-12, the design of computer-enhanced curricula, educational software design, teacher training, teaching methodology, online learning, and the design of learning environments for the development of thinking skills.

• **Zacharias Zacharia, Professor**

The use of computer-based simulations and inquiry-based experimentation as cognitive tools in science teaching and learning, the development of computer-enhanced curriculum in science, and their promotion.

## Contact Details

### DEPARTMENT SECRETARIAT

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# Department of Law

www.ucy.ac.cy/law

The mission of the Department is to provide quality legal education to the students and the legal world of Cyprus. The Department of Law is pioneer in the research and study of Cyprus law and its development within the European context.

The Department offers a Master of Law (LL.M.) programme and a Ph.D in Law.

## Introduction

The Department of Law was founded in 2006. The study of Law in the Department encourages critical legal thinking, through a combination of theory, specialist knowledge and practical spirit. The Department also promotes research. It has strong presence in international, European and domestic research activities – especially in the fields of Criminal Sciences and Criminal Law, Business Law and Company Law, International Law, European Law, Human Rights Law, International and European Private Law, Competition Law and Banking Law, Intellectual Property Law, Internet Law, Environmental Law, Energy Law.

## Postgraduate Studies in Law

The first postgraduate programmes in Law focus on International and European Law. European integration is impacting every aspect of Member State law, highlighting the need to study the various legal systems, and to understand their relevance to Cypriot law. These Programmes also build on the concentrated strength of the Department's faculty members.

The goals of the Programmes, inter alia, are:

- To provide advanced legal studies to the legal world of Cyprus, and the surrounding area.
- To offer specialized study of the international legal system and European integration, including their impact on the transformation of Cyprus Law, and other legal systems.
- To optimize the Department's contribution to the development of Cyprus Law.

## Courses Description

### **NOM 511 Criminal Law and Human Rights (15 ECTS)**

The course focuses on the defendant's –broadly approached– "participation" in criminal trial and the way in which the latter radically influences the nature of modern criminal procedure. Being the "protagonist" of the criminal process, the defendant is provided with the right to a "fair trial", a useful abbreviation to describe various, distinct rights, privileges and immunities recognized to him as suspect and/or accused person, during the pre-trial and the trial stage of the criminal process. The presumption of innocence, the right of non discrimination, the right to remain silent, the right to information, translation and interpretation in criminal proceedings, the right to access a lawyer and to be given ordinary legal aid, the right to appeal as well as the corresponding legal and moral duties, arising on the side of the prosecuting State shall be discussed in a detailed manner, with reference to the relevant national and international

normative sources (Cap. 155, Constitution, EU Directives 2010/64, 2012/13, 2016/343, ECHR). Emphasis shall be also given to possible "rights" to be recognized on the side of the Prosecuting Authorities, because of the adversarial nature of the common-law criminal procedural model. Last, but not least, criminal evidence issues having an impact on procedural rights as well as issues of legal burden of proof and reverse onus issues, will also constitute part of the material to be discussed in the course.

### **NOM 512 Law of the European Convention on Human Rights (15 ECTS)**

The European Convention on Human Rights (ECHR), basic "constitutional instrument in the European public order", is one of the most successful regimes for protection of human rights in the world today, and at the same time its judicial body the European Court of Human Rights (ECtHR) has also established itself as the most effective human rights mechanism in Europe, and, arguably, in the world. The main purpose of this course is to provide an overview of the protection of human rights and fundamental freedoms guaranteed by the ECHR. Students will be taught the background and context of the Convention, its status in Europe and the world, the Convention's relationship to other international instruments, as well as its substance, procedure and application in practice. Special emphasis will be placed on the achievements and challenges of the system as well as the problems that it currently faces. Within the framework of this course, students will have with a thorough understanding of the law of the Convention and will familiarize themselves with the practical application of the basic procedural and substantive articles and Protocols of the Convention.

### **NOM 513 Gender and Human Rights (15 ECTS)**

This course focuses on the concepts of gender, equality, and non-discrimination under (international) human rights law. It examines the critical and feminist approaches to human rights law, the issue of cultural relativism as well as the legal principles of equality and non-discrimination, focusing on gender equality at international, European, comparative and domestic levels. The course also examines various issues by reference to the most important human rights treaties such as the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the case law of the European Court of Human Rights, the relevant legislation of Cyprus and case law of the Supreme Court of Cyprus. More specifically, the course examines issues of discrimination, crimes and violence against women, focusing on the Istanbul Convention on preventing and combatting violence against women and domestic violence, human trafficking, reproductive rights such as abortion and medically assisted procreation, parental rights and children rights, (de)criminalization of sexual work, as well as recent developments relating to the rights of LGBTI persons.

### **NOM 517 Criminal Law Theory (15 ECTS)**

The course aims at deepening into the fundamentals of criminal law responsibility. It analyzes the conditions of imputation, like the notion of the act, causality and objective imputation, as well

as the logic underpinning the institution of defences. It analyses further the differences between wrongfulness of the behavior and objective wrong, whereby the respective theories are critically scrutinized under a law-philosophical, doctrinal and law-political viewpoint. Further are analyzed the internalization of criminal law and the problems the classical concept of the state's right/obligation to punish ('jus puniendi') is confronted with. Finally, a significant part of the course is dedicated to the fields of guilt and aims of punishment.

#### **NOM 519 Applied and Forensic Criminology (15 ECTS)**

A basic goal of the course is for the student to acquire adequate applied knowledge concerning the aetiology of and how best to prevent such serious crimes as robbery, rape, murder, mass murder, crimes against the environment, and economic crime. Another basic aim of the course is to impart sufficient knowledge about Forensic Criminology, namely: its development and contribution to criminal investigation, focusing on modern methods (including offender profiling and crime mapping). Finally, the role of Forensic Criminology and the expert forensic criminologist today in a court of law shall also be addressed.

#### **NOM 522 International Commercial Law and Dispute Resolution (15 ECTS)**

The legal treatment of modern commercial transactions provides the best example of both the influence and the limits of the so-called globalisation. Especially in some subjects of international commercial law, the basic sources are international - deriving from either intergovernmental or nongovernmental international organisations. In the case of Cyprus law, this international character also informs "domestic" commercial law, which is built upon English commercial law. This course is divided in three parts. The first part is an introduction to international business law with an emphasis on concepts, subjects and sources of the field as well as its distinct methodology and disciplinary identity. The second part addresses the substantive law of international commercial transactions (international sale and carriage of goods; financing and secured transactions). The third and largest part addresses the resolution of international commercial disputes, placing emphasis on international commercial litigation and arbitration.

#### **NOM 523 European Intellectual Property Law (15 ECTS)**

The module aims to analyze the basic rules and principles of European intellectual property law. It is divided in five parts. The first part is dedicated to the basic principles that make up the common body of regulation of all the categories of intangible property (justification of protection, protection of intellectual property under the European Convention of Human Rights, free movement of intangible goods in the internal market, intellectual property law and competition law, common features of intangible goods, presentation of the basic categories of intangible goods). In the second, third and fourth parts the analysis focuses respectively to the protection of the three main categories of intangible goods: copyright protected works, trademarks and patents. In the fifth part, basic principles of protection of other forms of intellectual property are examined and in particular the legal protection of the geographical indications and industrial designs.

All the parts are analyzed in the light of the balancing of intellectual property protection with other rights and interests (restrictions or exceptions, freedom of expression etc.), while emphasizing the challenges brought by the new technologies and the judicial protection mechanisms (enforcement of intellectual property rights).

#### **NOM 524 European Company Law (15 ECTS)**

The aim of this course is to analyze the foundations of European Company Law. In the first part, corporate mobility in the EU is analyzed. More specifically, emphasis would be given on corporate mobility and on the freedom of establishment of companies in the context of the internal market. Seat transfers, the freedom of establishment of companies and the relevant case law of the CJEU would be scrutinized. Additionally, cross-border mergers and acquisitions would be examined in detail within this framework. The second part analyzes the Company Law Directives and their impact on national laws, as well as the status of the European Company (Societas Europaea). Moreover, perspectives on further harmonization are being discussed. The third part examines special issues, such as regulatory competition, privatizations and golden shares, unharmonized areas of company law, interaction between employment law and company law, EEIG, relations between European company law and insolvency law, financial law and capital markets law, shareholders' rights and minority protection, market abuse rules, etc. The fourth part analyzes various corporate governance models, corporate governance of banking and financial institutions and EU initiatives in this area in the light of a comparative approach.

#### **NOM 525 Banking Contracts and Consumer Protection (15 ECTS)**

The course analyses the provisions on protection of consumers as recipients of financial products and services. Emphasis is placed on both special EU legislation on banking contracts (e.g. Directive 2014/17/EU on mortgage credit, Directive 2008/48/EC on consumer credit, Directive 2002/65/EC on distant selling of financial products) and on special cases of horizontal pieces of EU legislation (e.g. Directive 93/13/EEC on unfair contractual terms, Directive 2005/29/EC on unfair commercial practices etc.). At the same time, mention is made to fundamentals of the banking system in general and banking contracts in particular (such as the legal nature and consequences of the bank-client relationship, basic categories of bank accounts, categories of loan rates etc.), as well as the notion and characteristics of 'consumer'. There are also lectures dedicated to dispute resolution, both judicial and alternative. During the lectures, case law and problem cases are discussed, with special emphasis on current affairs.

#### **NOM 531 European Public Law (15 ECTS)**

The course focuses on the autonomous study of European Public Law (EPL) and examines the nature, implementation and constraints of its operation as a supranational legal phenomenon. In particular, the teaching method focuses on the theoretical ontological approach and examines whether the existence of the EPL is fictitious and/or legally substantive. It also examines the characteristics of the EPL system as derived from the two-way influence relationship between the EU, the ECHR and the national constitutional legal orders. The analysis focuses on the role of judicial authorities in relation to the evolution of the EPL. In addition, the applications of and constraints on EPL in various areas (Proportionality, Natural Justice, duty to give reasons, human rights protection, national constitutional law and European integration, judicial control and public law) are analyzed.

#### **NOM 532 Environmental Law (15 ECTS)**

The European Union (EU) has over the years engaged in extensive environmental policy action and developed considerable legislation that significantly influences both the policies of its member states, as well as legal developments in third countries and international organisations. This course aims to provide a thorough understanding of EU Environmental Law including the

foundations of EU environmental law (such as EU competences in this field, environmental principles and public participation in environmental matters) and key legislation adopted in substantive policy areas (such as pollution control of waste and water and the regulation of climate change). Throughout the course, we will explore different kinds of regulation to environmental problems, including economic incentive instruments, such as emissions trading, and more traditional command and control regulation. In making these regulatory choices, we will see how environmental principles guide decision-making and are often reflected in legislation. Furthermore, in studying EU environmental law, we will start identifying the multi-level governance involved in environmental law both within and outside the EU, with division of powers being shared between the EU and member states, and EU environmental law coexisting and dynamically interacting with international environmental law.

### **NOM 535 International and EU Energy law (15 ECTS)**

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The module provides an in-depth understanding of the regulatory and institutional framework on an international and EU level in the field of energy. In this context, the relevant basic notions (sources in the energy mix and characteristics of the energy markets), actors and legal sources will be presented in the introduction. A first part of the module will, then, be dedicated to international energy law, starting with fundamental legal concepts, among which permanent sovereignty over natural resources and sustainable development. The focus will subsequently shift to energy trade in the context of the WTO, energy activities within the national jurisdiction as well as the consequences of such activities on the environment and on human rights. The second part of the module will focus on the European Union as an actor in the field. After discussing the EU's competence and the evolution of its energy policy, the course will examine three basic dimensions of said policy: the internal energy market, sustainability and security of supply.

• **Michael Chatzipanagiotis, Lecturer**

Consumer protection, Intellectual property rights, Legal aspects of artificial intelligence, Air and space law, Banking law, Torts, alternative dispute resolution.

• **Aristoteles Constantinides, Associate Professor**

Law of the United Nations (with emphasis on the Security Council), International security, International development cooperation, International protection of human rights, the Cyprus problem, International law in domestic legal orders.

• **Nikitas Hatzimihail, Associate Professor**

Private international law, International civil litigation and commercial arbitration; International business and trade law. Comparative law and intellectual legal history (with emphasis on the western legal tradition, mixed legal systems, the law of the United States). General principles of private law, Contract law, European private law; Theory and comparative history of private law.

• **Ioanna Hadjiyianni, Lecturer**

Law of the European Union: Constitutional, administrative, external relations, Environmental and Climate Change Law, International Environmental Law, Law of the World Trade Organization.

• **Constantinos Kombos, Associate Professor**

EU Law (Procedural, Institutional, Substantive, Constitutional), Cypriot constitutional law, English constitutional law, Comparative constitutional law, European public law, Legal theory and judicial approach.

• **Charalambos Papacharalambous, Associate Professor**

Criminal law, Criminal procedure, Legal theory, Critical theory of criminal law, International criminal law, Organized crime, Criminal protection of human rights.

• **Thomas Papadopoulos, Assistant Professor**

Commercial law, Company law and corporate governance, Financial law, Capital markets law-securities regulation, Competition law, Insolvency law, Banking law, EU law, Internal market law and European economic law.

• **Costas Paraskeva, Assistant Professor**

International protection of human rights, Cypriot constitutional law, Cypriot administrative law, European convention of human rights.

• **Tatiana-Eleni Synodinou, Associate Professor**

Private law, Intellectual property law, Media law, Computer Law/Internet law, Commercial law, Company law, Land law.

• **Kostantinos Tsinas, Lecturer**

Criminal law, Criminal procedure & evidence, Legal reasoning, Statutory interpretation Logic - argumentation and the law

• **Andreas Kapardis, Emeritus Professor**

Criminology, Legal psychology, Sentencing, Criminal law.

• **Charikleia Vlahou, Lecturer**

EU energy law, Electronic communications law, Regulated Industries, Competition law, European Administrative law

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# Department of Psychology

[www.ucy.ac.cy/psych](http://www.ucy.ac.cy/psych)

The Psychology Department currently offers postgraduate programmes leading to the Master degree in the areas of:

- Applied Programme in School Psychology
- Theoretical Programme in Cognitive Educational Psychology
- Theoretical Programme in Social Developmental Psychology
- School Counselling and Guidance  
(Joint Programme with the University of Athens)
- Cognitive Systems  
(Joint Programme with the Open University of Cyprus)

Students may apply for admission to one of two tracks: The research/theoretical track (Cognitive Educational or Social Developmental), which entitles them to continue their studies at Ph.D. level; the professional practice track (APSC), which allows them to register and work as professional school psychologists. For admission into the APSC track, an undergraduate degree in Psychology is a requirement.

The Department also offers two Doctoral programmes, that result in a Doctorate of Philosophy:

- Doctorate in Psychology
- Doctorate in Clinical Psychology

## Admission Requirements

For information on the application procedure and admission requirements, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department’s Secretariat.

In addition to the general requirements, candidates are requested to submit any certificates and/or other documentation that prove fluency in the English language, and any other documentation they consider necessary to strengthen and further support their application for admission, such as articles, research reports, academic distinctions, and any other relevant information.

### APPLIED MASTER DEGREE IN SCHOOL PSYCHOLOGY

#### Description

The Master in School Psychology is a three-year programme comprising 180 ECTS that includes supervised clinical training (60 ECTS or 1500 hours). The Programme was created based on the current professional demands and trends in the education and clinical training of professional psychologists and school psychologists. Furthermore, the Programme ensures that the graduates are eligible to become licensed in Cyprus in accordance with the Cyprus Law for Professional Psychologists, and, in Europe, according to the published European Directive. The Programme also gives the option for continuing graduate studies on a Doctorate level.

The Programme is primarily based on the professional psychologists model of education. Consequently, it emphasizes the development of professional skills for the practice of psychology, while offering a wider theoretical

and research background to the graduate student. During the first year of studies, the Programme aims to provide the student with the necessary theoretical and methodological background of psychological knowledge. In the second year, the Programme consists of specialized coursework, that will help the student develop important clinical and professional skills in the area of psychological assessment and intervention. The third and last year of the Programme allows the student to integrate theory and practice and it centers on clinical training via clinical internship practica, combined with professional seminars and graduate research. Furthermore, students who wish to gain research knowledge and skills beyond what the Programme requires, have the opportunity to take additional independent research with extra ECTS and complete a Master's thesis. This is recommended for students who are considering pursuing a Doctoral degree in the future.

According to the Cyprus law, a school psychologist must fulfill the required qualifications (academic and clinical) in order to be included in the official registry of the Cyprus Professional Psychologists. The applied programme requires specialized skills and knowledge that enable the assessment and prevention of, and intervention in, psychological and learning problems. Furthermore, in the context of an applied programme, it is expected that the graduate student will acquire the methodological knowledge and research skills required to evaluate intervention and prevention programmes. Finally, an essential part of the education of a school psychologist is the gradual development of professional skills through the supervised clinical practicum and, thus, the graduate student is required to complete at least 1500 hours of supervised clinical practicum in appropriate professional settings before graduating.

## Structure

The Programme comprises 12 Compulsory Courses and 8 Elective Courses, each corresponding to 7.5 ECTS, a compulsory graduate research study sequence (7.5 ECTS), a Clinical Practicum sequence (60 ECTS) and the final Comprehensive Examination of professional knowledge.

	ECTS
<b>Compulsory Courses</b>	<b>90</b>
PSY 601 Ethical and Professional Topics in Educational Psychology	7.5
PSY 604 Multivariate Statistics for the Behavioral Sciences	7.5
PSY 614 Psychological Interventions in the Schools I	7.5
PSY 615 Early Diagnosis and Interventions for Reading Disabilities	7.5
PSY617 Counselling Psychology	7.5
PSY 619 Intelligence: Development and Evaluation	7.5
PSY 642 Child and Adolescent Psychopathology	7.5
PSY 701 Psychology of Teaching	7.5
PSY 705 Diagnostic Intellectual Assessment of Children and Adolescents	7.5
PSY 708 Analysis and Behavior Modification	7.5
PSY 714 Psychological Interventions in the Schools II	7.5
PSY 716 Basic Clinical Skills	7.5
<b>Compulsory Clinical Practicum</b>	<b>60</b>
PSY 698 Clinical Practicum Seminar I	5
PSY 699 Clinical Practicum Seminar II	27.5
PSY 700 Clinical Practicum Seminar III	27.5
<b>Compulsory Graduate Research Study</b>	<b>7.5</b>
PSY 622 Graduate Research Study I	2.5
PSY 623 Graduate Research Study II	2.5
PSY 624 Graduate Research Study III	2.5
<b>OR Elective Graduate Research Study (additional to the 180 ECTS)</b>	
PSY 625 Graduate Research Study	7.5
PSY 626 Graduate Research Study	7.5
PSY 627 Graduate Research Study	7.5
<b>PROFESSIONAL COMPREHENSIVE EXAMINATION IN SCHOOL PSYCHOLOGY</b>	
PSY 688 Professional Comprehensive Examination in School Psychology	0
<b>Elective Courses</b>	
<b>I. Theoretical Background of Psychology</b>	<b>60</b>
PSY 603 Child and Adolescent Psychopharmacology	7.5
PSY 711 Psychopharmacology	7.5
PSY 730 Neuropsychological Assessment	7.5
PSY 637 Social Development and Social Settings	7.5
PSY 746 Social Psychology Of Education	7.5
PSY 722 Cross-Cultural Issues In Psychology	7.5
PSY 715 Language Development and Language Disorders	7.5
PSY 610 Psychology of Education	7.5

## Supervised Clinical Practicum

During the supervised clinical practicum year, students will be placed in a public or private Psychological Centre, approved by the Department, where they can be supervised by a qualified and licensed psychologist. The Clinical Practicum comprises two phases. Phase one (approximately 200 hours) is a part-time placement and is completed during the fourth semester of studies concurrently with the Clinical Practicum. During this phase, students are expected to observe experienced and licensed psychologists performing their various professional activities and at the same time become familiar with the school system and the psychological methods of assessment and intervention. Phase two (approximately 1300 hours) is a full-time clinical placement, taking place during the third year of studies in parallel with the corresponding courses Clinical Practicum Seminars II (fall semester) and III (spring semester). During this phase, the student is expected to participate in case assessments and intervention programmes, as well as to engage in prevention programmes under the supervision of licensed psychologists. The supervision and development of clinical skills is an individualized process and student clinicians will have weekly meetings with their supervisor to discuss their skill development. Students will be evaluated by their Supervisor, the Clinical Practicum Coordinator and the Department of Psychology through Clinical Practicum Seminars I, II and III.

