MESSAGE FROM THE RECTOR

Graduate education is the cornerstone of a research university. When the University of Cyprus opened its doors to students twelve years ago the first incoming class consisted of 486 undergraduate students. Fourteen years later the University has fully fledged graduate programmes, at both the Masters and Ph.D. levels, in all Departments. We currently offer 41 programmes in 21 Departments, and approximately 1100 students pursue graduate studies within these programmes.

The education of a graduate student, whether at the Master or Ph.D. level, has an overarching goal: to impart lifelong skills for learning and research. Students are expected not only to become knowledgeable in a specific scholarly area of their choice but, more importantly, to become comfortable with the knowledge that lies outside this area. Graduating students must comprehend deeply the things they do know and be comfortable with the things they do not know. Socrates spoke truly when he stated "I know only one thing, that I know nothing". But in recognizing his ignorance and admitting it in public, he also spoke wisely. Graduate students begin their studies aware of the truth in this Socratic saying. In their graduate programmes they are well educated by a highly talented academic staff and engage in state-of-the-art research projects. They interact with our research partners, both from the local community and the international network of our collaborators. They participate in the teaching of undergraduates, and in the case of Doctoral students and some Master level students, they complete an independent piece of original research. As a result, upon graduation they are not only more fully aware of the truth in Socrates’ maxim, but they are also a step closer to comprehending its wisdom.

Our graduate programmes cover a wide spectrum of scholarly disciplines, ranging from the study of the economy and technology, to the humanities and the arts. They are structured around both formal, classroom- or laboratory-based training and the less structured creative approach of research, seminar participation, conference attendance and the like. Our graduate students are much sought by both local employers and international research centres.

In this publication the interested reader will find detailed information about our programmes. I trust that he or she will also find one of the most challenging opportunities for their further development.

Professor Stavros A. Zenios

Rector
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General Information
The University of Cyprus

The University of Cyprus was established in 1989 and admitted its first students in 1992. Admission to the University is by national entrance examinations and the competition for places is intense. The ratio of candidates to available places is approximately 10 to 1. Many University of Cyprus graduates have been accepted for postgraduate studies - most with full scholarships - in some of the most reputable universities internationally such as the Universities of Cambridge, Oxford, Manchester, Warwick, London School of Economics, in Britain, and the Universities of Stanford, Cornell, Brown, UCLA, Penn State, Duke, Yale and Wisconsin in the U.S.A.

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 simply accumulation of knowledge.

It must also encourage students’ active participation in the process of learning and acquisition of those values necessary for responsible and active involvement in the community. The University sets high standards for all branches of scholarship.

Research is promoted and funded in all departments for its contribution to scholarship in general and for its local and international applications.

Research Activity

Original research is one of the primary activities of the academic staff at the University of Cyprus. This research may also involve undergraduate and postgraduate students, and research assistants. The University’s research programmes cover a wide range of fields that correspond to existing specializations and departments. They are funded either through the University’s budget or by institutions in Cyprus (such as the Leventis Foundation, the Cyprus Research Foundation) and abroad. European Union projects (including the 6th Framework Programme, INTERREG II, COST, EUROMED, HERITAGE II, LEONARDO, MEDA) constitute the majority of externally funded projects.

The University is a member of a number of international university organizations and networks. It also cooperates, through inter-state and inter-university agreements, with universities and research centres in Europe and internationally, for the promotion of science, scholarly research and exchange of information.

The University, within the framework of its social contribution, cooperates with various institutions in Cyprus on research programmes that are specifically aimed at the needs of Cypriot industry and the economy in general.

The Academic Staff

The academic faculty is international, comprising Greek- and Turkish-Cypriots as well as scholars recruited from abroad.

Library

The primary responsibility of the Library of the University of Cyprus is to serve the learning and information needs of the academic community (undergraduate and postgraduate students, faculty, researchers and University staff), while meeting the information needs of the wider scientific community of the country is within the Library’s objectives.