## Graduate Research Study/Master's Thesis

The participation in a graduate research study is required for all students in the School Psychology programme. The goal of the research participation is to help students develop skills that will allow them not only to read research critically but also to design and produce clinical research. These skills are necessary for students who wish to continue their studies at a Doctoral level. Students are required to complete 7.5 ECTS of graduate research study, under the supervision of a faculty member (D.E.P.) or other research-instructive staff. The research project, which must be brief (e.g. an extended case study or a small empirical research article) but of high quality (be publishable), according to the judgment of a three-member examining committee of the Department. The 7.5 required ECTS are distributed over 3 semesters, so that sufficient time is allowed for the development and execution of a research proposal.

Students have the possibility to select up to 30 ECTS, of which only 7.5 are compulsory, for the completion of the Master's programme. The elaboration of a complete and extended Master's thesis is optional for students on the professional track. It requires a supervisor who is necessarily a member of D.E.P.

A full Master's thesis is carried out in two or three semesters as follows: PSY 742 Master's Thesis I (15 ECTS), PSY 743 Master's Thesis IIA (15 ECTS) and PSY 744 Master Thesis IIB (15 ECTS). In case the Thesis is not completed in the third semester, the students have to enroll in PSY 745 Continuation of Master Thesis (optional). Course PSY 742

is prerequisite for course PSY 743; course PSY 743 is prerequisite for course PSY 744. Students on the professional track who choose to complete a Master's thesis are credited with 45 ECTS (that is, they need more credits to graduate than those who do not complete a Master's thesis). The completion of a Master's thesis is recommended for students interested in continuing their studies at a Doctoral level. Students who choose to carry out a thesis will be exempt from the research study course sequence (a total of 7.5 ECTS).

### Monitoring of Progress

At the end of each year in the School Psychology programme, members of the clinical faculty (D.E.P.) of the Department, together with the Clinical Practicum Coordinator, evaluate the progress of each student in the following areas: a) Course performance, b) performance in the clinical practicum, c) ethical and professional conduct, d) progress and performance in research, e) personal development. The student will receive written or oral feedback on his/her progress, that will include mention of the areas of strength and areas for further development.

### Portfolio

During their professional training, students must create a portfolio including at least the following: a) Curriculum Vitae, b) Personal Statement that focuses on the process of introspection and self-criticism regarding their strengths and weaknesses and refers to their professional goals, c) three samples of psychological reports, and d) two written samples of psychological intervention cases.

### PSY 688 Professional Comprehensive Examination in School Psychology

In order to graduate, students must successfully pass the professional comprehensive examination, which they may take when: (1) they have adequately completed their portfolio; (2) they have provided evidence that they have completed at least 1500 hours of supervised clinical practicum; and (3) they have fulfilled the goals of the clinical practicum as these are described in specific materials provided by the Department's Clinical Practicum Coordinator.

The examination will be given orally and on an individual basis before a Three-Member Committee of professional psychologists. Specifically, the Committee will consist of the Clinical Practicum Coordinator, a member of the Department's faculty and an invited member. The examination aims to evaluate the professional knowledge of the students in case management and, consequently, their readiness to practice as psychologists in an ethical, legal and professional manner. The examination will be evaluated as Pass/Fail and the grade will appear on the student's transcript. In case of failure, the Department may ask the student to engage in further academic activities and/or additional supervised clinical practicum, if necessary. The student will be allowed to retake the examination up to two more times in corresponding exam periods.

**Fees: €5.125**

**Fee for supervised practicum: €1.000\***

**Total cost of programme: €6.125**

\* In addition to the standard fees for the applied programme in School Psychology, a fee of €1000 is added for the supervised clinical practicum which is utilized for acquiring supervision services from registered professional psychologists.

### Programme of Studies

	ECTS
<b>First Year</b>	
<b>Fall Semester</b>	
PSY 601 Ethical and Professional Topics in Educational Psychology	7.5
PSY 637 Social Development and Social Settings or PSY 722 Cross-Cultural Issues in Psychology or PSY 746 Social Psychology of Education	7.5
PSY 705 Diagnostic Intellectual Assessment of Children and Adolescents	7.5
PSY 716 Basic Clinical Skills	7.5
<b>Total</b>	<b>30</b>
<b>Summer Semester</b>	
PSY 742 Master Thesis I	15.0
<b>Spring Semester</b>	
PSY 603 Child and Adolescent Psychopharmacology or PSY 711 Psychopharmacology or PSY 730 Neuropsychological Assessment	7.5
PSY 604 Multivariate Statistics for the Behavioural Sciences	7.5
PSY 642 Child and Adolescent Psychopathology	7.5
PSY 701 Psychology of Instruction	7.5
<b>Total</b>	<b>30</b>
<b>Second Year</b>	
<b>Fall Semester</b>	
PSY 614 Psychological Interventions in the Schools I	7.5
PSY 615 Early Diagnosis and Intervention of Reading Disabilities	7.5
PSY 617 Counselling Psychology	7.5
PSY 619 Intelligence: Development and Education	7.5
<b>Total</b>	<b>30</b>
<b>Spring Semester</b>	
PSY 610 Psychology of Education or PSY 715 Language Development and Language Disorders	7.5
PSY 622 Graduate Research Study I	2.5
PSY 698 Clinical Practicum Seminar I	5
PSY 708 Analysis and Modification Behaviour	7.5
PSY 714 Psychological Interventions in the Schools II	7.5
<b>Total</b>	<b>30</b>

<b>Summer Semester</b>	
PSY 743 Master Thesis IIA	15.0
<b>Third Year</b>	
<b>Fall Semester</b>	
PSY 623 Graduate Research Study II or PSY 744 Master Thesis II B	2.5
PSY 699 Clinical Practicum Seminar II	27.5
<b>Total</b>	<b>30</b>
<b>Spring Semester</b>	
PSY 624 Graduate Study III	2.5
PSY 688 Professional Comprehensive Examination in School Psychology	0
PSY 700 Clinical Practicum Seminar III	27.5
<b>Total</b>	<b>30</b>
<b>Total Compulsory Academic ECTS</b>	<b>112.5</b>
<b>Total Compulsory Applied/Clinical ECTS</b>	<b>60</b>
<b>Total Compulsory Research ECTS</b>	<b>7.5</b>

## Courses Description

All courses are credited with 7.5 ECTS.

### **PSY 601 Ethical and Professional Topics in Educational Psychology (7.5 ECTS)**

The psychologist's ethical code related to applied psychology will be discussed. Ethical dilemmas (double relationships, presents, confidentiality, duty to protect), and legislative issues regarding assessment, treatment and special education will be presented. Other issues include legislature regarding the profession, professional endorsement, cooperation with other professionals and organisation of Educational Psychology as a field.

### **PSY 603 Child and Adolescent Psychopharmacology (7.5 ECTS)**

Basic psychopharmacology with special emphasis on the medications that are most often prescribed to children and adolescents, their action and their consequences. Review of the neurological basis of functions such as memory, attention, and emotion with emphasis on the neurochemistry of the above functions and psychological dysfunction. Presentation of topics such as organic basis of attention difficulties, aggression, depression, eating disorders, etc., and current research on the effectiveness of psychological drugs.

### **PSY 604 Multivariate Statistics for the Behavioural Sciences (7.5 ECTS)**

The course is designed to provide an integrated, in-depth and applied approach to multivariate data analysis and linear statistical models in psychological research. The focus will be on practical issues such as selecting the appropriate measures of analysis, preparing data for analysis, performing the analysis with SPSS, interpreting output and presenting research results. This course will provide an overview of some of the most common multivariate methods, namely: exploratory factor analysis, analysis of variance and covariance, multivariate analysis of variance and covariance, multiple regression, mediation and moderation. The course will strongly emphasize the applications of multivariate methods, rather than their theoretical derivation. All multivariate procedures will be discussed with reference to research designs and interpreted in a practical manner.

### **PSY 605 Psychometrics (7.5 ECTS)**

This course is an overview of psychological tests and test construction, psychometric theories of intelligence, educational achievement, personality assessment and specific symptom assessment. It focuses on how to develop the assessment question and select the strategies and measures to answer it. The course also examines the impact of cultural diversity on assessment and identifies strategies to screen student populations for common issues, such as learning difficulties and emotional disorders. It includes topics on testing specific populations and for specific problems, and explains how test materials are integrated with clinical interviews and other assessment data.

### **PSY 610 Psychology of Education (7.5 ECTS)**

This course presents the contribution that psychological research can make to educational practice and discusses relevant issues that concern classroom educators. It critically examines contemporary theories of human development and learning, in order to apply this knowledge in educational settings and situations. Additionally, it examines topics such as individual differences, home/school relations and cooperation among the educational psychologist, teachers and parents.

### **PSY 614 Psychological Interventions in the Schools I (7.5 ECTS)**

The course will focus on contemporary, empirically validated treatments for children and families and for classroom-based interventions in collaboration with the teacher. Interventions will include psycho-educational approaches, counseling, cognitive-behavioral and other scientifically based methods, with emphasis on their specific application in the school context.

### **PSY 615 Early Diagnosis and Intervention of Reading Disabilities (7.5 ECTS)**

This course is offered to both Master and Doctoral students who have a strong background in learning disabilities. It addresses a number of issues including: review of recent research and literature in the field of learning disabilities; examination of research and theory as they relate to current practices; overview of psychological processes in learning to read; relationships among language processes, intellectual processes, and reading processes in beginning and skilled readers; common causes of reading disabilities and the biological or psychological etiologies associated with them; advanced research-based diagnostic assessment; and individual and group interventions for learners with such disabilities (including practice in diagnosis and treatment of case studies). Students, therefore, learn to (a) assess and identify specific reading disabilities and their implications for development and learning in the first years of life, (b) conduct assessment batteries, (c) interpret assessment findings and develop intervention plans, (d) provide remedial services for specific learning domains and practical recommendations, and (e) acquire skills in composing professional psychometric reports.

### **PSY 617 Counselling Psychology (7.5 ECTS)**

This course will present the major counselling theories and the corresponding methods and techniques. More specifically, the following theories are critically discussed: Psychoanalytic (Freud), neo Freudian/egopsychological (Erikson, Adler), rational-emotive (Ellis), transactional (Burns), Behavioural (Wolpe, Dollard & Miller), person-centered (Rogers), existentialist (May, Frankl) and Gestalt (Perls). Special emphasis is placed on the process of the psychological interview.

### **PSY 619 Intelligence: Development and Evaluation (7.5 ECTS)**

This course will inform students of the current research and theory in the area of cognitive development. Theories and models of cognitive change will be taught, as well as methods



for determining conceptual change. Students will be required to study the relevant bibliography and present reports on relevant topics of the bibliography, both orally and in written form. For practical experience, students will also be asked to participate in small-scale experiments with the models taught.

#### **PSY 637 Social Development and Social Settings (7.5 ECTS)**

This course gives students an introduction to classic and contemporary theories of human development that hypothesize development as a socio-psychological process. The course includes a historical review of theories that placed the theoretical bases of the contemporary socio-genetic approach to human development, e.g. the classic theories of Mead, Baldwin, Piaget and Vygotsky. There will also be in-depth discussions about recent meta-Piagetian theories of the Geneva social school, and about meta-Vygotskian theories such as those of Bruner, Rogoff, Wertsch and Valsiner.

#### **PSY 642 Child and Adolescent Psychopathology (7.5 ECTS)**

This course will review the most common disorders of childhood and adolescence with an emphasis on diagnostic criteria, developmental course, possible etiologies and the role of the environment in the development and maintenance of problem behaviours. Scientifically based treatments for these disorders will also be discussed.

#### **PSY 652 Preventative Interventions in the School (7.5 ECTS)**

The course focuses on the design, implementation and evaluation of preventative programs at the school level. It will emphasize prevention of personal, interpersonal and social problems, in a way that utilizes all resources of the school system including parents, teachers and students. The course will train the students in need assessment, and the clinical methodology required to design and implement a programme, and assess its effectiveness empirically.

#### **PSY 701 Psychology of Instruction (7.5 ECTS)**

This course is designed for graduate students in Educational Psychology, who are interested in applied research and/or practice, and aims to support and improve the instruction and the learning that takes place in schools. Learning is examined as a function of instructional practices in specific educational contexts and contents, and in relation to factors that have been found to influence it. Specific topics are organized into themes that include: (a) nature and conditions of classroom learning; (b) models of instruction, domain-specific instructional approaches, instructional effectiveness; (c) aptitude – treatment/method interactions; (d) alternative instructional and assessment approaches; (e) teacher knowledge and beliefs, expertise in teaching; (f) evaluation and intervention at the level of the school, the classroom, and the teacher. The course is supported by a selection of empirical articles in applied research and case studies on evaluation and intervention.

#### **PSY 705 Diagnostic Intellectual Assessment of Children and Adolescents (7.5 ECTS)**

This course examines the administration, scoring, interpretation, and research foundations of the major individual tests of intelligence and other objective assessments of cognitive function and behavior, including observation. Emphasizes the Wechsler scales and the measurement of child and adolescent intelligence. Each student will be required to administer a certain number of complete assessments. The course also develops report-writing skills.

#### **PSY 706 Neurophysiology (7.5 ECTS)**

Human behaviour results both from natural (biological) as well as exogenous (psycho-social) factors. This course will examine the basic structure, organization and function of the human nervous system, particularly as these affect or modify behaviour. We will specifically study the following topics: anatomy of the brain, spinal cord, peripheral nerves and muscles; structure and function of neurons; the effect of neurotransmitters, hormones, and other endocrinological factors. We will also examine the interactions of these biological systems and their effects on behaviour. The neuro-physiological basis of specific behaviours such as sleep, reproduction, memory, aggression, communication, as well as mental disorders will be studied in detail. In addition, we will review current research projects and findings that relate to the above.

#### **PSY 708 Analysis and Modification Behavior (7.5 ECTS)**

Learning theories and their application in behavior analysis as an assessment tool for children and adolescents. Protocols of observing and documenting behavior will be taught and emphasis will be placed on methods of behavior modification based on current research and theory. Methods presented include positive and negative reinforcement, schematization, emotional control, negative thought documenting and modification.

#### **PSY 711 Psychopharmacology (7.5 ECTS)**

Introduction to the benefit and action of various psychotropics as they are used in the treatment of various clinical syndromes in children, teenagers, adults, and the elderly. Beginning skills for assessing the need for psychoactive medications in helping diverse patient populations, as well as their ability and side effects.

#### **PSY 713 Experimental Psychology (7.5 ECTS)**

This course aims to offer students advanced knowledge and practice in designing, preparing and conducting psychology experiments using computers. It will offer theoretical background on the rationale behind experimental designs, as well as in-depth knowledge of experimental designs that are widely used today in psychological research. In addition, students will be taught the basic principles of programming and they will learn how to prepare experiments with the software that is commonly used today to collect empirical data in various psychology areas. Through individual assignments and a final project, students are expected to acquire experience in all phases of conducting research using computers.

#### **PSY 714 Psychological Interventions in the Schools II (7.5 ECTS)**

The course will focus on contemporary, empirically validated treatments for children and families and for classroom-based interventions in collaboration with the teacher. Interventions will include psycho-educational approaches, counseling, cognitive-behavioral and other scientifically based methods, with emphasis on their specific application in the school context.

#### **PSY 715 Language Development and Language Disorders (7.5 ECTS)**

Human language is a dynamic and complex function. The purpose of this advanced course is to discuss the theoretical and scientific bases for language acquisition and development, and the language disorders caused by developmental, organic, and neurological etiologies. The course will cover the spectrum of ages beginning with infancy and will conclude with the aging process. Disorders like aphasia, specific language impairment, language learning disabilities, as well as language impairments resulting from brain injuries and dementia and the relationship between language, cognition, and other psychological functions

will be presented. Assessment techniques and intervention strategies based on contemporary theoretical, research, and clinical models will be included.

#### **PSY 722 Cross-Cultural Issues in Psychology (7.5 ECTS)**

This class identifies the need for a social psychological approach to the study of phenomena related to cross-cultural contact and communication. Students will use different theoretical paradigms and empirical evidence coming from intercultural contact zones worldwide in order to understand issues related to the psychological aspects of movement and migration. The course will first explain and discuss concepts related to nation and nationalism and will then move on to the study of psychological processes related to migration. We will then identify the challenges that people face when they are exposed to new environments, by examining processes of acculturation and focusing on issues of identity and stigma negotiation. We will discuss the challenges that societies face with migration, by referring to issues of acculturation, identity and prejudice. Finally, we will discuss of intergroup relations issues in multi-cultural societies.

#### **PSY 730 Neuropsychological Assessment (7.5 ECTS)**

Clinical neuropsychology focuses on the interaction between brain functioning and human behavior. The purpose of this course is to discuss neuropsychological assessment and to help the student differentiate between functional versus organic disorders. In addition, the impact of individual differences relating to intelligence, quality of education, and issues pertaining to test sensitivity and specificity will be integrated into the lectures. Neuropathologies such as Alzheimer's disease, traumatic brain injury, cerebral vascular accidents, neoplastic lesions and neuropsychiatric disorders will be discussed as they pertain to dementia, aphasia, apraxia, agnosia, amnesia, and personality disorders. The course will discuss the effects of neuropathology on neuropsychological function and will examine current clinical assessment measures used to evaluate memory, attention-concentration, language, perception, visual-spatial skills, verbal learning, and psychosocial functioning. Course prerequisites: PSY 200, PSY 706.

#### **PSY 746 Social Psychology of Education (7.5 ECTS)**

This course will discuss the socio-psychological bases of cross-cultural education. Students will learn the main theories on the generation and reduction of prejudice, stereotypes and discrimination, as well as their application in educational settings. There will be discussions on the phenomenon of immigration, looking at the issue from the perspectives of the minority and the majority. The course will also discuss the topic of national conflicts, as well as the role that the educational system may play in peace consolidation through the application of the discussed theories.

#### **PSY 749 Qualitative Research Methods in Psychology (7.5 ECTS)**

This course will introduce and familiarize students with qualitative research methods in psychology through a theoretical review and empirical applications. The course will involve the study of qualitative research projects in the areas of social, developmental, educational, cognitive and clinical psychology. The course will include study of: 1) the epistemological principles of qualitative and quantitative methodology; 2) principles and application of methods of data collection; 3) analytical theoretical models; 4) organization, management and class presentation of an original small research project.

## **MASTER DEGREE IN COGNITIVE EDUCATIONAL PSYCHOLOGY**

### **Introduction**

The Master's Programme in Cognitive Educational Psychology aims to prepare students to undertake productive roles in research, teaching and applied work in the fields of Cognitive and Educational Psychology. The Programme offers students a comprehensive understanding of the concepts, methods and theories related to the aforementioned cognitive areas. Candidates may hold a Bachelor's degree in Psychology or a related field and are interested in increasing their knowledge of cognitive and educational methodologies. The Master's programme offers specialized courses in teaching and learning, cognitive systems and development, general and specialized cognitive abilities and their measuring methods, biology of learning and cognitive abilities and advanced research methodology. The Programme does not lead to a professional title degree in Psychology. Instead, it leads to the expansion of knowledge in two main areas of Psychology via in-depth study of the relationships between individual differences and learning environment, individual differences and knowledge transformation. This Programme of study increases the graduate's readiness to understand the role and impact of contemporary educational and cognitive psychology in the dynamic and continuously evolving school and professional environments.