More than 240,000 books, with an annual increase of about 12,000 new titles, are housed in the Library. Notable collections include those of Cypriot Studies, Archaeology and Turkish Studies. The catalog is searchable through the Library system (ADVANCE/GEAC) either from all computers of the campus network or remotely by accessing the online public access catalogue (WEB-OPAC) operated by the Library.
The Library is a fully electronic library (concerning its operation) and a hybrid library (concerning its content). It contains print, non-print, audiovisual, and digital material as well as facilities for reproduction into Braille for blind users. The basic subsystems and Electronic Information Services of the digital-virtual library are:

- The Online Public Access Catalogue
- The subsystem of 18000 electronic journals
- The subsystem of 27 databases installed in-house and 104 databases installed on the producers’ and suppliers’ web sites
- The subsystem of 100 virtual collections including the full text of 200,000 electronic books, dissertation theses, etc., on the Internet
- The subsystems of 360 useful links organised in structured directories.

All the subsystems are accessible from every workstation connected to the University network, through the web pages of the Library (http://library.ucy.ac.cy). The web pages, which are updated almost daily, also include descriptive information about the Library working hours, the services offered, contact persons, etc.

The various Library sections and services are located as follows:

**Central Library**

(a) **Open Stacks and Reading Room**
This section includes the main open access collection of books, organized by subject categories according to the Library of Congress Classification System. There are 200 seats available in this section for Library readers, as well as an electronic reading room and photocopy facilities. Two notable collections are also included in this section: the Browning collection (Hellenic literature, history) and the Dakin collection (modern Hellenic history).

(b) **Reference Collection and Electronic Information**
In addition to the 131 databases, traditional reference materials are also offered, including encyclopaedias, dictionaries, guides, etc.

(c) **Audiovisual Material**
This section contains 4500 multimedia items on scientific and educational issues. The section includes video and audio tapes, CDs, CDROMs, DVDs, maps, vinyl disks, slides, microfilms and microfiches, as well as the necessary equipment for reproduction.

(d) **Interlibrary Loan (ILL) and Document Delivery Section**
Collaboration has been established with international networks (Hellenic Interlibrary Loan Network, British Library, etc.) to ensure the availability of books or photocopies of journal articles not included in the Library collection.

(e) **Library and Information Services for Blind and Visually Impaired Users**
There are two adaptive workstations in the Library for blind and visually impaired users. The workstations are equipped with software and devices that enable blind users to access the digital library without the intervention of sighted persons. Blind users are able to read and send e-mails, surf the Internet, search the Library’s OPAC, renew borrowed books, search the databases, read journal articles and study electronic books. Reading is facilitated with the aid of the refreshable Braille display, the special magnification software and/or the transformation of the screen texts into acoustic format through the speech synthesizer. The Library works in collaboration with the faculty to digitally reproduce all necessary course material.

**Periodicals Library**
The Periodicals section is located in the New Wing of the main University campus. More than 4550 scholarly journals are available, 3400 of which are foreign language journals and 1150 are Greek
language journals. All journal volumes are housed in a mobile shelves system, organised by general categories of the Library of Congress system and in alphabetical title order within the categories.

**Library Branches**

**A. Archaeological Collection**

More than 21,400 archaeological books and periodicals are included in the collection, which is housed in the Archaeological Research Unit (12 Gladstonos Street - behind the Greek Embassy). This collection serves to cover the needs of the Unit researchers and members of the academic community. The section includes the D. Pallas byzantinological collection.

**B. Turcological Collection**

The Turcological Collection is situated at 10 Halkokondili Street. This branch includes a notable collection of 17,000 Turcological books and 850 periodicals aiming to meet educational and research needs of the faculty and students of the Department of Turkish and Middle Eastern Studies. The Library includes the collections of Halasi-Khun Tibor, Andreas Tieze and Louis Bazin. A reading room including computers and photocopiers is also available. The Turkish-cypriot press is also available on a daily basis.

**Library Users**

All members of the University of Cyprus (students, faculty, researchers and staff) are supplied with a Library card, which permits them to use the Library facilities and services. The reading rooms and open-stack books are also available to external users not affiliated with the University of Cyprus. Members of the public who wish to obtain borrowing rights must pay an annual membership fee and submit an application to be approved by the Library Director. The Library offers a series of seminars that provide users with the information skills needed to use all Library information subsystems and ensure information literacy.