### **Aims**

- To offer comprehensive knowledge in specialized issues relevant to educational and cognitive psychology, emphasizing in-depth theoretical knowledge and application.
- To increase the understanding and implementation of quantitative and qualitative methods pertaining to cognitive and educational psychology.
- To help students develop their critical skills and improve their ability to comprehend and implement key concepts of the two cognitive areas.
- To provide students with opportunities to participate in current research programmes and develop their basic research skills.
- To provide the knowledge and skills that are required to pursue a doctoral programme, a research career, or a professional career.
- To examine variables/factors contributing to the learning process, and to learn how to recognize and cope with learning difficulties exhibited by some children and adolescents.
- To study cognitive development from the perspective of individual differences in basic and higher cognitive functions.

### **Fields of Research**

Spatial ability, memory and attention, intelligence, measurement of general cognitive capacity, and cognitive abilities, developmental learning disorders, pediatric and

adult neuropsychology, learning and school environment, learning and cognition, knowledge acquisition and conceptual change, textual comprehension and learning, thought disorders and reasoning ability, creativity as a cognitive phenomenon.

## Laboratory Equipment

The Department of Psychology has three fully equipped research laboratories dedicated to Cognitive and Educational research. These are: the Experimental Psychology Laboratory, the Psychophysiology Laboratory and the Neurocognitive Research Laboratory.

## Description

The Programme comprises a total of 120 ECTS and includes an optional postgraduate thesis. If the student opts to write a thesis, the courses are structured as follows: The first 75 ECTS are distributed among required and elective courses, and the remaining 45 ECTS are allocated for the thesis (PSY 742, PSY 743 and PSY 744). If the student opts out of the thesis, the courses are structured in the following way: The first 97.5 ECTS are distributed among required and elective courses, and the remaining 22.5 ECTS are allocated for three required graduate research courses (PSY 625, PSY 626 and PSY 627). Both the thesis and the graduate research courses should be completed in two or three semesters. Students who successfully complete the Programme, may continue on to Doctoral studies (after the required application and interview).

## Structure

### PROGRAMME WITH A DISSERTATION

	ECTS
<b>Required Courses</b>	<b>22.5</b>
PSY 604 Multivariate Statistics for the Behavioral Sciences	7.5
PSY 620 Learning and Cognition	7.5
PSY 712 Cognitive Science	7.5
<b>Thesis</b>	<b>45</b>
PSY 742 Master's Thesis I	15
PSY 743 Master's Thesis IIA	15
PSY 744 Master's Thesis IIB	15
PSY 745 Continuation of Maste's Thesis (optional)	1
PSY 745 Continuation of Master's Thesis (optional)	1
<b>Total</b>	<b>67.5</b>
<b>Elective Courses</b>	<b>52.5</b>
Students will select 7 courses** (a total of 52.5 ECTS) from the list below:	
PSY 601 Ethical and Professional Topics in Educational Psychology	7.5
PSY 602 Graduate Seminar: Advanced Issues in Psychology	7.5
PSY 605 Psychometrics	7.5
PSY 607 Memory and Executive Functions	7.5

PSY 608 Attention and Perception	7.5
PSY 609 Developmental Learning Disabilities	7.5
PSY 610 Psychology of Education	7.5
PSY 616 Mental Representations	7.5
PSY 619 Intelligence: Development and Evaluation	7.5
PSY 625 Graduate Research Study IV	7.5
PSY 626 Graduate Research Study V	7.5
PSY 627 Graduate Research Study VI	7.5
PSY 689 Independent Study	7.5
PSY 701 Psychology of Instruction	7.5
PSY 703 Modelling Cognitive Processes	7.5
PSY 706 Neurophysiology	7.5
PSY 713 Experimental Psychology	7.5
PSY 715 Language Development and Language Disorders	7.5
PSY 719 Topics in Neuroscience	7.5
PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind	7.5
PSY 746 Social Psychology of Education	7.5
PSY 749 Qualitate Research Methods in Psychology	7.5
PSY 788 Advanced Research Methods II	7.5

### PROGRAMME WITHOUT A DISSERTATION

	ECTS
<b>Required Courses</b>	<b>45</b>
PSY 604 Multivariate Statistics for the Behavioral Sciences	7.5
PSY 620 Learning and Cognition	7.5
PSY 712 Cognitive Science	7.5
PSY 625 Graduate Research Study IV	7.5
PSY 626 Graduate Research Study V	7.5
PSY 627 Graduate Research Study VI	7.5
<b>Total</b>	<b>45</b>
<b>Elective Courses</b>	<b>75</b>
Students will select 10 courses** (a total of 75 ECTS) from the list below:	
PSY 601 Ethical and Professional Topics in Educational Psychology	7.5
PSY 602 Graduate Seminar: Advanced Issues in Psychology	7.5
PSY 608 Attention and Perception	7.5
PSY 609 Developmental Learning Disabilities	7.5
PSY 610 Psychology of Education	7.5
PSY 616 Mental Representations	7.5
PSY 619 Intelligence: Development and Evaluation	7.5
PSY 625 Graduate Research Study IV	7.5
PSY 626 Graduate Research Study V	7.5
PSY 627 Graduate Research Study VI	7.5
PSY 689 Independent Study	7.5
PSY 701 Psychology of Instruction	7.5

PSY 703	Modelling Cognitive Processes	7.5
PSY 706	Neurophysiology	7.5
PSY 713	Experimental Psychology	7.5
PSY 715	Language Development and Language Disorders	7.5
PSY 719	Topics in Neuroscience	7.5
PSY 731	Cognitive Neuroscience: Understanding the Biology of the Mind	7.5
PSY 746	Social Psychology of Education	7.5
PSY 749	Qualitative Research Methods in Psychology	7.5
PSY 788	Advanced Research Methods II	7.5

*\*\* Courses from another Department or another Graduate Programme of the Psychology Department may qualify as an elective course with the approval of the student's supervisor.*

## Courses Description

All courses are credited with 7.5 ECTS.

### **PSY 601 Ethical and Professional Topics in Educational Psychology (7.5 ECTS)**

See course description on previous pages.

### **PSY 602 Graduate Seminar: Advanced Issues in Psychology (7.5 ECTS)**

This is a seminar focused on in-depth examination of theory, application and research issues in Educational and Cognitive Psychology. The content will be adjusted according to the interests and specialisations of each lecturer. The goal is to have distinguished visitors or specialized scholars/scientists who will work with the Psychology Department to provide lectures for this seminar.

### **PSY 604 Multivariate Statistics for the Behavioural Sciences (7.5 ECTS)**

See course description on previous pages..

### **PSY 605 Psychometrics (7.5 ECTS)**

See course description on previous pages.

### **PSY 607 Memory and Executive Functions (7.5 ECTS)**

The course focuses on various important issues in the field of human memory research. More specifically, traditional and contemporary theoretical perspectives will be analyzed, as well as the implementation of cognitive, social, neuroimaging and neuropsychological methods on memory research. Moreover, there will be discussions focused on how information is coded and recalled, the various types of memory and the use of different measuring tools for these issues. In addition, the issue of how memory loss develops, the biological changes accompanying it and therapy potential will be discussed. At a later stage, the focus will shift to the role of executive functions contributing to memory behaviors, with special reference to brain areas participating in higher cognitive functions, e.g. decision making and problem analysis.

### **PSY 608 Attention and Perception (7.5 ECTS)**

The goal of this course is the thorough study of the nature of perceptual experience. The course will examine how the senses are used to gather information from the world and how the brain uses sensory signals to construct interpretations of what is out there. Although research on all senses will be discussed, vision will be examined more extensively. Research findings on topics

such as the perception of color, depth, shape, and motion will be reviewed from the perspective of cognitive-experimental psychology and neuroscience.

### **PSY 609 Developmental Learning Disabilities (7.5 ECTS)**

This course offers comprehensive information on developmental disorders. Developmental disorders reduce the person's functioning, since they affect cognitive, motor, adjusting and social skills. Some of these disorders partly affect the person's functioning, while others seriously affect social adjustment and functioning, in such a way that supportive equipment is required. During the course, there will be discussions on the diagnostic features of specific learning difficulties, mental disorders and autism, with emphasis on intervention strategies in school.

### **PSY 610 Psychology of Education (7.5 ECTS)**

See course description on previous pages.

### **PSY 616 Mental Representations (7.5 ECTS)**

Knowledge representation in an intelligent system, whether it be a brain or a computer, is a major concern in the Cognitive Sciences, as it pertains to the basic functional "units" of the system. Thus, any attempt to understand and analyze the way an intelligent system functions begins with the analysis and understanding of the way information is stored and represented in the system, and of the repercussions of a particular way of knowledge representation on the function and potentialities of the system. The problem of representation is primarily an epistemological problem, and as such it has both philosophical and psychological dimensions. But it is of major interest in Artificial Intelligence (AI) as well. Since the approach to the problem from the perspective of AI draws heavily on philosophical and psychological discussions about representations, and since an introduction to the problem in the context of AI cannot succeed without an expert's knowledge of philosophy and psychology, this approach will be adopted in analyzing the problem of knowledge representation. In this context the problem of knowledge representation amounts to the following: which programming language is the most appropriate given a specific knowledge domain that the intelligent system must master?

### **PSY 619 Intelligence: Development and Evaluation (7.5 ECTS)**

See course description on previous pages.

### **PSY 620 Learning and Cognition (7.5 ECTS)**

The content of this course will include selected="true"="true" topics in Cognitive Psychology and Cognitive Science, with an emphasis on their implications for learning. Reference will be made to cognitive structures as well as processes such as knowledge acquisition, conceptual change, transfer, induction, analogical and deductive reasoning. The primary objective is to provide the solid theoretical basis that is necessary for research in this area. Coursework will involve reading, discussions, and extending previous research.

### **PSY 701 Psychology of Instruction (7.5 ECTS)**

See course description on previous pages.

### **PSY 703 Modelling Cognitive Processes (7.5 ECTS)**

The course will provide students with an in-depth analysis of the methodology and the main concepts underlying the cognitive modelling approach. Students will learn how to design and evaluate computational models of the mental processes involved in attention, perception, memory, and language. By reviewing published research, students will learn how computational



models can inform psychological theories of cognition. Through in-class assignments, they will also gain hands-on experience in the design of such models.

#### **PSY 706 Neurophysiology (7.5 ECTS)**

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See course description on previous pages.

#### **PSY 712 Cognitive Science (7.5 ECTS)**

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One of the most important scientific achievements of the past decades is the generation of a new research field, i.e. Cognitive Science. Cognitive Science is better understood as a wide research field, utilizing data from psychology, philosophy, linguistics, artificial intelligence and neuroscience. These research areas, although partly differentiated in the methods they use, their theories and results, are united by the convergence of the questions they ask and by their common perspective of the brain as an information processing system. Researchers in these fields have realized that they posited many common questions about the human brain nature, and that they have developed complementary and potentially cooperative research methods. The term "cognitive" refers to the functions of perception and knowledge. Consequently, cognitive science is the science of the brain. Cognitive scientists study perception, thought, memory, language comprehension, learning and other cognitive phenomena. The research methods used are numerous, and they include adults and children observation, computer programming for executing complex problems, examination of the nature of meaning and giving meaning to languages, examination of the way a brain functions etc. The aim of this course is to familiarize students with this new admirable world.

#### **PSY 713 Experimental Psychology (7.5 ECTS)**

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See course description on previous pages.

#### **PSY 715 Language Development and Language Disorders (7.5 ECTS)**

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See course description on previous pages.

#### **PSY 719 Topics in Neuroscience (7.5 ECTS)**

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An important area of study in Cognitive Science is the way knowledge is represented in the brain and mind. The study of this topic requires familiarity with the basic methods of knowledge representation, such as propositional representation, semantic nets, frames, the distributed representations of neural networks, etc. To understand these methods, as well as their critical appraisal, requires knowledge of both symbolic logic and basic connectionist theory. This course will introduce students to the fundamentals of symbolic logic and connectionist theory and discuss the various means of knowledge representation.

#### **PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind (7.5 ECTS)**

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Cognitive Neuroscience is the study of the biological underpinnings of the mind. This course is an introduction to the field and will cover a range of techniques/methods as well as demonstrate applications of those techniques to a wide array of cognitive, social, emotional, and developmental processes. Aside from summarizing the key research and methods, the course aims to sharpen students' ability to think critically about topics in the field so they can apply such skills to their own research.

#### **PSY 746 Social Psychology of Education (7.5 ECTS)**

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See course description on previous pages.

#### **PSY 749 Qualitative Research Methods in Psychology (7.5 ECTS)**

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See course description on previous pages.

#### **PSY 788 Advanced Research Methods II (7.5 ECTS)**

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Research design, Review of regression analysis, Basic functions of structural equation modelling and exploratory factor analysis, Confirmatory factor analysis (first-order CFA model, CFA models with Higher-order factors), Multitrait-multimethod model, The full latent variable model, Growth modelling, Multiple-group analyses (testing for invariant factorial structure of a theoretical construct, Testing for invariant latent mean structure, Testing for Invariant causal structure), Item response theory, Rasch measurement models. Emphasis will be placed on application, analysis and interpretation of latent variable models analyzed with appropriate software.

## **MASTER IN SOCIAL AND DEVELOPMENTAL PSYCHOLOGY**

### **Introduction**

#### **Why Social and Developmental Psychology?**

Humans are social beings who change through the course of their development. Psychologists are interested in the study of human development and the interplay between nature and development. On the other hand, social processes typically studied in Social Psychology (intergroup relationships, interpersonal relationships, social influence, social representations, attributions of causality, cooperation and competition) have a developmental background, and, consequently, to understand them requires the formulation of ontogenetic questions. "The fact that both of these approaches have a common beginning and are inspired by common interests is impressive. Through their different traditions and methodologies, a deep similarity that ties them together is generated. It is as if Social Psychology and Developmental Psychology are interested in the same subject, Social Psychology for the space, through the outer environment and Developmental Psychology for the time, through the inside environment. Thus, they constitute two views of the same science, where one tries to resolve, on a group level, the same question the other one tries to resolve on an individual level" (Moscovici, 1990).

#### **The Need for a Master Programme in Social and Developmental Psychology in Cyprus**

Most contemporary Psychology departments incorporate courses in Social and Developmental Psychology, because they are two of the four basic Psychology fields. Social and Developmental Psychology can make significant contributions in countries where socio-cultural needs and problems require social sciences for their solution. A typical example, and one that is close to the Cypriot reality, is the significant growth of social and developmental psychology in North Ireland and Israel during the past decades, as these are divided communities with past and present national conflicts, and therefore they face issues such as national identity, increase and decrease of prejudice. Thus, the need for local research on social developmental psychology in Cyprus is immediate, especially concerning intergroup relationships and examination of the socio-psychological parameters of inter-community relationships through a developmental perspective.

Moreover, the recent economic growth and the emphasis on information access have created organizational and educational needs where applied Social and Developmental Psychology may contribute significantly. Lastly, the application of Social and Developmental Psychology in education is very important, since it focuses on the study of psychological changes (cognitive, emotional, social) taking place from birth to late life of a person. Through observation of the developing individual, psychologists acquire knowledge that allows them to describe changes in human thought and intelligence, personality, emotional world and many other areas of a person's inner world that are shaped through the educational system.

Social and Developmental Psychology are currently considered "bridges" to other areas of psychology. Other main areas (i.e. Cognitive and Clinical) derive significant theoretical and methodological examples from Social and Developmental Psychology via the understanding of dynamic processes that shape human development and social interaction.

### Structure and Aims

The Programme comprises a total of 120 ECTS, and includes an optional postgraduate thesis. For students who opt to write a thesis, courses are structured as follows: The first 75 ECTS are distributed among required and elective courses, and the remaining 45 ECTS are allocated for the thesis (PSY 742, PSY 743 and PSY 744). If the student opts out of the thesis, the courses are structured in the following way: The first 97.5 ECTS are distributed among required and elective courses, and the remaining 22.5 ECTS are allocated for three required postgraduate research courses (PSY 625, PSY 626 and PSY 627). Both the thesis and the postgraduate research courses should be completed in two or three semesters. Successful completion of the Programme allows continuation to Doctoral studies, provided the student follows the established procedure (new application and interview).

The goals of this Programme are:

- To provide theoretical and methodological training for designing, conducting and analyzing sociopsychological and developmental research.
- To facilitate the understanding of quantitative and qualitative methodological approaches.
- To facilitate the connection of theoretical and empirical questions with social and developmental problems.

Completion of the Programme may lead to Doctoral level studies in Social or/and Developmental Psychology. It may also lead to immediate job placements in fields where graduates' qualifications are considered useful, e.g. in organizations working on social research and market research. However, candidates seeking admission to the Doctoral programmes, must follow the standard application and interview process.

### Fields of Research

Students in the Programme have the opportunity to participate in the following research programmes:

- Social representations of national identity.
- Social representations of gender.
- Greek-Cypriot and Turkish-Cypriot contact and trust development.
- Inter-group relationships and teaching history.
- Social construction of knowledge and cooperative learning.
- Social representations of HIV/AIDS and development of prevention programmes.
- Ecological consciousness and behaviour.
- Driving behaviour and development of driving violence prevention programmes.
- Consumer behaviour and consumer attitudes.
- The psychology of minority social influence.
- Parental involvement and child development.
- School aggression in preschool and school-age children.
- Parent, child, teacher and attribution theories.
- Parental style and developmental difficulties in childhood and adolescence.
- Adolescence, antisocial behaviour, and substance use.
- Developmental psychopathology and developmental disorders.
- Emotional divergence and relevant disorders.
- A systemic approach to problem resolution in school.

### Laboratory Equipment

The Laboratory of Social and Developmental Psychology (LSDP) is already operational in anticipation of the needs of the Master's programme. The laboratory will support the following types of research:

- The analysis of mechanisms of social knowledge development and change through various levels of analysis of the socio-psychological reality (intra-individual, inter-individual, intergroup and representational ideological level).
- The study of small group dynamics, cooperation and competition in educational settings.
- The study of the microgenesis, ontogenesis and socio-genesis of social representations.
- The study of learning and cognitive development as a socio-psychological process.
- The study of parents-children relationships and interactions.
- The study of pre-social and antisocial behaviour between children.

- The study of individual differences using neuro-psychological and developmental research methodology.
- The analysis of mechanisms involved in typical and non-typical development.