**Information Systems Services**

The Information Systems Services provide computing facilities to the entire university for general use - hardware, networking, printing and central software such as electronic mail and office applications. The Computer Centre (CC) is responsible for the continuous evaluation and introduction of new technologies, and to maintain in secure and good working order the necessary information technology services and systems required to carry out all academic activities. It has established an advanced high speed data network and has recently introduced a wireless network on the main campus.

The main services that Information System Services offers to the academic community are the following:

**Information Security Office**

The Office handles all security incidents, and undertakes proactive security analysis, development, education, and guidance relating to the University's information assets and information technology systems. It manages security systems to prevent malicious attacks, viruses, spam and unauthorized usage. The Information Security Office continuously monitors various security announcements and informs the university community of possible risks or forthcoming security-related problems.

The Information Security Office will soon adopt the information security standard ISO 17799 and the policy via which the standard will be applied.

The above protocol will enable the University to comply with the Data Protection Law, European Union Laws and Regulations, Copyright Law, software Licensing and privacy.

**Network Sector**

The aim of the Network Sector is to provide advanced network services, and to create, manage and maintain the University network which interlinks all University facilities. Objectives of the Sector include the easy wired and wireless secure connectivity of any user with the voice and data
network, and planning future network upgrades based on user requirements and technological development.

The Sector offers the following services:

• Electronic mail (email)
• Direct, quick and easy access to the wired network of the UCY
• Remote dial-up access
• Administration of UCY DNS and DDNS
• Dynamic IP address allocation (DHCP)
• Wireless network
• Study and acquisition of advanced Internet Services, higher speeds to the wired and wireless network, Virtual Private Network (VPN)
• nP telephony

**Systems and Application Management Sector**

The Systems and Applications Management Sector (SAMS) is responsible for the provision and support of the main information infrastructure of the University through the study, introduction and application of new technologies.

This sector comprises the offices described below:

**Central Systems and Applications Support Office**

The services offered by the Central Systems and Applications Support Office (CSACO) include:

• Account and e-mail management
• Central servers management
• Electronic space and storage provision
• Central backup system management
• Unix operating system and Unix applications 2nd level support
• Central services support for web pages, mailing lists, databases, name services, dial-up, various applications and tools.

**Unified and Automated Services Support Office**

The services offered by the Unified and Automated Services Support Office (UASSO) include Office Automation System services and Systems Management Software services.

**New Technologies and Education Sector**

The sector aims to implement and promote the capabilities offered by new technologies and the internet. The Sector offers IT education and training to the university community.

**Education Office**

The goal of the Education Office is the continuous education and training of the university community in the area of Information Technology services and tools. One example of the Education Office’s services is the ‘crash’ course for using Microsoft Office that is offered to first-year students.

**e-Services Team**

**Internet Applications**

The team is responsible for the development of applications which are linked with databases.

**e-Learning**

The Information Systems Service and the e-Services team supports the e-Learning system for the academic community of UCY by installing and maintaining e-learning systems. Two such systems are the WebCT which the academic community uses now, and the IBM Learning Space which will soon be installed.

**Website Development**

The Website Development team is responsible for creating new websites for the services and departments of the University.

**Multimedia Team**

The multimedia services of UCY offer a vast array of advanced services and technologies, focused on sound and image through the internet and the use of internet. Specifically, the Multimedia Team offers the following services:
• Multimedia lab (E006) for e-learning, e-meeting, and e-presenting purposes for remote users
• Digital recording and photographing of presentations, seminars, and debates
• Digitalisation of video and sound
• Live broadcasting of seminars/debates or other events through the internet
• Optical acoustic lab with 25 monitors, 25 videos, audio system, and centre console with two 27-inch televisions.

User Support Sector

Help Desk / Service Desk
A computerized Service Desk / Help Desk, will be operating in the near future.