## Programme Description

### PROGRAMME WITH A DISSERTATION

	ECTS
<b>Required Courses</b>	<b>75</b>
PSY 604 Multivariate Statistics for the Behavioral Sciences	7.5
PSY 630 Contemporary Theories of Human Development	7.5
PSY 637 Social Development in Social Settings	7.5
PSY 640 Social Influence and Social Representations	7.5
PSY 641 Epistemology and Research Design in Social Sciences	7.5
<b>Master's Thesis</b>	
PSY 742 Master's Thesis I	15
PSY 743 Master's Thesis IIA	15
PSY 744 Master's Thesis IIB	15
PSY 745 Continuation of Master Thesis (optional)	1
<b>Elective Courses (6 courses)</b>	<b>45</b>
PSY 602 Graduate Seminar: Advanced Issues in Psychology	7.5
PSY 610 Psychology of Education	7.5
PSY 619 Intelligence: Development and Evaluation	7.5
PSY 625 Graduate Research Study IV	7.5
PSY 626 Graduate Research Study V	7.5
PSY 627 Graduate Research Study	7.5
PSY 632 Adolescence	7.5
PSY 642 Child Adolescent Psychopathology	7.5
PSY 677 Human Aggressiveness and Antisocial Behavior	7.5
PSY 689 Independent Study	7.5
PSY 702 Discourse Communication and Social Psychology	7.5
PSY 707 Family and Child Development	7.5
PSY 715 Language Development and Language Disorders	7.5
PSY 722 Cross-Cultural Psychology	7.5
PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind	7.5
PSY 741 Intergroup Relations in Divided Societies	7.5
PSY 746 Social Psychology of Education	7.5
PSY 749 Qualitative Research Methods in Psychology	7.5
PSY 788 Advanced Research Methods II	7.5

### PROGRAMME WITHOUT A DISSERTATION

	ECTS
<b>Required Courses (7 courses)</b>	<b>52.5</b>
PSY 604 Multivariate Statistics for the Behavioral Sciences	7.5
PSY 630 Contemporary Theories of Human Development	7.5
PSY 637 Social Development in Social Settings	7.5
PSY 640 Social Influence and Social Representations	7.5
PSY 625 Graduate Research Study IV	7.5
PSY 626 Graduate Research Study V	7.5
PSY 627 Graduate Research Study VI	7.5
<b>Elective Courses (9 courses)**</b>	<b>67.5</b>
PSY 602 Graduate Seminar: Advanced Issues in Psychology	7.5
PSY 610 Psychology of Education	7.5
PSY 619 Intelligence: Development and Evaluation	7.5
PSY 632 Adolescence	7.5
PSY 642 Child Adolescent Psychopathology	7.5
PSY 677 Human Aggression and Antisocial Behavior	7.5
PSY 689 Independent Study	7.5
PSY 702 Discourse Communication and Social Psychology	7.5
PSY 707 Family and Child Development	7.5
PSY 715 Language Development and Language Disorders	7.5
PSY 722 Cross-Cultural Psychology	7.5
PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind	7.5
PSY 741 Intergroup Relations in Divided Societies	7.5
PSY 746 Social Psychology of Education	7.5
PSY 749 Qualitative Research Methods in Psychology	7.5
PSY 788 Advanced Research Methods II	7.5

\*\* A course from another department or another graduate programme of the Psychology Department may qualify as an Elective Course with the approval of the student's supervisor.

## Courses Description

All courses are credited with 7.5 ECTS.

### **PSY 602 Graduate Seminar: Advanced Issues in Psychology (7.5 ECTS)**

See course description on previous pages.

### **PSY 604 Multivariate Statistics for the Behavioural Sciences (7.5 ECTS)**

See course description on previous pages.

### **PSY 610 Psychology of Education (7.5 ECTS)**

See course description on previous pages.

### **PSY 619 Intelligence: Development and Evaluation (7.5 ECTS)**

See course description on previous pages.

### **PSY 630 Contemporary Theories of Human Development (7.5 ECTS)**

The main theories of human development, from conception to the end of life, will be critically presented and discussed. There will also be discussions concerning intra-personal and inter-personal influences on biological, cognitive, emotional and social development.

### **PSY 632 Adolescence (7.5 ECTS)**

This course will cover the main theories and research on cognitive, physiological, socio-emotional, moral, and personality development during adolescence. Furthermore, we will also discuss the various problems faced by adolescents, emphasising the factors contributing to the development of problematic behaviour, including emotional, social and academic problems. The importance of discussing various psychological and other problems faced by adolescents lies in the fact that they are connected to extreme behaviors, such as suicide, criminal and aggressive behaviour.

### **PSY 637 Social Development in Social Settings (7.5 ECTS)**

This course will introduce students to classic and contemporary theories of human development, which consider development to be a socio-psychological process. There will be a historical review of theories that form the theoretical bases of the contemporary socio-genetic approach to human development, e.g. the classic theories of Mead, Baldwin, Piaget and Vygotsky. There will be also in-depth discussions about recent meta-Piagetian theories of the Geneva social school, and about meta-Vygotskian theories such as those of Bruner, Rogoff, Wertsch and Valsiner.

### **PSY 640 Social Influence and Social Representations (7.5 ECTS)**

This course will offer in-depth discussions concerning two of the most significant areas of Social Psychology: social influence and social representations. There will be discussions about the functional and the genetic model of social influence, as well as about classic and contemporary advancements in the areas of social influence and social representations. Moreover, the development of social representations of gender and national identity will be discussed. The applications of social influence and social representation theories to the fields of prevention, health psychology, advertising, communication and trade will also be discussed.

### **PSY 642 Child and Adolescent Psychopathology (7.5 ECTS)**

See course description on previous pages.

### **PSY 677 Human Aggression and Antisocial Behaviour (7.5 ECTS)**

This course will examine the phenomenon of aggressiveness, by presenting the various theories that attempt to explain it, as well as the empirical research that aims to locate its parameters. Terms

such as pre-active and counteractive aggressiveness, emotional toughness and its relationship to psychopathology; family as a trigger for the development of aggressive behaviour and the development of an aggressive personality will be analyzed. There will be special reference to bullying and profiles of children involved in it (bullies, victims, aggressive victims). We will also discuss about issues related to antisocial behaviour in general, such as substance abuse, youth violation of rules and youth criminality.

### **PSY 702 Discourse, Communication and Social Psychology (7.5 ECTS)**

This course examines the ways that social psychology can facilitate an understanding of discourse as a social and communicative practice. It will examine the ways in which discourse, both written and spoken constructs, creates different social realities and is structured in order to achieve specific communicative ends. During the course, reference will be made to research that critically analyses everyday communicative discourse as well as institutional discourse (media, political). Special reference will be made to representations in the media discourse that relate to specific social and psychological issues, such as psychopathology, gender, disability, sexuality, racism and nationalism.

### **PSY 707 Family and Child Development (7.5 ECTS)**

This course examines how structural and functional features of the family microsystem influence its members, especially the young, still developing members. The main theories of family development and function will be presented, with emphasis on the systemic approach. There will also be presentations and discussions on recent research targeting the interaction of intra-personal and interpersonal variables on the child's cognitive, psycho-social and personality development.

### **PSY 715 Language Development and Language Disorders (7.5 ECTS)**

See course description on previous pages.

### **PSY 722 Cross-Cultural Psychology (7.5 ECTS)**

See course description on previous pages.

### **PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind (7.5 ECTS)**

See course description on previous pages.

### **PSY 741 Intergroup Relations in Divided Societies (7.5 ECTS)**

This course will offer in-depth discussions on classic and contemporary theories of intergroup relationships. The concepts of stereotypes, prejudices and discrimination will be discussed. We will focus on the theories of frustration-aggression, authoritarian personality, realistic conflict, social identity, contact hypothesis, as well as recent evolutions of these theories, such as the theory of orientation towards social reign, the theory of threats, and theories combining the contact theory with the social identity theory. We will also discuss empirical findings and applications of these theories on the mixed education institution and on the resolution of intergroup conflicts in North Ireland, South Africa, Israel, Palestine and other places.

### **PSY 746 Social Psychology of Education (7.5 ECTS)**

See course description on previous pages.

### **PSY 749 Qualitative Research Methods in Psychology (7.5 ECTS)**

See course description on previous pages.

### **PSY 788 Advanced Level Research Methods (7.5 ECTS)**

See course description on previous pages.



## MASTER PROGRAMME IN SCHOOL COUNSELLING AND GUIDANCE

The postgraduate programme in School Counselling and Guidance is offered by the Department of Psychology at the University of Cyprus in collaboration with the National and Kapodistrian University of Athens. Successful students will earn a specialized postgraduate diploma (Master of Arts) in School Counseling and Guidance.

### Aim

The Programme offers postgraduate education and training in school counselling and guidance, so that graduates of the programme will be able to professionally counsel (in line with the English definition of counsellor) students on issues related to their personal and family life, education, and job/career options.

### Fees

Programme fees: €5,125

### Duration

The specialized postgraduate diploma requires two academic years of study, completed within a minimum of three academic semesters and a maximum of eight semesters.

### Language of Instruction

The language of instruction and the language required for all classroom participation and written assignments is Greek.

### Eligibility

The Programme is open to university graduates (B.A., B.Sc. minimum) with a degree in Psychology, any of the Education Sciences, or any subject that qualifies the holder as a secondary education teacher. All degrees must have been obtained at an accredited or recognized university.

### Job Prospects

The Ministry of Education and Culture and the Educational Services Committee recognize Programme graduates' eligibility for appointment as counselling and vocational guidance teachers, providing they also hold any additional requisite qualifications for the position. Graduates are likewise qualified to work in such capacity in private/non-state schools and educational organizations. Finally, graduates who choose to pursue an academic career will qualify for admission to Ph.D. programmes.

### Structure

Completion of the Programme requires 140 ECTS.

The Programme requires completion of 12 courses (6 required courses and 6 electives), each of which corresponds to 7.5 ECTS, as well as a compulsory practicum totaling 500 hours in public or private schools which is completed over two consecutive semesters and corresponds to 20 ECTS. Finally, students are required to undertake a research project (Master's thesis), which corresponds to 30 ECTS.

Participation in lectures is mandatory. All courses take place in Cyprus. Part of the programme of study (up to 20% or a maximum of two electives, excluding the practicum) may be offered as distance learning via teleconference.

	ECTS
<b>Compulsory Courses</b>	
COU 601 Ethics in School Counselling and Guidance	7.5
COU 602 Introduction to School Counselling and Guidance	7.5
COU 605 Vocational Guidance and Counseling	7.5
COU 650 Innovation and Creativity in Education	7.5
COU 660 Educators as Professionals	7.5
COU 604 Research Methods in Education (or an equivalent course offered by the collaborating departments)	7.5
COU700 Master's Thesis I	15
COU701 Master's Thesis II	15
COU789-790 Practicum	20
<b>Elective Courses (7.5 ECTS each)</b>	
Education Courses (selection of 2 courses)	
COU 609 Adult Education	
COU 651 Theory and Practice of Educational Science	
COU 652 Skills Development at School	
COU 653 Technologies of Information and Communication in Education	
COU 654 Human Resource Management in Education	
COU 655 Social Education	
COU 656 Curriculum Development and Micro-teaching	
COU 657 Current Issues in Education	
COU 658 Policies of Staff Training in Education	
COU 659 Sociology of Education	
<b>Psychology and Counselling Courses (selection of 2 courses)</b>	
COU 610 Psychology of Education	
COU 611 Counselling Psychology	
COU 612 Contemporary Theories of Human Development	
COU 613 Child and Adolescent Psychopathology	
COU 714 Psychology of Instruction	
COU 615 Family and Child Development	
COU 606 Learning Difficulties	
COU 607 Prevention and Treatment of Crises in the School	
COU 608 Intercultural Counselling and Minority Counselling	
COU 603 Methods and Tools for Assessment and Evaluation in Counseling	
<b>Elective Courses (7.5 ECTS each)</b>	
Two postgraduate courses (7.5 ECTS each) from a wide selection of courses offered by the collaborating departments. These may vary depending on the student's interests, and require the approval of the Academic Advisor and the consent of the Instructor.	
<b>Total</b>	<b>140</b>

## Courses Description

All courses carry 7.5 ECTS

### COMPULSORY COURSES

#### **COU 601 Ethics in School Counselling and Guidance (7.5 ECTS)**

There is an important code of ethics and certain other criteria that are implicated in the profession of a school counselor. The course therefore examines contemporary dimensions of human behaviour in a socio-political as well as a historical context in order to give students a thorough understanding of how the ethical code features in the field of counseling and guidance. The course looks at the relevant legislation and covers ethical and professional issues usually faced by a school counsellor. This course is a prerequisite for courses related to the development of clinical and professional skills (e.g. Practicum courses).

#### **COU 602 Introduction to School Counselling and Guidance (7.5 ECTS)**

This course will introduce students to the role and duties of a school counsellor. The course includes a review of the relevant literature and covers the key theories and principles related to the profession of school counselor. The syllabus is tailored to educators and psychologists who are beginning their postgraduate studies in this area. The course focuses on issues related to the assistive role of the professional school counsellor and the development of counselling and guidance skills.

#### **COU 604 Research Methods in Education (7.5 ECTS)**

The course focuses on study design, definition and testing of research hypotheses, procedures and measurement of variables, data collection, organization and analysis, statistical analysis (SPSS), and writing up of a scientific project.

#### **COU 605 Vocational Guidance and Counselling (7.5 ECTS)**

This course focuses on the evaluation of topics of personal and professional development such as: lifelong career development, theories of professional orientation, process of decision making and diversity issues. The course will also give students an understanding of basic counselling tools, more specifically, the interview, individual and group counselling and the instruction of the professional guidance class. An especially important aim of the course is to familiarize students with the questionnaires for counselling and professional orientation purposes, their administration and interpretation. The course looks at various issues that might be involved in the counselling process, for example, parental counselling, people with disabilities and people from various social groups. Students must also be aware that any information they are given must be used professionally, verified by multiple sources, checked for validity and reliability and correctly utilized.

#### **COU 650 Innovation and Creativity in Education (7.5 ECTS)**

This course explores the importance of creativity and innovation in relation to topical social and educational themes. Students/prospective counsellors must learn that the ability to be flexible, to be able to adapt to change, to subscribe to lifelong learning are necessary to respond to the crises and challenges of the current era.

#### **COU 660 Educators as Professionals (7.5 ECTS)**

The course discusses topics pertaining to the daily practices and routines of the educator in the school and his/her relationships with organizations and outside entities. There is an emphasis placed on the qualifications required of a successful educator to ensure a safe and effective school environment for students.

#### **COU 700 Master's Thesis I (15 ECTS)**

#### **COU 701 Master's Thesis II (15 ECTS)**

The thesis is the student's individual project, which is to be completed in two to three semesters. Students select their topic in accordance with their own area of interest.

#### **COU 789-790 Practicum (15 ECTS) (7.5 ECTS)**

This course brings the student in direct contact with the workplace and places him/her in the school unit. In addition, it provides students with the opportunity to synthesize and integrate the knowledge and skills they have acquired during the program and implement them in the school environment. Thus, this course acts as a medium for the professional development of the school counsellor.

### ELECTIVE COURSES

#### **Psychology and Counselling Courses**

##### **COU 603 Assessment and Evaluation in Counselling (7.5 ECTS)**

The course provides an introduction to the educational and psychological methods of assessment that are most useful to school counsellors. It covers the selection, administration, scoring and interpretation of a variety of tools and techniques for assessment, including standardized measures, control measures, structured interviews and systematic observation. There is a special emphasis on a specific model of problem analysis used to understand and address students' educational and behavioral difficulties and needs. Using the model, students/prospective counsellors can examine educational and behavioral problems within the school context and interpret the underlying reasons. The model also offers a variety of problem solving strategies.

##### **COU 606 Learning Difficulties (7.5 ECTS)**

Students with learning difficulties tend to present deficits in five basic areas: working memory, attention, applying strategies, basic vocabulary and speech coding. Weaknesses in these areas influence learning in many ways and in many areas of the school curriculum. Students with learning difficulties need special attention and guidance in these areas, which require that student performance levels must be defined in terms of yearly goals and monitored continuously with the aim of each student's individual development. In this course, school counsellors will learn about the characteristics of students with learning difficulties and the methods of teaching and intervention, which can be utilized, as well as specific strategies used to enhance student performance at both an individual and the group level.

##### **COU 607 Prevention and Treatment of Crises in the School (7.5 ECTS)**

This course focuses on the design, implementation and assessment of prevention and treatment programs related to crises in the schools. Emphasis is placed on the prevention and treatment of personal, interpersonal, and social problems through programmes/processes that involve the entire school system--the parents, educators, and students. The course teaches students how to identify the school system's needs, ways to minimize crises, and how to design programmes to successfully intervene. Finally, they will learn how to empirically evaluate the effectiveness of their interventions.

##### **COU 608 Intercultural Counselling and Minority Counselling (7.5 ECTS)**

This course will help students develop the skills, and attitudes necessary for the most effective counselling and guidance. The successful counsellor must understand and support all types of people, those with different cultures, race, gender, sexual orientations, religious preferences, and those with special

learning difficulties and developmental disorders. There will be a focus on developing students' awareness and alertness to the values and beliefs of various individuals in the context of a diverse society. The course teaches students how to conceptualize the way that diverse values, beliefs and traditions, forms of interaction, social circumstances and trends are related to cultural and ethnic differences. These are factors that are highly important to successful guidance and counselling.

#### **COU 609 Adult Education (7.5 ECTS)**

Adult education around the world: problems and issues. Basic theories. Strategies and educational techniques. Critical thought and art. Experiential activities. Programme development for adult education. Micro-teaching and micro-learning in adult education.

#### **COU 610 Psychology of Education (7.5 ECTS)**

This course presents the important psychology research related to counselling and educational practice, and critically examines contemporary theories of human development (cognitive, ethical, social and emotional development), as well as current learning theories. The course also examines topics such as individual differences, which may occur in the above scenarios. Finally, it evaluates the relationship between family and school, the opportunities for cooperation between teachers, parents and the school board.

#### **COU 611 Counselling Psychology (7.5 ECTS)**

This course will present the major theories of Counseling Psychology to help the student become familiar with the corresponding counselling techniques. More specifically, the following theories and methods of counselling are critically discussed: Psychoanalytic theory (Freud), neo Freudian/ego-psychological theories (Erikson, Adler), rational-emotive (Ellis), transactional (Burns), behavioral (Wolpe, Dollard & Miller), person-centered (Rogers), existentialist (May, Frankl) and Gestalt (Perls). Special emphasis is placed on the process, theoretical and practical, of the psychological interview.

#### **COU 612 Contemporary Theories of Human Development (7.5 ECTS)**

The main theories of human development from conception to the end of life will be critically presented and discussed. There will also be discussions concerning intra-personal and inter-personal influences on biological, cognitive, emotional, and social development.

#### **COU 613 Child and Adolescent Psychopathology (7.5 ECTS)**

This course will review the most common disorders of childhood and adolescence, with an emphasis on diagnostic criteria, the developmental course/progression, possible etiologies and the role of environmental factors in the presentation and persistence of the problem. Scientifically based treatments for these disorders will also be discussed.

#### **COU 615 Family and Child Development (7.5 ECTS)**

This course examines the influence of structural and functional characteristics of the family microsystem on the developing child. The broader theories of development and function of the family are discussed, with particular emphasis on the systemic perspective. Current research on the interaction between intra and inter-individual variables that are related to the child's cognitive, psycho-social and personality development are also presented.

#### **COU 651 Theory and Practice of Educational Science (7.5 ECTS)**

This course addresses the following topics: Concept and areas of Educational Science; Fields of Education; The pedagogic

relationship: Features and conditions; Research methods in Educational Science; The evolution of Educational Science; Psychological development of the child and the educational process; Goals and means of teaching; Factors of teaching (family, preschool, and secondary education); Free time and education; Play; Discipline; The pedagogical role of the educator.

#### **COU 652 Skills Development at School (7.5 ECTS)**

Social and emotional skills. Skills and school success. Skills and didactic models. Skills and current approaches. The dynamics of groups. Ways of including social skills in teaching. The role and skills of the educator. Putting skills into practice (e.g. self-esteem, conflict resolution, empathy, self-worth). Skills and non-verbal communication. Benefits of education in socio-emotional skills.

#### **COU 653 Technologies of Information and Communication in Education (7.5 ECTS)**

Theories of learning and Technologies of Information and Communication (TIC). Benefits of the use of TIC in the educational process. Methodology of blended learning. TIC tools for the development of educational themes (logistics, platforms, visual learning environment, video-conferencing, etc.). Communication tools and cooperation. Games for electronic learning. Exploiting interactive whiteboard learning. The role of TIC in the analytic school programme.

#### **COU 654 Human Resource Management in Education (7.5 ECTS)**

In today's post-modern world, the importance of investment in human resources in education (both private and public) is acknowledged, with the main aim of maximizing returns. Important areas covered in the course include: selection of appropriate staff, training and education, motives, increase of production, evaluation of results and current methods of stimulation for better results in education units.

#### **COU 655 Social Education (7.5 ECTS)**

This course will examine the socio-psychological bases of the educational process. The course will discuss the most important theories related to the development and reduction of prejudice, stereotypes and discrimination and how these apply in an educational context. The phenomena of immigration as well as that of national conflict will be discussed, in addition to the role of the educational system, in establishing peace with the implementation of theories. We will discuss the role of counselors in the educational system and special education legislation, the relationship between ideology and education policy, as well as the development intervention programmes in relation to intercultural education.

#### **COU 656 Curriculum Development and Micro-teaching (7.5 ECTS)**

The course covers the design, evaluation, and revision of curriculum plans, as well as how micro-teaching (i.e. mini lessons) can be used as a vehicle to offer in-service teachers a means to improve their teaching skills. During the design and organization of the lesson plan, the educator is expected to rely on the knowledge related to micro-teaching. Students attending the course will practice the techniques of micro-teaching and design micro-lessons.

#### **COU 657 Current Issues in Education (7.5 ECTS)**

Current Issues in Education (e.g. education of peace). Programmes in education (health education, environmental education, cultural themes, etc.). The European dimension in education. The school environment and its effect on learning. Free time and its utilization in learning. Home schooling: the teaching of the future. School abuse and bullying. Alternative teaching strategies

for students in danger. Effect of the economic situation on learning and teaching.

#### **COU 658 Policies of Staff Training in Education (7.5 ECTS)**

In this course, the character and role of the educational staff are analyzed, including the demands implicated in the specific duties assigned to the school personnel by the State, as well as the knowledge and skills required of the different school staff members. With regard to international experience, alternative standards are analyzed by a) focusing on the organization and funding for staff training and b) looking at programmes and training methods, and their connection to ideological orientations, the institutional context and the educational and societal conditions within each country.

#### **COU 659 Sociology of Education (7.5 ECTS)**

This course examines education as a multifaceted social institution for transferring knowledge, but also one that reproduces existing social, economic, and cultural structures. The course explores the development of the educational institution through the basic theories explaining the structure and, most importantly, the functions of education, as well as its relation to the broader changes in educational systems on an international level. The course also looks at the school class as a social subset and investigates the main factors involved and the relationships between these factors in the context of school action.

#### **COU 714 Psychology of Instruction (7.5 ECTS)**

This course is designed for graduate students in the School Counselling and Guidance programme who are interested in applied research and/or practice, that aims to support and improve the effectiveness of instruction and the learning that takes place in schools. Teaching of students and guidance of teachers is examined in specific educational contexts and contents, and in relation to factors that have been found to influence it. Specific topics are organized into themes, that include: (a) nature and conditions of classroom learning; (b) models of instruction, domain-specific instructional approaches, instructional effectiveness; (c) aptitude–treatment/method inter-actions; (d) alternative instructional and assessment approaches; (e) teacher knowledge and beliefs, expertise in teaching; (f) evaluation and intervention at the level of the school, the classroom, and the teacher.

## **MASTER OF SCIENCE PROGRAMME IN COGNITIVE SYSTEMS**

### **(Join M.Sc. Programme with the Open University of Cyprus)**

The Postgraduate Programme in Cognitive Systems is offered by the Departments of Psychology and Computer Science of the University of Cyprus in collaboration with the Open University of Cyprus. It is an interdisciplinary, distance-learning Programme, that brings together two areas of studies: Cognitive Psychology and Artificial Intelligence in Computer Science. More information about the Programme (purpose, course sequence and content, student admissions, requirements, and selection criteria) is available at: <http://cogsys.ouc.ac.cy>.

## **Ph.D. IN CLINICAL PSYCHOLOGY**

### **Aim**

The Doctoral Programme leads to a Doctor of Philosophy (Ph.D.) Degree in Clinical Psychology. The Programme consists of three components: a) academic coursework, b) clinical practicum, and c) the completion of a Doctoral dissertation. The duration of the Programme is four years, with a total of 320 ECTS. Graduates of the Programme will be able to pursue careers in research and academia or clinical practice. The Programme abides by the requirements of the Cyprus law for professional psychologists.

### **Number of Entrants and Entry Process**

The Department admits about seven doctoral students each year. The positions are announced at least six months before the beginning of each academic year, according to the formal procedures of the Academic Affairs and Student Welfare Service. Applications are examined by the Postgraduate Programme Committee of the Department, which submits a proposal to the Departmental Board. The decisions of the Department are implemented only after approval by the Postgraduate Committee of the University.

### **Entry Criteria**

- A Bachelor's Degree in Psychology and a Master Degree in Psychology from accredited universities. It is preferred but not required that the Master Degree is in an applied field of Psychology.
- Student performance as indicated on the student's university transcripts.
- Minimum of three letters of recommendation (see Departmental Recommendation Form); at least two of the letters should be from former professors.
- Distinctions and special awards.
- Research participation, publications and scientific publications.
- Personal interview.

Each Doctoral student will collaborate with an Academic Advisor, who is a faculty member in the Department and who will supervise the student during his/her studies and dissertation process. The Department requires that the candidate secures the commitment of a faculty member who agrees to mentor him/her during the doctoral studies, prior to the admission interview (which is conducted as part of the admission decision process).

### **Completion Requirements**

The following are required for the Ph.D. degree:

1. Successful completion of 320 ECTS, including 82.5 ECTS described above from academic courses and seminars.
2. Successful performance on the comprehensive examination according to the internal regulations of the Department and the University.
3. Successful completion of the clinical practicum



internships, totalling a minimum of 1500 supervised clinical hours.

4. Successful completion of the clinical knowledge and skill examination according to the internal regulations of the Department and the University.
5. Submission and successful defense of a doctoral dissertation proposal.
6. Completion and successful defense of a doctoral dissertation.

## Programme Description

### I. Academic Coursework

Students will complete eleven courses selected from the following four categories:

1. Research
2. Clinical Assessment
3. Clinical Intervention
4. Psychotherapy Seminars

Students may transfer up to three courses from their M.A. work, from categories 1, 2 & 3 (see above), provided that the course content was identical.

It is noted that a Doctoral student undertaking a dissertation with a non-clinical faculty is encouraged to complete at least one course from the other graduate programmes of the Department, based on the recommendations of his/her research and academic advisors. The course can be completed as an additional course, as a substitute for a clinical course, or in place of a course that has been credited from a previous graduate programme, based on the Department's approval. The students may submit a request for registration in such a course within 2 months from the date of admission to the programme. The request will be approved by the Department Chair.

It is expected that students will have already learned the theoretical bases of Psychology (Cognitive, Biological, Developmental, Social and Research Methods), as part of their Master's Programme. Therefore, these courses are not required as part of the Doctoral programme's total ECTS. If a student has not attended at least one course in each of the above areas during the Master's programme, he/she must do so during doctoral studies (this is in addition to the requirements of the doctoral programme).

Ethical, professional development, cross-cultural and legislation issues will be integrated in the content of the clinical courses, in order to provide a better understanding and connection of these issues pertaining to specific cases and disorders. The programme does not, therefore, include a separate course on these issues.

Students are required to pass a comprehensive examination in accordance with the University regulations, after which they can begin their doctoral dissertation. The breakdown of the academic and dissertation courses is given below.

	ECTS
<b>Research Courses</b>	<b>15</b>
Two of the following:	
PSY 788 Advanced Research Methods II	
PSY 789 Applied Data Analysis II (Pre-requisite: PSY 604: Multivariate Statistics for the Behavioral Sciences)	7.5
PSY 790 Doctoral Seminar: Dissertation and Research Programme Development	7.5
<b>Clinical Assessment Courses</b>	<b>22.5</b>
Three of the following:	
PSY 717 Adult Psychopathology or	7.5
PSY 642 Child and Adolescent Psychopathology	7.5
PSY 705 Diagnostic Intellectual Assessment of Children and Adolescents or	
PSY 730 Neuropsychological Assessment	7.5
PSY 747 Diagnostic Assessment II, Personality, Emotion and Symptomatology. (Mandatory)	7.5
<b>Clinical Intervention Courses</b>	<b>15</b>
Two of the following:	
PSY 708 Analysis and Modification Behavior	7.5
PSY 716 Basic Clinical Skills (mandatory)	7.5
PSY 733 Theories and Systems in Psychotherapy	7.5
PSY 711 Psychopharmacology	7.5
Specific Psychotherapy Seminars	22.5
Three of the following:	
PSY 714 Psychological Interventions in the Schools II	7.5
PSY 720 Advanced Seminar in Psychotherapy with Couples and Families	7.5
PSY 721 Seminar in Group Psychotherapy	7.5
PSY 723 Seminar on Cognitive Behavioral Therapy (mandatory)	7.5
PSY 724 Seminar in System Theory and Interventions Seminar	7.5
PSY 725 Seminar in Brief Psychotherapy Seminar	7.5
PSY 726 Specialized Seminar II: Clinical Geropsychology	7.5
PSY 727 Specialized Seminar III: Clinical Forensic Psychology	7.5
PSY 728 Advanced Seminar IV: Psychological Interventions in Health Settings	7.5
PSY 729 Advanced Seminar V: Severe Psychopathology, Diagnosis and Treatment	7.5
PSY 748 Neuropsychological Rehabilitation	7.5
<b>Final Comprehensive Exam</b>	<b>15</b>
PSY 777 Preparation for Final Exam (optional)	1
PSY 800 Final Examination	15
<b>Doctoral Dissertation</b>	<b>180</b>
PSY 869 Research Level IA	15
PSY 870 Research Level IB	15
PSY 871 Research Level IIA	15
PSY 872 Research Level IIB	15
PSY 873 Research Level III	30
PSY 874 Research Level IV	30
PSY 875 Writing Level IA	15
PSY 876 Writing Level IB	15
PSY 877 Writing Level IIA	15

PSY 878 Writing Level IIB	15
PSY 879 Writing Level III	1
PSY 880 Writing Level IV	1
PSY 881 Writing Level V	1
PSY 882 Writing Level VI	1
PSY 883 Writing Level VII	1
PSY 884 Writing Level VIII	1
PSY 885 Writing Level IX	1
PSY 886 Writing Level X	1

**Clinical Practicum Seminars 42.5**

PSY 734 Clinical Practicum Seminar I	10
PSY 735 Clinical Practicum Seminar II	10
PSY 736 Clinical Practicum Seminar III	11
PSY 738 Clinical Practicum Seminar IV	11.5
PSY 739 Clinical Practicum Seminar V (optional)	7.5

*Note: For the eleventh course, the student selects a course from the clinical intervention, assessment, or the specific psychotherapy seminars section.*

### Study Terms and Conditions

The student must maintain a Grade Point Average (G.P.A.) of seven out of ten or higher, otherwise he/she will be placed on academic probation. If a student's grade remains below seven for a second semester, the case is forwarded to the Departmental Board for review and possible dismissal.

#### II. Clinical Practicum

All Doctoral students are required to complete at least 1500 hours of clinical practicum, according to the current legislation and the standards set by the proposed European training model for Psychologists–EuroPsy. Students, who have already completed some supervised clinical practicum (that fulfills the criteria of the Department) during their Master degree in Psychology, as well as students who already are licensed psychologists, may be credited with up to 900 hours of clinical practice.

The clinical practicum can be supervised by our Department's faculty and by supervisors outside the Department, on the basis of quality standards set by the scientific literature, international practice guidelines, and our faculty's knowledge and expertise.

#### PSY 737 Doctoral Examination of Clinical Knowledge and Skills (0 ECTS)

In order to graduate, Doctoral students in our Programme must pass a final exam on clinical knowledge and skills, that will evaluate their readiness to practice independently as clinical psychologists.

Before taking the exam, students must have:

1. Successfully completed their clinical portfolio.
2. Completed at least 1000 hours of supervised clinical practicum.
3. Fulfilled the clinical practicum aims stipulated by the Department. The final exam is conducted individually in written form and scored by a two-member committee.

Should a student fail the final examination, he/she is suspended until such time that he/she retakes and passes the exam. The Department sets specific dates for the examination, consistent with the length of the academic semesters. This allows students to take the examination at the same time that they complete the Clinical Practicum Seminar III. The Clinical Practicum Seminar III is scheduled according to the examination and/or the completion of the minimum 1000 hours of clinical practicum. This way, students who fail the examination may resit it at a time compatible with the assessment of progress.

The examination evaluates students' clinical development and expertise in the management of clinical cases and, by extension, their ability to independently practice the profession of clinical psychology in all its contexts – ethical, legal, and professional. The examination will be evaluated in the form of Pass/Fail and the result will be validated by the Board. In case of failure, the Department may require the student to engage in further academic activities and/or additional supervised clinical practice, including re-taking of the seminar courses. In the event of a second failure, the student will not be allowed to continue her/his clinical training and, therefore, will be unable to complete the clinical, applied part of the programme.

**Fees: €3.200**

**Fee for supervised practicum: €1.000\***

**Total cost of programme: €4.200**

*\* In addition to the standard fees for the applied Ph.D. programme in Clinical Psychology, a fee of €1000 is added for the supervised clinical practicum, which is utilized for acquiring supervision services from registered professional psychologists.*

#### III. Doctoral Dissertation

The procedures for conducting the Doctoral dissertation are presented and explained on the Department website. The student may begin the dissertation after the successful completion of the Comprehensive Examination. The dissertation is supervised by a faculty member of the Department.

#### Yearly Schedule

	ECTS
<b>First Year</b>	
<b>Fall Semester</b>	
Research Course (PSY 788 or 789)	7.5
Clinical Assessment Course (PSY 705 or 730)	7.5
Clinical Assessment Course (PSY 717 or 642)	7.5
PSY 869 Research	15
<b>Total</b>	<b>30</b>
<b>Spring Semester</b>	
Clinical Intervention Course (PSY 7081 7111733)	7.5
Clinical Intervention Course (PSY 716)	7.5
Clinical Assessment Course (PSY 747)	7.5
PSY 870 Research	15
<b>Total</b>	<b>37.5</b>

<b>Summer Semester</b>	
PSY 871 Research	15
<b>Total</b>	<b>15</b>
<b>Second Year</b>	
<b>Fall Semester</b>	
PSY 723 Specific Psychotherapy Seminar	7.5
Specific Psychotherapy Seminar**	7.5
PSY 872 Research	15
<b>Total</b>	<b>40</b>
<b>Spring Semester</b>	
PSY 790 Research Course	7.5
PSY 873 Research	30
<b>Total</b>	<b>40</b>
<b>Summer Semester</b>	
PSY 800 Final Comprehensive Exam	15
<b>Total</b>	<b>15</b>
<b>Third Year</b>	
<b>Fall Semester</b>	
PSY 734 Clinical Practicum Seminar I	10
PSY 874 Research	30
<b>Total</b>	<b>40</b>
<b>Spring Semester</b>	
PSY 735 Clinical Practicum Seminar n*	10
Specific Psychotherapy Seminar	7.5
PSY 875 Writing Level IA	15
<b>Total</b>	<b>32.5</b>
<b>Summer Semester</b>	
PSY 876 Writing Level IB	15
<b>Total</b>	<b>15</b>
<b>Fourth Year</b>	
<b>Fall Semester</b>	
PSY 736 Clinical Practicum Seminar III	11
Specific Psychotherapy Seminar	7.5
PSY 877 Writing Level IIA	15
<b>Total</b>	<b>33.5</b>
<b>Spring Semester</b>	
PSY 738 Clinical Practicum Seminar IV	11.5
PSY 877 Writing Level IIB	15
PSY 737 Required Final Doctoral Examination of Clinical Knowledge and Skills	0
<b>Total</b>	<b>30</b>
<b>Total Mandatory Academic ECTS</b>	<b>97.5</b>
<b>Total Mandatory Clinical ECTS</b>	<b>42.5</b>
<b>Total Mandatory Research ECTS</b>	<b>180</b>

**Note:** (\*) Denotes a mandatory course;(\*\*) Denotes the possibility of choosing the one elective for one of the two semesters.

## Courses Description

All courses are credited with 7.5 ECTS.

### **PSY 705 Diagnostic Intellectual Assessment of Children and Adolescents (7.5 ECTS)**

See course description on previous pages.

### **PSY 708 Analysis and Modification of School Behavior (7.5 ECTS)**

See course description on previous pages.

### **PSY 711 Psychopharmacology (7.5 ECTS)**

See course description on previous pages.

### **PSY 714 Psychological Interventions in the School II (7.5 ECTS)**

See course description on previous pages.

### **PSY 716 Basic Clinical Skills (7.5 ECTS)**

This course focuses on the clinical thinking and the clinical methods necessary for assessment and psychotherapy. The course reviews the theory and research that will enable students to develop clinical skills needed for interviewing, managing difficult and sensitive topics and managing clients' emotional reactions; it will also teach them insight, self-management and how to define the problem. This course covers the issues and problems involved in clinical practice and presents the process of clinical practice. Specific clinical skills will be taught, discussed and practiced throughout the semester.

### **PSY 717 Adult Psychopathology (7.5 ECTS)**

This course will review the most common disorders of adulthood, with emphasis on diagnosis and the clinical picture; the developmental process; possible etiologies; the role of biological, hereditary, environmental and other factors in the development and maintenance of the problem. Scientifically based treatments for these disorders will be discussed. Also discussed are the clinical diagnostic classifications and the criteria that separate abnormal from normal behavior.

### **PSY 720 Advanced Seminar in Psychotherapy with Couples and Families (7.5 ECTS)**

This seminar focuses on the particularities of working with families and couples. Students will become familiar with behavioral, cognitive and systemic approaches and techniques to assess and treat these groups. Students will learn to anticipate and deal with the problems that arise from the associations between the different family members, and will be taught the role of the therapist in this system. Relevant clinical skills and related ethical issues will be discussed and practiced through simulations and clinical cases.

### **PSY 721 Seminar in Group Psychotherapy (7.5 ECTS)**

The purpose of this course is to provide an introduction to group psychotherapy. Several theoretical approaches to the development of a therapy group will be considered (e.g. behavioral, rational-emotive, person-centered, psychoanalytic). Specifically, students will acquire knowledge pertaining to issues of forming, developing, and leading different groups. Students will acquire the skills necessary for group leadership through experiential exercises and/or group experiences.

### **PSY 723 Seminar on Cognitive Behavioral Therapy (7.5 ECTS)**

The purpose of this course is to introduce students to Cognitive-Behavioral Theory, the related research, and psychotherapy practice. It will focus on how this theoretical approach is applied to the treatment of various psychiatric and psychological difficulties and disorders. It will also address: (a) issues arising

as treatment begins, such as assessment, decision-making, conceptualization, and treatment planning; (b) treatment techniques commonly used in CBT and the theories underlying them; (c) issues relating to the practice of CBT; (d) the efficacy of the approach; and (e) the benefits and limitations of identifying and using empirically supported treatment programs. The course will also introduce the “third wave” behavior therapies, such as dialectical behavior therapy (DBT) and acceptance and commitment therapy (ACT). Another objective of the course is to encourage students to think critically about their clinical work, and to do the same for the research literature that is related to this work. At the completion of the course, students should be competent in understanding, explaining, critically evaluating, teaching, and applying the philosophy. They should also be aware of the advantages and limitations, the research and the techniques of CBT, as well as the empirical approach to therapy. This course will consist of a mix of lectures, class discussion, videos, demonstrations, role plays, and student presentations.

#### **PSY 724 System Theory and Interventions Seminar (7.5 ECTS)**

Review of the various system models as they apply to psychological intervention. Emphasis will be placed on the family system, the couple system, groups, and organizational systems. Systemic thinking in relation to individual mental health problems, interpersonal difficulties, and intergroup conflict will be developed. Emphasis will be placed on developing students' ability to consider contextual factors (e.g. cultural, social, familial, work, school).

#### **PSY 725 Brief Psychotherapy Seminar (7.5 ECTS)**

Review of the different brief therapy models. Definition of the clinical problem and solution focused interventions for individual mental health problems and couple distress. Development of skills for brief psychotherapy treatment will be achieved through structured discussions, experiential learning, case studies, and role playing. This course is expected to further develop the students' knowledge and skills in basic psychotherapy.

#### **PSY 726 Specialized Seminar II: Clinical Geropsychology (7.5 ECTS)**

This course examines the psychological and health aspects of ageing. It covers normal/healthy ageing, and in addition, it presents research, assessment and intervention strategies, regarding typical problems of aging that arise in clinical practice. Information is presented within a framework that emphasises the interplay among biological, psychological and social factors and the way these impact the aging person's functioning. The role of the family will be explored in treatment programmes, that plan for problems likely to be faced in later stages of life. Clinical skills will be developed throughout the semester via taking on geropsychological cases at practicum sites, as well as through guided discussion, case study, and video case review.

#### **PSY 727 Advanced Seminar III: Clinical Forensic Psychology (7.5 ECTS)**

This seminar will train students to apply their clinical knowledge and skills in forensic settings. The course will first address the theories pertaining to aggression, criminality and antisocial behavior. The main focus, however, will be in working with these challenging populations; specifically focusing on the role of the Clinical Psychologist as an expert witness, and on the psychologist's assessment of suspects, witnesses and victims through clinical interviews, cognitive and personality tests and other methods. Students will also study intervention methods with perpetrators and victims of violence through simulations and studies of clinical cases. Ethical issues that arise in the forensic context will also be discussed.

#### **PSY 728 Psychological Interventions in Health Settings (7.5 ECTS)**

Health Psychology is the interdisciplinary field concerned with the development and integration of behavioral, psychosocial, and biomedical science knowledge, theory, and techniques relevant to the understanding of health and illness, and the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation. Behavioral medicine is the clinical or application branch of health psychology. Thus, behavioral medicine is a sub-specialty of both health psychology and clinical psychology, or the field where clinical psychology and health psychology merge. This class will cover a range of topics that are relevant to health psychology and behavioral medicine. In particular, it will examine basic psychological processes that influence health and illness including, but not limited to, perceived control, stress, behavioral conditioning, factors that influence behavioral change, self-efficacy and social support. It will also examine specific behaviors, illnesses, and physical conditions that are part of the behavioral medicine domain such as obesity, smoking, cancer, HIV, and hypertension. This course will focus on the interventions used in the field of clinical health psychology. Specific emphasis is placed on learning the skills associated with delivering cognitive behavioral psychotherapy in the health care setting. These interventions will focus on both behavioral health (i.e., psychiatric) outcomes as well as health-related behaviors such as medication adherence. In this course students will spend significant time learning the details of these interventions through observation of role-play and videotaped interventions, and practicing specific interventions through clinical case studies and role-play exercises.

#### **PSY 729 Specialized Seminar V: Severe Psychopathology, Diagnosis and Treatment (7.5 ECTS)**

Review of theory, research, and intervention for psychotic personality and other severe disorders. Emphasis will mainly be on adult severe psychopathology. Understanding of the development and maintenance of the psychopathology will be explored through theory and research. A bio-psychosocial framework will be applied to the understanding of severe psychopathology. Assessment and psychotherapy skills will be developed in the areas of suicidal and homicidal ideation. Empirically validated interventions and the importance of multidisciplinary treatment for severe psychopathology will be introduced. Methods used to develop the students' clinical skills include simultaneous therapy with clients with severe psychopathology at practicum sites, guided discussion, demonstration, and experiential learning that emphasizes skills training and practice.

#### **PSY 730 Neuropsychological Assessment (7.5 ECTS)**

Clinical neuropsychology focuses on the interaction between brain functioning and human behavior. The purpose of this course is to discuss neuropsychological assessment and to help the student differentiate between functional versus organic disorders. In addition, the impact of individual differences relating to intelligence, quality of education, and issues pertaining to test sensitivity and specificity will be integrated into the lectures. Neuropathologies such as Alzheimer's disease, traumatic brain injury, cerebral vascular accidents, neoplastic lesions and neuropsychiatric disorders will be discussed as they pertain to dementia, aphasia, apraxias, agnosias, amnesias, and personality disorders. The course will discuss the effects of neuropathology on neuropsychological function and will implement current clinical and valid assessment measures used to measure memory, attention-



concentration, language, perception, visual-spatial skills, verbal learning, and psychosocial functioning. Course prerequisites: PSY 200, PSY 706.

**PSY 733 Theories and Systems in Psychotherapy (compulsory) (7.5 ECTS)**

This course serves as an introduction to the various theoretical orientations that inform psychotherapy. Psychodynamic, cognitive, behavioral and other models will be discussed. Discussions will focus on how each model conceptualizes the etiology of psychopathology, how each model proceeds to diagnosis and the basic methods each model uses in treatment. Through this introduction, students will have access to a wide range of therapy tools that they can utilize in their clinical practice. They will also be able to select the theoretical approach that best suits them and which they can study in greater depth during their clinical internship.

**PSY 734 Clinical Practicum Seminar I (10 ECTS)**

**PSY 735 Clinical Practicum Seminar II (10 ECTS)**

**PSY 736 Clinical Practicum Seminar III (11 ECTS)**

**PSY 738 Clinical Practicum Seminar IV (11.5 ECTS)**

**PSY 739 Clinical Practicum Seminar V (7.5 ECTS) – OPTIONAL**

Various clinical topics are covered. The seminars will be devoted to discussion of clinical cases assigned to students through practicum sites. Professional issues in clinical psychology and students' professional development will be discussed. Enrollment is required for 4 semesters during practicum training at the community and the University of Cyprus' premises.

**PSY 747 Diagnostic Assessment II (Personality, Emotion and Symptomatology) (7.5 ECTS)**

This course aims to educate students in the methods used to assess personality and in the use of diagnostic tests and symptom-specific instruments. After a general introduction to the various methods used in personality assessment, emphasis will be placed on the administration and interpretation of widely used tests like the MMPI and NEO-FFI. Students will also acquire experience in the use of structured and semi-structured clinical interviews for purposes of diagnosis and in the use of symptom-specific tests to identify dysfunction in emotional and behavioral processes.

**PSY 748 Neuropsychological Rehabilitation (7.5 ECTS)**

This course is sequential to the course on neuropsychological assessment (PSY 730). Students will learn how to interpret assessment findings in order to develop a neuropsychological profile and therapeutic goals for neuropsychological rehabilitation. The course will discuss prominent theories of neuropsychological rehabilitation and evidence-based therapeutic methods and treatment techniques for the rehabilitation of neuropsychological disorders including memory, attention-concentration, perception, organization and categorization, language, and psychosocial disorders. Course prerequisites: PSY 730, PSY 706.

**PSY 749 Qualitative Research Methods in Psychology (7.5 ECTS)**

See course description on previous pages.

**PSY 788 Advanced Research Methods (7.5 ECTS)**

See course description on previous pages.

**PSY 789 Applied Data Analysis (7.5 ECTS)**

The course is designed to provide an integrated, in-depth approach to data analysis in psychological science research. An emphasis is placed on applied data analysis and accurate

conceptualisation, rather than statistical theory. Readings and in-class discussions will focus on theoretical and practical issues involved in the conception, implementation, and evaluation of empirical research in psychology. The course revolves around two themes, research methodology and applied statistics.

Course topics include experimentation, quasi-experimentation, participant observation, case studies, surveys, interviews and clinical trial implementation. These methodologies are presented and discussed in parallel with related statistical techniques so that students will be able to resolve questions related to study design, and also apply and evaluate different kinds of psychological investigations.

**PSY 790 Doctoral Seminar: Dissertation Development and Proposal Development for Research Programmes (7.5 ECTS)**

The aim of this course is to help students develop their dissertation and learn how to prepare a research proposal suitable for funding. The course will have a seminar format where students can express and develop ideas related to their theses, as well as describe their problems and ask questions in order to receive feedback from the instructor and from the rest of the participants in the group.

**Ph.D. IN PSYCHOLOGY**

**Structure**

The Doctoral programme leads to a Doctor of Philosophy (Ph.D.) Degree. Applications are accepted from students who have already earned a Master's Degree in Psychology or related field. The Doctoral degree consists of a minimum of 240 ECTS, which include the completion of six academic courses corresponding to 45 ECTS (7.5 ECTS each). Students are required to pass a comprehensive examination during the 5th semester of their studies, after which they may begin their Doctoral dissertation. The breakdown of the academic and dissertation courses are given below.

	ECTS
<b>I. Academic Coursework</b>	
<b>Required Courses</b>	<b>22.5</b>
Three of the following courses:	
PSY 790 Doctoral Seminar: Dissertation and Research Programme Development	7.5
PSY 789 Applied Data Analysis II (Prerequisite: PSY 604: Multivariate Statistics for the Behavioral Sciences)	7.5
PSY 788 Advanced Research Methods II 7.5 or PSY 749 Qualitative Research Methods in Psychology	7.5
<b>Elective Courses</b>	<b>30</b>
Four of the following courses:	
PSY 706 Neurophysiology	7.5
PSY 707 Family and Child Development	7.5
PSY 710 Advanced Seminar in Psychology	7.5
PSY 711 Psychopharmacology	7.5
PSY 712 Cognitive Science	7.5
PSY 713 Experimental Psychology	7.5
PSY 715 Language Development and Language Disorders	7.5

PSY 718	Psychology of Reading	7.5
PSY 719	Topics in Neuroscience	7.5
PSY 722	Cross-Cultural Issues in Psychology	7.5
PSY 730	Neuropsychological Assessment	7.5
PSY 731	Cognitive Neuroscience: Understanding the Biology of the Mind	7.5
PSY 741	Intergroup Relationships in Divided Societies	7.5
PSY 746	Social Psychology of Education	7.5
<b>Elective Course</b>		<b>7.5</b>

Select 1 of the elective list courses or one from another postgraduate course in the department.

## II. Comprehensive Examination and Doctoral Dissertation

PSY 777	Preparation for Final Exam (optional)	(1)
PSY 800	Comprehensive Examination	15

## Doctoral Dissertation (180 ECTS)

The procedures for conducting the Doctoral dissertation are presented and explained on the Department website. The dissertation may not be started until the successful completion of the Comprehensive Examination and it is supervised by a Department faculty member.

Courses	ECTS	
PSY 869	Research Level IA	15
PSY 870	Research Level IB	15
PSY 871	Research Level IIA	15
PSY 872	Research Level IIB	15
PSY 873	Research Level III	30
PSY 874	Research Level IV	30
PSY 875	Writing Level IA	15
PSY 876	Writing Level IB	15
PSY 877	Writing Level IIA	15
PSY 878	Writing Level IIB	15
PSY 879	Writing Level III	1
PSY 880	Writing Level IV	1
PSY 881	Writing Level V	1
PSY 882	Writing Level VI	1
PSY 883	Writing Level VII	1
PSY 884	Writing Level VIII	1
PSY 885	Writing Level IX	1
PSY 886	Writing Level X	1
<b>Eight Academic Courses (X 7.5 ECTS)</b>	<b>60</b>	
<b>Comprehensive Examination</b>	<b>15</b>	
<b>Research Levels</b>	<b>120</b>	
<b>Dissertation Writing Levels</b>	<b>60</b>	
<b>Total</b>	<b>255</b>	

## Number of Entrants and Entry Process

The Department admits about five Doctoral students each year. The positions are announced at least six months before the beginning of each academic year, according to the formal procedures of the Academic Affairs and Student Welfare Service. Applications are examined by the Postgraduate Programme Committee of the Department, which submits a proposal to the Departmental Board. The decisions of the Department are implemented only after approval by the Postgraduate Committee of the University.

Each Doctoral student will be assigned an Academic Advisor, who is a faculty member in the Department and who will supervise the student during his/her studies and dissertation process. The Department requires that the candidate secures the commitment of a faculty member, who agrees to mentor him/her during the Doctoral studies, prior to the admission interview (which is conducted as part of the admission decision process).

## Entry Criteria

- Master's degree from an accredited institution.
- Student performance as indicated on university transcripts. Special weight is given to grades in related courses.
- Minimum of three letters of recommendation (see Departmental Recommendation Form); at least 2 of the letters should be from former professors.
- Distinctions and special awards.
- Research participation, publications and scientific publications.
- Personal interview.

## Completion of the Ph.D. Programme

The following are required for the Ph.D. degree:

1. Successful completion of 240 ECTS including the 45 ECTS of academic coursework described above.
2. Successful performance on the comprehensive examination according to the internal regulations of the Department and the University.
3. Submission and successful defence of a Doctoral dissertation proposal.
4. Completion and successful defence of a Doctoral dissertation.

## Study Terms and Conditions

The student must maintain a Grade Point Average G.P.A. of seven out of ten or higher, otherwise he/she will be placed on academic probation. If a student's grade remains below seven for a second semester, the case is forwarded to the Departmental Board for review and possible dismissal.

## Courses Description

All courses are credited with 7.5 ECTS.

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### PSY 706 Neurophysiology (7.5 ECTS)

See course description on previous pages.

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### PSY 707 Family and Child Development (7.5 ECTS)

See course description on previous pages.

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### PSY 710 Advanced Seminar in Psychology (7.5 ECTS)

This course allows an in-depth review and analysis of research and issues on specific advanced topics in the areas of cognitive, developmental, and educational psychology. Students will also be given the opportunity to pursue a research topic in greater depth.

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### PSY 711 Psychopharmacology (7.5 ECTS)

See course description on previous pages.

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### PSY 712 Cognitive Science (7.5 ECTS)

See course description on previous pages.

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### PSY 713 Experimental Psychology (7.5 ECTS)

See course description on previous pages.

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### PSY 715 Language Development and Language Disorders (7.5 ECTS)

See course description on previous pages.

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### PSY 718 Psychology of Reading (7.5 ECTS)

Overview of psychological research investigating the perceptual and cognitive processes that occur during reading. Emphasis is placed on the mental representations that support reading (general conceptual knowledge, linguistic knowledge and skill) and that result from the comprehension of text (referential representation, text model). In addition, topics such as reading ability and its measurement and learning from text, are also examined.

*Prerequisites for the master programme: Cognitive Science, Learning and Cognition.*

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### PSY 719 Topics in Neuroscience (7.5 ECTS)

See course description on previous pages.

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### PSY 722 Cross-Cultural Issues in Psychology (7.5 ECTS)

See course description on previous pages.

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### PSY 730 Neuropsychological Assessment (7.5 ECTS)

See course description on previous pages.

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### PSY 731 Cognitive Neuroscience: Understanding the Biology of the Mind (7.5 ECTS)

See course description on previous pages.

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### PSY 741 Intergroup Relationships in Divided Communities (7.5 ECTS)

See course description on previous pages.

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### PSY 746 Social Psychology of Education (7.5 ECTS)

See course description on previous pages.

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### PSY 788 Advanced Research Methods II (7.5 ECTS)

See course description on previous pages.

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### PSY 789 Applied Data Analysis II (7.5 ECTS)

See course description on previous pages.

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### PSY 790 Doctoral Seminar Dissertation and Research Programme Development (7.5 ECTS)

See course description on previous pages.

## Research Interests of the Academic Staff

### • Marios Avraamides, Professor

Organisation of spatial memory, Spatial updating and orientation, Ego motion perception, Reasoning in Virtual Environments.

### • Fofi Constantinidou, Professor

Neuroscience of language and cognition, Effects of acquired neurological disorders on cognition, Clinical trials on the effectiveness of rehabilitation programs in patients with acquired neurocognitive disorders.

### • Irene - Anna Diakidou, Professor

Comprehension and learning from text, Knowledge acquisition and conceptual change, Creativity.

### • Kostas Fantis, Associate Professor

Social and emotional development, Developmental psychopathology, Risk and protective processes, Development of different types of psychopathology (e.g. attention deficit hyperactivity disorder and conduct disorder), Desensitization to media violence.

### • Stelios N. Georgiou, Professor

Development in context, Application of the systems theory, Parental involvement, Achievement attributions by parents and teachers.

### • Irimi Kadianaki, Assistant Professor

Social psychological dimensions of immigration ( i.e. issues of identity, dealing with stigma, otherness, citizenship). Social representations of migration, sexual orientation, mental health/illness, disability and identity of people belonging to stigmatised groups (people diagnosed with mental illness, disability, LGBT individuals). Qualitative methodology.

### • Maria Karekla, Assistant Professor

Interface between anxiety-related disorders and behavioural medicine; Investigation of individual difference and other factors in the development, maintenance, assessment, and treatment of stress and anxiety-related problems (in clinical and non-clinical populations); Psychophysiology and new innovative methods in the exploration of these factors and problems; Informing current therapeutic procedures (e.g., Cognitive Behaviour Therapy and Acceptance and Commitment Therapy) by subjecting some of the basic assumptions of clinical behaviour analysis to experimental verification with the aim of achieving behaviour change.

### • Michalis Michaelides, Assistant Professor

Psychometrics and testing, Research methods, Assessment conceptions.

### • Georgia Panayiotou, Professor

Emotion and cognition, Psychophysiology, Self/focused attention, Disruptive behavior disorders in children.

### • Timotheos Papadopoulos, Professor

Reading development and acquisition of reading skills, Reading difficulties and subtypes, Cognitive profiles of poor readers, Diagnosis and remediation, Attention and planning deficits.

### • Charis Psaltis, Associate Professor

Social interaction, learning and development. Co-operative learning. Genetic social psychology. Social representations of gender. Intergroup contact and intergroup relations. Intercultural education and integrated schools. Development of national identities. History teaching and collective memory.

### • Athanasios Raftopoulos, Professor

Epistemology, Philosophy and history of science, Cognitive science, Philosophy of mind.

### • Georgios Spanoudis, Associate Professor

Cognitive development, memory and intelligence, Language acquisition and language disorders, Pragmatics and semantics, Psychophysiology.

### • Panayiotis Stavriniades, Assistant Professor

Research focuses on two main areas: First, it investigates psychopathic traits (lack of empathy and moral judgment, narcissistic traits, and extreme impulsivity) that lead to particular forms of childhood aggression. Second, it examines the relationship between various types of parenting and adolescent abnormal adjustment outcomes (substance use & delinquency).

### • Andria Shimi, Lecturer

Her research examines the development of attention and memory at the behavioral, neural, and genetic level in healthy and clinical child populations. More information on her research can be found at the lab's website.

### • Alexandros Lordos, Lecturer

Interested in investigating how the acquisition of life skills can contribute to mental health, employability and constructive citizenship outcomes, as well as in strengthening resilience against micro-systemic and macro-systemic adversities.

## Contact Details

### DEPARTMENT SECRETARIAT

#### Maro Ioannou

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[www.ucy.ac.cy/psych](http://www.ucy.ac.cy/psych)



# Department of Social and Political Sciences

[www.ucy.ac.cy/sap](http://www.ucy.ac.cy/sap)

The Department of Social and Political Sciences promotes research and knowledge in the fields of Sociology, Political Science and Journalism. It offers undergraduate and postgraduate programmes in these three fields.

In addition, the Department offers the following programmes:

- M.A. in Political Science
- Ph.D. in Sociology
- Ph.D. in Political Science

The Department also participates in the consortium of universities offering the European Master in Human Rights and Democratisation. The Consortium consists of 41 universities from 28 European Union member states and constitutes an example of European inter-university co-operation.

## Introduction

Our mission is to develop and disseminate significant knowledge about Politics, Sociology and Journalism at the local, national and international levels.

The research interests of the members of the Department are geared towards the needs of Cypriot society, but they also have an international orientation. Emphasis is placed upon interdisciplinary research in the context of wider research projects both in Cyprus and abroad.

## MASTER PROGRAMME IN POLITICAL SCIENCE WITH SPECIALIZATION IN INTERNATIONAL RELATIONS OR EUROPEAN POLITICS

The M.A. programme comprises the following:

- (A) Taught Courses
- (B) Dissertation
- (C) Internship Programme (optional)

### (A) Taught Courses (60 ECTS)

Each candidate is required to complete eight courses. Three of them are compulsory for both directions, three are compulsory as specialization courses, while the remaining two are chosen from the other direction of specialization in the M.A. programme or from Special Issues). Each taught course is credited with 7.5 ECTS.

#### (1) Core Courses

*[all three are compulsory for both specialization directions]*

- SPS 540 International Political Theory
- SPS 541 Regional and International Governance
- SPS 500 Research Methods

#### (2) Specialization Courses

#### (2.1) Compulsory courses for the International Relations direction and optional for the European Politics direction

- SPS 640 International Political Economy
- SPS 641 Diplomacy
- SPS 642 International Law

#### (2.2) Compulsory courses for the European Politics direction and optional for the International Relations direction

- SPS 643 Contemporary European Politics
- SPS 644 European Political Economy
- SPS 645 European Union as International Actor

#### (3) Additional Courses

*(Choice of two optional courses, either from the other specialization direction in 2.1 or 2.2 above and/or from the courses below periodically taught by Visiting Academics)*

- SPS 513 Special Issues in International Relations
- SPS 515 Special Issues in European Politics

### (B) Dissertation (30 ECTS)

In their third semester, students attend two courses and begin writing their dissertation. The dissertation should be around 15,000 words, including bibliography. The fourth semester is devoted to writing the dissertation.

### (C) Internship Programme (10 ECTS)

Students have the option of joining a workplace, organization, NGO or other institution in Cyprus related to political science for a period of two months. At the end of the internship, the students will be evaluated by the host organization and by the Internship Coordinator on the basis of a Short Activity Report.

**Total: 90ECTS, 100 ECTS (with Internship)**

## Featured Courses per Semester

	ECTS
<b>First Semester</b>	
<b>3 Courses</b>	<b>22.5</b>
SPS 540 International Political Theory	7.5
SPS 640 International Political Economy	7.5
SPS 642 International Law	7.5
SPS 643 Contemporary European Politics (or any other Optional Course for the specialization in European Politics)	
<b>Second Semester</b>	
<b>3 Courses</b>	<b>22.5</b>
SPS 541 Regional and International Government	7.5
SPS 641 Diplomacy	7.5
SPS 644 European Political Economy	7.5
SPS 645 European Union as International Actor (or any other Optional Course for specialization in International Relations)	7.5
<b>Summer Semester: Optional Internship Programme (10 ECTS)</b>	
<b>Third Semester</b>	
<b>2 Courses</b>	<b>15</b>
SPS 500 Research Methods Optional Course	
<b>Fourth Semester</b>	
<b>Dissertation</b>	<b>30</b>

## Submission of Application

To be eligible for admission, students must submit complete applications prior to the deadline set by the University of Cyprus. Applications must include the following:

1. A photocopy of a university undergraduate degree. In lieu of a university degree, the following are also acceptable: A degree or a qualification that has been approved by KYSATS (Cyprus Council for the Recognition of Higher Education Qualifications) as being equivalent to a university degree; evidence of imminent university graduation by the end of the week before enrolment begins.
2. A detailed transcript of undergraduate degree results.
3. A brief Curriculum Vitae.
4. A certificate attesting to English language proficiency, as well as certification of Greek language proficiency for graduates of non-Greek universities.
5. Two reference letters (at least one from an academic).
6. A brief statement (up to two pages in length) describing the applicant's research goals and interests.

## Entry Criteria for the M.A. Programme

- (a) Candidates for the M.A. programme should be graduates of an accredited university department, holding a degree in Political Science or a relevant field.
- (b) Graduates of Greek universities or the University of Cyprus should normally have a grade of 7.0 or higher. The equivalent grade is required from candidates-graduates of other universities.
- (c) The Programme is taught in Greek; however, the dissertation and other academic essays may be written in English or another language, with the permission of the student's Supervisor and the M.A. Coordinator.
- (d) A good knowledge of the English language is required. The knowledge of an additional foreign language will be considered as an extra qualification.
- (e) The Departmental Council, upon recommendations from the Postgraduate Studies Committee, makes the final decisions on candidates' admission to the programme.
- (f) The Programme Committee will determine whether a candidate must undergo an interview or/and a written examination, even if all entry requirements are satisfied.
- (g) Each year a total of 20 candidates will be admitted to the programme (10 in each specialization).

## Study Rules

These are regulated according to the University Postgraduate Study Rules.

## Requirements for the M.A. Degree

An Academic Advisor is assigned to each new entrant to the M.A. course. A total of four semesters of study is required, during which time the student must successfully complete 100 ECTS, allocated as follows:

	ECTS
Courses	60
Dissertation	30
Internship Programme (optional)	10

Students will be awarded an M.A. in Political Science (International Relations) or M.A. in Political Science (European Politics).

## Courses Description

### SPS 500 Research Methods (7.5 ECTS)

The course will help students understand how to develop research projects using scientific methods and approaches. The module will include: ways of choosing research questions, the importance of reviewing bibliography, developing theoretical research frameworks, categories of variables, research questions, research hypotheses, formulation of questionnaires and other methods of measuring, the validity and credibility of methods of measuring, internal validity, research ethics, sampling techniques,

methods of data collection, data analysis and interpretation of results using the statistics package SPSS, various kinds of research, authoring a scientific research paper.

#### **SPS 513 Special Issues in International Relations (7.5 ECTS)**

This course examines important issues of international relations, of concern to both the scholarly and the 'international' community. Such issues include international security, NGO activism, as well as global communication, environmental and intercultural relations.

#### **SPS 515 Special Issues in European Politics (7.5 ECTS)**

This course examines important issues of European politics, of concern to the scholarly community as well as the 'European' community. Such issues include the legitimacy crisis of European democracy and the challenges facing the Europe of the 21st century.

#### **SPS 540 International Political Theory (7.5 ECTS)**

This course examines international political theory as it has emerged and developed from classical and modern political theory. It makes an historical and philosophical investigation into key concepts and their use in international politics, that is to say, their acceptance, interpretive debate, their proper, improper or rhetorical use by the various political actors on the world stage. Specifically, the course examines concepts such as sovereignty, governance, power, violence, peace, security, civilization, development, order, community, self-determination, legitimation, friendship, enmity, coexistence, solidarity, justice, integration, etc.

#### **SPS 541 Regional and International Governance (7.5 ECTS)**

The establishment of international and regional organisations and institutions is one of the most notable trends of the post-war era. Indeed, there are more than 5,000 international organisations in the world today. The course examines theories and practices of governance at the regional and international level, looking at the factors affecting the establishment of international organisations, their evolution and future, as well as various trends in international governance. The course also analyses the problems and pathologies of international organisations and their formal institutional structures, and investigates the general and specific nature of organisations of regional and international magnitude. In particular, this course will offer insight into the functioning of international organizations such as the United Nations, World Bank, WTO, IMF etc., and regional institutions like the EU, the African Union, ASEAN, Mercosur, etc. Additionally, this module examines such themes as bureaucracy, democracy, interventionism and resistance movements.

#### **SPS 640 International Political Economy (7.5 ECTS)**

This course examines international relations in regard to economic transactions among nations, including discussion of the basic poles of international economy and the pattern of uneven economic development among states. There will be an emphasis on modern trends of economic interpenetration, interdependence and the dominance of 'national' economies as well as of leading international institutions (such as the World Trade Organisation and the IMF), which have decisive repercussions on the institutional framework or/and on the crisis management of the 'globalised' economy.

#### **SPS 641 Diplomacy (7.5 ECTS)**

This course examines diplomatic theory and practice from the perspective of interstate relations and beyond. Specifically, it

surveys the development of diplomatic thought, the different theoretical approaches to diplomacy, the traditional and emerging actors, and the new structures and processes of diplomatic practice. It looks at the scope and extent of diplomatic relations, diplomatic law, the types of diplomatic mission, diplomatic communication, public diplomacy, mediation and negotiation. It discusses case studies like coercive diplomacy, crisis management, and celebrity diplomacy.

#### **SPS 642 International Law (7.5 ECTS)**

This module examines the basic concepts and principles of international law, as well as its law-making and enforcement mechanisms. It will give an overview of the traditional and contemporary theoretical approaches to international law and will examine its sources (treaties, customs, etc.) and subjects (states, international organizations, etc). Issues of statehood and recognition, as well as the role of non-state actors will be emphasized. The module will also examine the fundamental rules of international law, such as the prohibition on the use of force in international relations, the principle and means of peaceful settlement of disputes, as well as particular fields, such as the law of the sea.

#### **SPS 643 Contemporary European Politics (7.5 ECTS)**

Europe is comprised of states with very different political systems, social structures and cultural characteristics. This course examines the political systems of various European states, and attempts to highlight particular issues arising from their heterogeneity as well as from the need to formulate and apply different or/and common policies. It looks closely at the most important differences among states, common policies. It looks closely at the most important differences among states, and examines how their particularities have contributed to the development of European institutions. On the other hand, through the analysis of specific policies, the module examines how the EU affects the evolution of institutions and practices in other member states.

#### **SPS 644 European Political Economy (7.5 ECTS)**

European integration is a complex, dynamic process comprising two main and interdependent components-economic and political. During the past decades, these components have developed at different rates, leading to imbalances, problems, and deep and unresolved issues regarding the institutional framework of the EU. The course will focus on the issue of the sustainability of the EU as an institution — characterized as it is by uneven levels of economic development, and rapidly changing geography.

#### **SPS 645 The EU as International Actor (7.5 ECTS)**

This course examines and analyses the role of the EU in the world, through the historical evolution of its foreign relations and policies: Common Foreign Policy and Security Policy, Trade Policy, Development Policy, Neighbourhood Policy, issues of Human Rights and Democratisation, the role of European diplomacy in resolving international conflicts, etc. Today, the EU constitutes a significant, unconventional actor on the international stage, with more authority than conventional international institutions, and less authority than that of states. How does the EU participate in international institutions? How does its involvement differ depending on the level of integration in various policy fields? What are the changes due to its participation? What changes are due to the existence of the European External Action Service? How are its role and policy affected by the intrinsically different approaches or foreign policies of its member states? These questions are open to multiple answers. Using the wide-ranging

theoretical discourse developed around these issues, the course will offer a rich framework for discussing the phenomena shaping the network of foreign relations and policies of the EU.

## EUROPEAN MASTER IN HUMAN RIGHTS AND DEMOCRATISATION

The Department of Social and Political Sciences participates in the Consortium of universities offering the European Master in Human Rights and Democratisation. The Consortium consists of 41 universities from the 28 European Union member states and constitutes an example of European inter-university co-operation.

The academic year of the European Master Programme in Human Rights and Democratisation is divided into two semesters:

- The first semester (September to January) in Venice/ Lido.
- The second (February to July) at an E.M.A. participating university, situated in the member states of the European Union. This second part of the Programme is conceived as a European exchange, and students are expected to undertake their second semester research in a country other than their own.

### Admission

Applications are to be sent to the Secretariat of the European Inter-University Centre for Human Rights and Democratisation in Venice, Italy.

#### EIUC Secretariat

European Master Degree in Human Rights and Democratisation (E.M.A.)  
Monastery of San Nicolò  
26 Riviera San Nicolò  
30126 Venice - Lido, Italy  
Tel.: +39 041 2720911  
Fax.: +39 041 2720914  
E-mail: [secretariat@eiuc.org](mailto:secretariat@eiuc.org)

#### For more information:

[ec.europa.eu/external\\_relations/human\\_rights/ema/index\\_en.htm](http://ec.europa.eu/external_relations/human_rights/ema/index_en.htm)  
[www.emahumanrights.org](http://www.emahumanrights.org)  
[www.eiuc.org](http://www.eiuc.org)

#### Coordinator of the European Master

**Kalliope Agapiou-Josephides, Assistant Professor**  
Tel.: (+357) 22894562  
E-mail: [agapiouj@ucy.ac.cy](mailto:agapiouj@ucy.ac.cy)

### Participating Universities

The European Master Programme in Human Rights and Democratisation is organised through the joint efforts of the following participating universities: Abo Akademi University (Finland), Adam Mickiewicz University in co-operation with the Poznan Human Rights Centre (Poland), Aristotle University of Thessaloniki (Greece), Masaryk University of Brno (Czech Republic), Ca' Foscari

University of Venice (Italy), Catholic University Leuven (Belgium), University of Coimbra (Portugal), Comenius University of Bratislava (Slovak Republic), University of Copenhagen (Denmark), University of Cyprus (Cyprus), University of Deusto, Bilbao (Spain), National University of Ireland, Dublin - University College Dublin (Ireland), University of Hamburg (Germany), University of Helsinki (Finland), National University of Ireland, Galway (Ireland), University of Graz (Austria), Eotvos Lorand University of Budapest (Hungary), University of Latvia (Latvia), Université Libre de Bruxelles (Belgium), New University of Lisbon (Portugal), University of Ljubljana (Slovenia), Lund University (Sweden), Université du Luxembourg (Luxembourg), Maastricht University (Netherlands), University of Malta (Malta), Université de Montpellier (France), University of Nottingham (United Kingdom), University of Padua (Italy), Panteion University, Athens (Greece), Queen's University of Belfast (United Kingdom), Université Robert Schuman, Strasbourg (France), Ruhr-University Bochum (Germany), University of Seville (Spain), University of Southern Denmark in co-operation with the Danish Institute for Human Rights (Denmark), University of Tartu (Estonia), Uppsala University (Sweden), Utrecht University (The Netherlands), University of Vienna (Austria), Vilnius University (Lithuania), University of Bucharest (Romania) and Sofia University St Kliment Ohridski (Bulgaria).

### Ph.D. Programmes

The Department of Social and Political Sciences offers two Ph.D. programmes:

- Ph.D. Programme in Sociology
- Ph.D. Programme in Political Science

### Admission Requirements and Study Rules

For information on the admission requirements for Ph.D. programmes, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department's Secretariat.

In addition to the general requirements, good knowledge of English is a prerequisite. Knowledge of a second European language will be considered an additional qualification. The annual number of entrants to the Ph.D. programme is six.

It is also noted that according to the Admission and Attendance Regulations "within the framework of student exchange, a Ph.D. student may spend up to one calendar year of study at a university abroad."

### Requirements and Structure

For information on the requirements, the structure of the Ph.D. programmes, application requirements and registration, please refer to the Admission and Attendance Regulations – Application Requirements or consult the Graduate School or the Department Secretariat. In brief, the requirements and the structure of the Ph.D. programmes are as follows:



### (1) Research Supervisor

A research supervisor, appointed by the Department Council, is required to guide the student toward the completion of the Ph.D. dissertation.

### (2) Course Attendance

The staff responsible for the course may advise any Ph.D. candidate to follow courses from the M.A. programme if they consider this necessary for the Ph.D. candidate's research, and/or that doing so will help develop the research topic.

### (3) Approval of Ph.D. Proposal

During the third semester of postgraduate study, Ph.D. candidates conduct preliminary research, which will lead to a detailed Ph.D. proposal.

### (4) Comprehensive Examination

Each candidate is required to successfully complete a comprehensive written examination, no later than the fifth semester. The department organises these examinations at least once a year.

### (5) Ph.D. Thesis

The completion of an original doctoral thesis is another requirement of the programme. The thesis must be an important contribution to the subject. The Ph.D. thesis may be written in a language other than Greek upon approval by the research supervisor.

### (6) Defence of Ph.D. Thesis

The thesis is defended before a five-member examining board.

### (7) Duration of Study

A Ph.D. degree may be completed in a minimum period of six (6) semesters and a maximum of sixteen (16) semesters starting from the date of admission.

### (8) Successful Completion of 240 ECTS

The credits break down as follows:

	ECTS
Courses (credited by the M.A. programme)	60
Research (4 semesters x 30 ECTS)	120
Writing of Postgraduate Thesis (2 semesters x 30 ECTS)	60
<b>Total</b>	<b>240</b>

## Submission of Application - Registration

In addition to the general requirements, applicants must also consider the following:

- Candidates, who have not yet completed their M.A. programme but are enrolled and are studying for the degree, may be accepted provided they complete their studies by the 31st of July of the year that they will be enrolling for the Ph.D. course, following the approval of the Postgraduate Committee.
- Evidence (e.g., certificate) of good knowledge of the English language.
- A statement describing the candidate's scholarly and research interests.

## Research Interests of the Academic Staff

• **Kalliope Agapiou-Josephides, Assistant Professor**  
Holder of Jean Monnet Chair in European Political Integration

European political integration with an emphasis on institutional aspects, Common foreign and security policy, Euro-Mediterranean partnership. European Union and Cyprus with an emphasis on accession and harmonization process. Women and politics.

• **Costas M. Constantinou, Professor**

Diplomacy, International political theory, International rules, Norms and exceptions, International conflicts, Politics of the Cyprus conflict.

• **Kyriakos Demetriou, Professor**

Ancient political thought with emphasis on the Sophists, Plato and classical constitutions. Issues in modern political thought, especially British Empiricism, Liberalism (seventeenth century) and philosophical radicalism/ utilitarianism (nineteenth century). The reception of classical antiquity in modern European historiography. Contemporary research interests include theories of democracy and the interpretation of Platonic political philosophy.

• **Antonis Ellinas, Associate Professor**

Comparative politics: Political parties, bureaucracies, media, political trust.

• **Nayia Kamenou, Lecturer**

Main research interests in Gender Studies, LGBTI Studies and Queer Studies with an emphasis on: The interrelations between nationhood, ethnic identities, gender and sexuality; the impact of Europeanization on LGBTIQ identities, rights and political mobilization; the role of women and gender in the formation of political agency and political identities; and the role of women and gender in peace-building processes.

• **Savvas Katsikides, Professor,**  
Holder of Jean Monnet Chair

Industrial sociology, Sociology of technology, The Relation between technology and society, Theoretical sociology, Sociology of work and research methods, European economic and social integration, Basic research in sociological theory.

• **Iosif Kovras, Associate Professor**

Transitional justice, Human rights, Conflict analysis and resolutions.

• **Iasonas Lambrianou, Assistant Professor**

Quantitative methods and measurement in social sciences, Sociology of education, Political trust and participation.

• **Michalis Moutselos, Lecturer**

Comparative politics, Social movements, Immigration, Europeanization processes.

• **Yiannis Papadakis, Professor**

The study of nationalism in a comparative-historical perspective as a process of interaction and negotiation through social action. The construction and contestation of social memory through commemorative rituals. Structure and characteristics of historical narratives. Representations of the past in museums. The relation between language and dialect. The social negotiation of conflict, danger, uncertainty. Fieldwork has been conducted in Nicosia (both sides), Turkey, Pyla.

• **Victor Roudometof, Associate Professor**

Globalization and international studies, American and European studies, Sociology of religion, World-historical and comparative-historical sociology and world history, Cultural studies, Political sociology, especially nationalism and ethnicity in the Balkans and

the Ottoman Empire, Race, ethnicity, transnationalism and international migration.

• **Stavros Tombazos, Associate Professor**

Political economy with emphasis on issues and aspects related to globalization, European political and economic integration, systems of international hegemony and dependence, sustainable development, and the relation between economic dynamics and ecological problems. Political philosophy with focus on the German political theories of the 19<sup>th</sup> and 20<sup>th</sup> centuries. Other research interests in the areas of theories of the state and of social classes, civil society and social movements.

• **Dimitris Trimithiotis, Lecturer**

New production, Media discourse, Political communication, Digital journalism, Peace journalism, Research methods.

• **Antis Loizides, Lecturer**

Political theory, History of political thought, British utilitarianism.

• **Daniela Donno, Associate Professor**

International organization and norms, Electoral integrity, Women's rights, Authoritarian regimes.

• **Philemon Bantimaroudis, Associate Professor**

Agenda setting theory, Framing theory, Gatekeeping, Group-mediated delusions.

• **Theodora Maniou, Lecturer**

Journalism, Media studies, Broadcasting, Multimedia.

• **Sophia Stavrou, Lecturer**

Sociology of education with an emphasis on social inequalities in education and in the sociology of curriculum, European social policy, especially relations between higher education and employment, New governance in social policy, internationalization and the social impact of quality assessment and quality assurance mechanisms, The evolution of academic disciplines and knowledge, in particular in humanities and social sciences, Youth migration and youth employment, Qualitative research methods, especially discourse analysis in the social sciences.

• **Venetia Papa, Lecturer**

New media, Data journalism, On line activism, Internet and media.

## Contact Details

### COORDINATOR OF POSTGRADUATE STUDIES

**Costas M. Constantinou, Professor**

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E-mail: Constantinou.m.costas@ucy.ac.cy

### DEPARTMENT SECRETARIAT

**Elena Petridou-Challouma**

Tel.: 22894564, Fax: 22894559

E-mail: elenap@ucy.ac.cy

**Stavroula Stavrou-Sofroniou**

Tel.: 22894561, Fax: 22894559

E-mail: sofroniou.stavroula@ucy.ac.cy

[www.ucy.ac.cy/sap](http://www.ucy.ac.cy/sap)

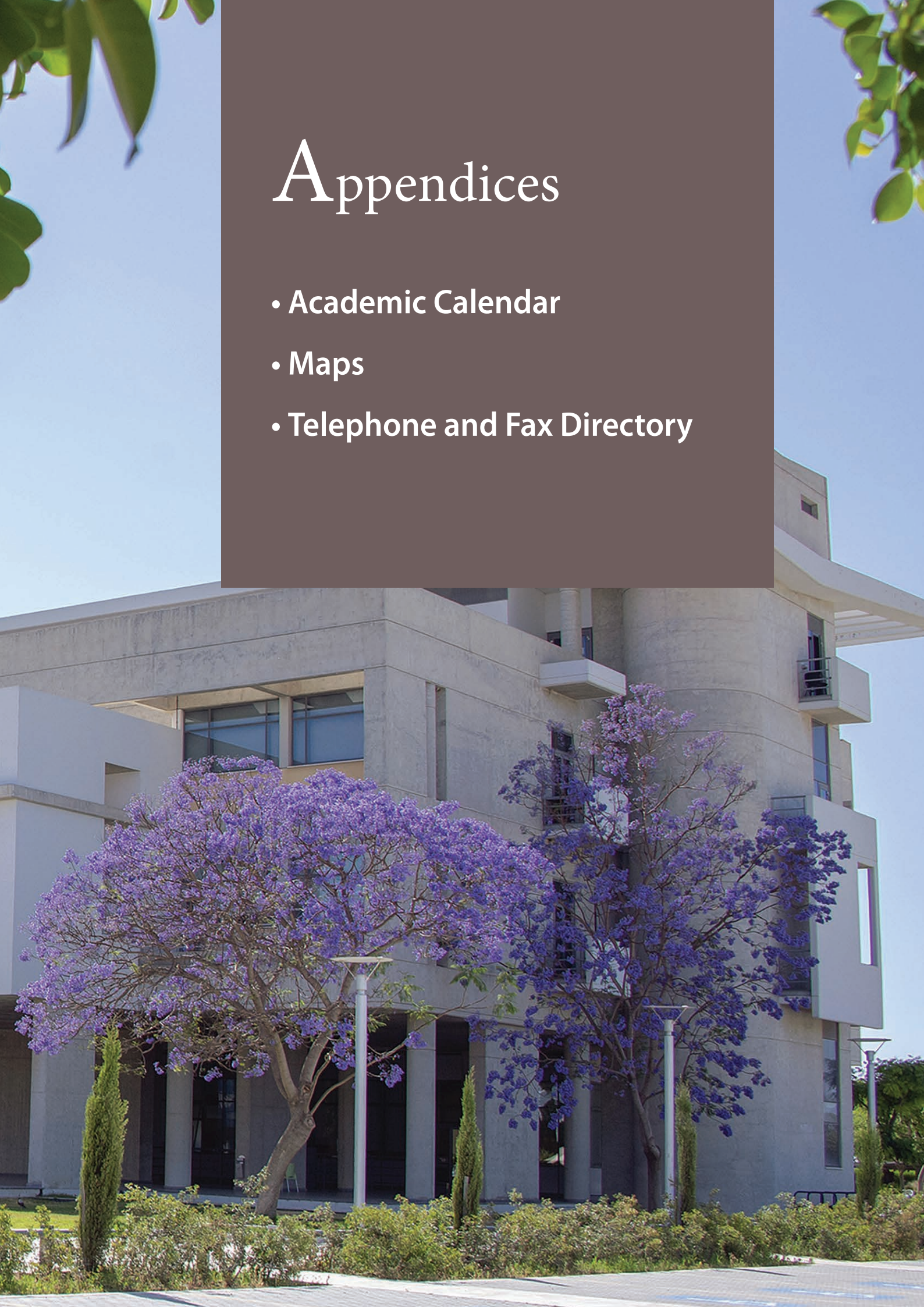






# Appendices

- Academic Calendar
- Maps
- Telephone and Fax Directory





# APPENDICES

## ACADEMIC CALENDAR

The academic calendar is available on the University's website at [www.ucy.ac.cy/calendar-en](http://www.ucy.ac.cy/calendar-en)

## MAP

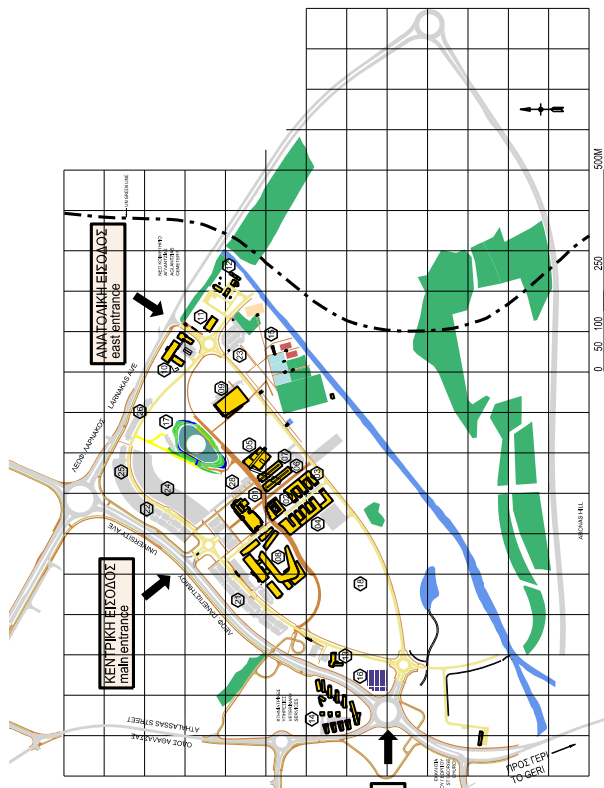
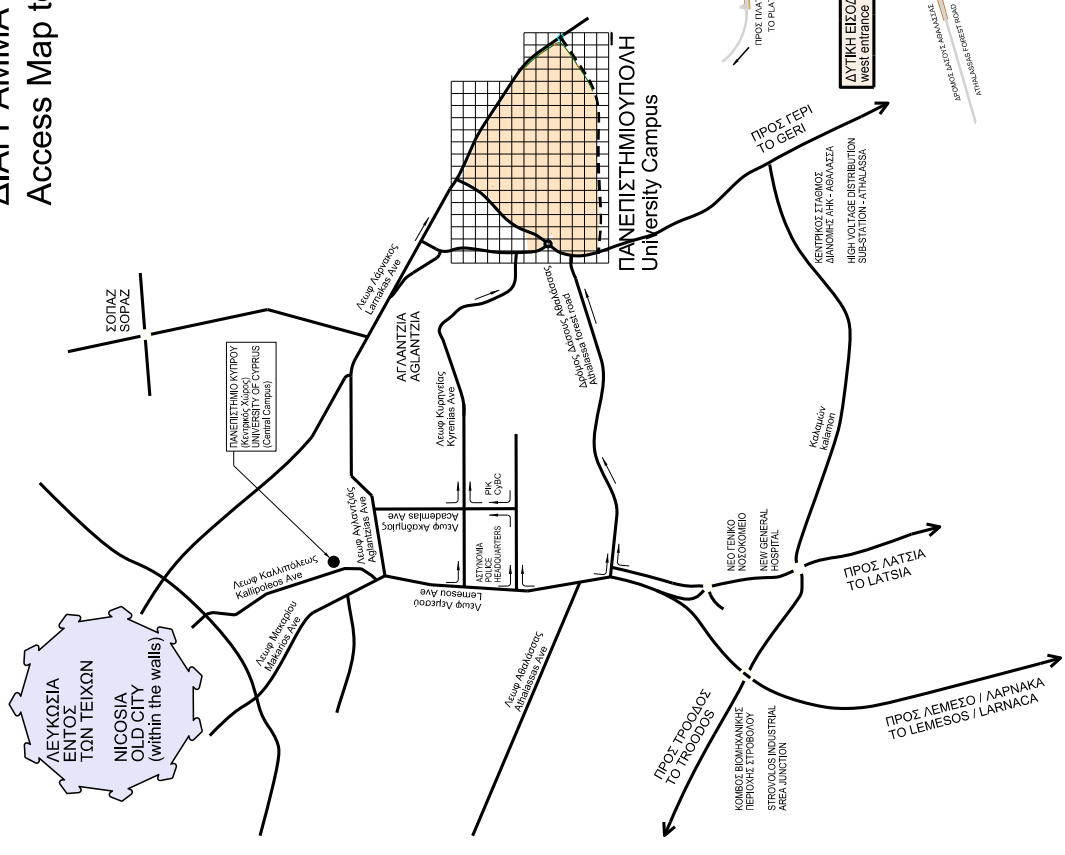


For detailed maps: [www.ucy.ac.cy/maps-en](http://www.ucy.ac.cy/maps-en)

# ACCESS MAP TO THE UNIVERSITY CAMPUS

## ΔΙΑΓΡΑΜΜΑ ΠΡΟΣΒΑΣΕΩΝ ΣΤΗΝ ΠΑΝΕΠΙΣΤΗΜΙΟΥΠΟΛΗ Access Map to the University Campus

- ΥΠΟΜΟΝΙΑ ΚΤΗΡΙΑ ΠΑΝΕΠΙΣΤΗΜΙΟΥΠΟΛΗΣ**
- |    |  |    |   |
|----|--|----|---|
| 01 | ΚΤΗΡΙΟ ΣΥΝΘ. ΣΥΓΚΑ. ΑΝΑΣΤ. Γ. ΛΕΒΕΝΤΗΣ           | 01 | UNIVERSITY HOUSE - Anastasios G. Leventis       |
| 02 | ΧΩΡΟΣ ΔΑΔΑΖΚΑΛΙΑΣ (ΧΩΔΑ 01)                      | 02 | COMMON TEACHING FACILITIES (CTE 01)             |
| 03 | ΣΧΟΛΗ ΘΕΤΙΚΩΝ & ΕΦΑΡΜΟΣΜ. ΕΠΙΣΤΗΜΩΝ (ΘΕΕ 01)     | 03 | FACULTY OF PURE & APPLIED SCIENCES (FST 01)     |
| 04 | ΣΧΟΛΗ ΘΕΤΙΚΩΝ & ΕΦΑΡΜΟΣΜ. ΕΠΙΣΤΗΜΩΝ (ΘΕΕ 02)     | 04 | FACULTY OF PURE & APPLIED SCIENCES (FST 02)     |
| 05 | ΣΧΟΛΗ ΟΙΚΟΝ. ΕΠΙΣΤΗΜΩΝ & ΔΙΟΙΚΗΣΗΣ (ΟΕΑ 01)      | 05 | SCHOOL OF ECONOMICS & MANAGEMENT (FEB 01)       |
| 06 | ΣΧΟΛΗ ΟΙΚΟΝ. ΕΠΙΣΤΗΜΩΝ & ΔΙΟΙΚΗΣΗΣ (ΟΕΑ 01)      | 06 | FACULTY OF ECONOMICS & MANAGEMENT (FEB 01)      |
| 07 | ΣΧΟΛΗ ΟΙΚΟΝ. ΕΠΙΣΤΗΜΩΝ & ΔΙΟΙΚΗΣΗΣ (ΟΕΑ 01)      | 07 | FACULTY OF ECONOMICS & MANAGEMENT (FEB 02)      |
| 08 | ΑΘΛΗΤΙΚΟ ΚΕΝΤΡΟ (ΑΘΚΕ)                           | 08 | INDOOR SPORTS HALL (ISPH 01)                    |
| 09 | ΑΘΛΗΤΙΚΟ ΚΕΝΤΡΟ (ΑΘΚΕ)                           | 09 | SERVICES BUILDINGS (SBD)                        |
| 10 | ΚΤΗΡΙΑ ΛΕΙΟΥΡΓΙΚΗΣ ΥΠΟΣΤΗΡΙΞΗΣ (ΚΛΥ)             | 10 | ENERGY CENTRE (ENC)                             |
| 11 | ΕΝΕΡΓΕΙΑΚΟ ΚΕΝΤΡΟ (ΕΚΚ)                          | 11 | LABORATORY CENTRE (LC)                          |
| 12 | ΕΡΓΑΣΤΗΡΙΟ ΚΑΤΑΡΤΙΣΗΣ (ΕΚΑ)                      | 12 | CAMPUS SUPPLEMENTARY OFFICES (CSO)              |
| 13 | ΣΥΜΠΕΡΑΦΟΡΑΤΙΚΑ ΓΡΑΦΕΙΑ ΠΑΝΩΝΗΣ (ΣΠ)             | 13 | RESIDENTIAL A (RSRA01-14)                       |
| 14 | ΦΟΙΤΗΤΙΚΗ ΕΣΤΙΑ Α ΘΕΑΤΡΟ (ΑΘΕΑ)                  | 14 | OUTDOOR SPORTS ACTIVITIES (SP02, 03, 09-15, 20) |
| 15 | ΑΘΛΗΤΙΚΕΣ ΕΚΚΑΤΑΛΕΞΕΙΣ (ΑΘΕΑ02, 03, 09-15, 20)   | 15 | LEARNING RESOURCE CENTRE (STELIOS 'DANNOU')     |
| 16 | ΚΕΝΤΡΟ ΠΑΡΕΦΟΡΩΣΗΣ - ΒΙΒΛΙΟΘΗΚΗ 'ΣΤΕΛΙΟΣ ΔΑΝΝΟΥ' | 16 | ENGINEERING SCHOOL (under construction)         |
| 17 | ΚΕΝΤΡΟ ΠΑΡΕΦΟΡΩΣΗΣ - ΒΙΒΛΙΟΘΗΚΗ 'ΣΤΕΛΙΟΣ ΔΑΝΝΟΥ' | 17 |   |
| 18 | ΠΟΛΥΤΕΧΝΙΚΗ ΣΧΟΛΗ (under construction)           | 18 |   |
| 21 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 02)                        | 21 | PARKING AREA (PRK 02)                           |
| 22 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 03)                        | 22 | PARKING AREA (PRK 03)                           |
| 23 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 05)                        | 23 | PARKING AREA (PRK 05)                           |
| 24 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 07)                        | 24 | PARKING AREA (PRK 07)                           |
| 25 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 08)                        | 25 | PARKING AREA (PRK 08)                           |
| 26 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 08)                        | 26 | PARKING AREA (PRK 08)                           |
| 27 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 10)                        | 27 | PARKING AREA (PRK 10)                           |
| 28 | ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ (ΧΣΤ 14)                        | 28 | PARKING AREA (PRK 14)                           |



## ΠΑΝΕΠΙΣΤΗΜΙΟΥΠΟΛΗ University Campus

# TELEPHONE AND FAX DIRECTORY

	TEL.	FAX
University Council Chairperson's Office	22894350/4011	22894470
Rector's Office	22894008	22894469
Vice-Rector's Office (Academic Affairs)	22894003	22894468
Vice-Rector's Office (International Affairs, Finance and Administration)	22894005	22894467
Director of Administration and Finance	22894013	22894470
Call Center	22894000	

## FACULTIES/DEPARTMENTS

<b>ECONOMICS AND MANAGEMENT</b>	22893627	22895032
Accounting and Finance	22893605/41	22895475
Economics	22893701/02	22895028
Public and Business Administration	22893650	22895030
<b>ENGINEERING</b>	2892216	22895471
Architecture	22892960/80	22895056
Civil and Environmental Engineering	22892200/49	22895080
Electrical and Computer Engineering	22892240	22895079
Mechanical and Manufacturing Engineering	22892280/48/50	22895081
<b>GRADUATE SCHOOL</b>	22894044	22894438
<b>HUMANITIES</b>	22894423	22895046
English Studies	22892101/02	22895067
French and European Studies	22894370	22894387
Turkish and Middle Eastern Studies	22893950	22895040
<b>LETTERS</b>	22892008	22895062
Byzantine and Modern Greek Studies	22893870/4302	22894491
Classics and Philosophy	22893850	22894491
History and Archaeology	22892180	22895068
<b>MEDICAL SCHOOL</b>	22894352/5255	22895396
<b>PURE AND APPLIED SCIENCES</b>	22892786	22892810
Biological Sciences	22892894	22895095
Chemistry	22892780/2800	22895088
Computer Science	22892700	22892701
Mathematics and Statistics	22892600	22895072
Physics	22892820/26	22895083
<b>SOCIAL SCIENCES AND EDUCATION</b>	22893421/20	22895045
Education	22892940/1/2	22894488
Law	22892920	22892910
Psychology	22892070	22895075
Social and Political Sciences	22894561/60	22894559

## RESEARCH UNITS/CENTRES/INSTITUTES

Archaeological Research Unit	22893560	22895057
Aula Cervantes Nicosia	22895136/37	22895014
Centre for Applied Neuroscience	22895190	22895076
Centre for Banking and Financial Research	22892496	22892421
Centre for Teaching and Learning	22894546	22894548
Centre for the Study of Gender	22892959	22894488
Centre of Entrepreneurship	22895110	22895055
Confucius Institute at UCY	22894274/4461	22895297
Cyprus University Press	22894314	
Economics Research Centre	22893660	22895027
FOSS Research Centre for Sustainable Energy of the University of Cyprus	22894396/21	22895370
International Water Research Centre "NIREAS"	22893527	22895365

	TEL.	FAX
Language Centre	22892901	22894439
Oceanography Centre	22893989	22892575
Research Centre "EMPHASIS"	22893812	
Research Centre for Intelligent Systems and Networks "KIOS"	22893450/51	22893455
Research Centre for Molecular Medicine	22892815	
The Petrondas Institute of Modern Greek Studies	22893875	22895016
School of Modern Greek	22892028	22895066
University Centre for Field Research	22895257/2077	22895374
UCY Student Welfare Fund	22894052	

## ADMINISTRATIVE SERVICES

Academic Affairs and Student Welfare Service	22894021	22894463
Financial Services Services	22894119	22894465/66
Human Resources Service	22894177	22894480
Information Systems Service	22892130	22894434
Information Infrastructure Service	22895100	22895520
Internal Audit Service	22894380	22894478
International Relations Service	22894288	22894472
Research and Innovation Support Service	22894286	22895506
Technical Services	22894200	22894464
The Information Centre - Library "Stelios Ioannou"	22892137/2020	22895495
University Development Service	22894348	22895096

## OTHER SERVICES

Bank of Cyprus	22129832	
Canteen (University House "A.G. Leventis")	22894425	
Centre of Continuing Education, Assessment and Development (KEPEAA)	22894151	22895060
Cultural Centre (Axiothea Mansion)	22894531	22895053
European Office of Cyprus	22894278	22895005
Hairdresser/Barber ZAC Hair Designers	22895133	
Health Centre (Kallipoleos)	22895280	
Health Centre (UCY Campus)	22895270	
Hellenic Bank	22501713	
"Lito Papachristophorou" Preschool and the University of Cyprus Nursery School	22894136/4150	22895393
Legal Counsellor of the University	22894358	22894480
Mini Market	22895139	
Parga Book Center/UCY Copy Center/ Courier Services/UCY Shop	22022876	
Restaurant (New Campus)	22895135	
Security (Central Campus)	22892011	
Security (New Campus)	22894055	
Sports Centre	22894182	22894190
University of Cyprus Radio Station (UCY Voice)	22895140	22895064
U-Pub	22895132	

## STUDENT UNION

Students Union Office	22894026	22894485
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University  
of Cyprus

Postgraduate Prospectus 2021-2023