Central Laboratories
The Office of Laboratories manages four computer laboratories (two at the old campus, one at the new campus and one at Latsia branch), each equipped with 30 personal computers.
The Office of Laboratories is responsible for the smooth operation of the computer equipment and the software installed at the Computer laboratories. One of the primary objectives is the continuous and qualitative upgrade of the services that it provides to the University community. To this end, the Central Active Directory server has been connected with the Central LDAP server, so that all users have a unified account for access to all general-use laboratories, as well as their e-mail and other services offered to them via the LDAP service.
The Office of Laboratories aims to transfer knowledge to all the Departments of the University and local support teams, so that “all students have access to all general use laboratories”.
The Central Laboratories Office also oversees the various specialized Departmental laboratories, which are managed by local support teams.

Domain Name Service (.cy)
The University of Cyprus is the official registrar for all Internet Top Level Domain Names ending in .cy and manages the CY domain as a service to the Internet community in Cyprus.

Governing Bodies
The University is a public corporate body. It is governed by the Council and the Senate. The Faculties and Departments are administered by Boards, each Faculty is headed by a Dean, and each Department is headed by a Chairperson. (See relevant organogrammes.)

Administrative Bodies
The Administration is composed of the following Services:
• Academic Affairs and Student Welfare
• Finance
• Human Resources
• Information Systems
• Library
• Research, International and Public Relations
• Technical Services

Administrative services provide the infrastructure and support required for the implementation of the University Council’s decisions and policies. The Director of Administration and Finance (Secretary General, Registrar elsewhere) is responsible for the organization, coordination and development of the administrative services and the University as a whole.

University Buildings
The University, at present, utilizes for its housing needs the recently built facilities at the new University Campus, the former Pedagogical Academy of Cyprus, as well as a cluster of buildings at Latsia. The historic building of the Pedagogical Academy was fully renovated, while retaining its architectural
Many of its internal areas were restructured to suit the needs of a modern University. In addition to the main building, the University owns or rents other buildings in the same area, so as to cover its housing needs until the completion of the permanent Campus.

The Campus Development Office was established to supervise the Project of the New Campus and is responsible for its management, coordination and development. The University Campus will be completed in two basic phases. It is promoted primarily through Architectural Competitions in order to secure the best design for the various buildings. Upon completion, the University Campus will be able to accommodate a total of 9,000 students.

Now completed are the basic infrastructure of the University Campus, the Services and Stores Buildings, the Student Residences (Phase 1a), the Faculty of Pure and Applied Sciences, including the Common Teaching Facilities and the Anastasios G. Leventis University House. The Sports Facilities are partially completed and construction of the Faculty of Economics and Management is currently underway. The construction of the Social Facilities will begin in the upcoming year. The design of the Learning Resource Centre is in the final stage of approval. The Architectural Competition for the School of Engineering will soon be announced.

International Relations
The University is a member of the Community of Mediterranean Universities (CMU), the Network of Universities from the Capitals of Europe (UNICA), the Association of Commonwealth Universities (ACU), Leo-Net (Leonardo Network for Academic Mobility), as well as the European University Association (EUA). In 2005 the University of Cyprus became a full member of the Stantander Group. It also maintains close contacts with international organizations such as the EU, UNESCO, CEPES, the Council of Europe and numerous others. This international cooperation, enhanced by the collaboration of the academic staff with universities and research institutions abroad, positions the University of Cyprus favourably in the international scholarly community.

Lectures / Cultural Activities
All departments of the University organise public lectures and other events focused on issues of scholarly, scientific and wider interest. In addition, the University sponsors centrally organised lectures, cultural events, exhibitions, concerts and other activities open to the general public. It cooperates with many cultural institutions, 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. The University in cooperation with the Municipality of Aglandzia, organises a series of lectures open to the public, which is known as the "Free University", at Skali Aglandzias, whereas in cooperation with the Larnaca Municipality it operates the Zenonion Free University. The University of Cyprus has also expanded the "Free University" to cover Limassol, Paphos (in cooperation with the municipality of Yeroskipou) and the Cypriot Diaspora in London.

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

Publications
In order to provide comprehensive information to the public, students and prospective students, and the international academic community, the Publications Office of the University publishes an annual undergraduate and a postgraduate prospectus in Greek and English. A publication listing the research interests, projects and publications of the academic staff of the University is also produced, as well as the University Annual Report, information leaflets and other material. A University magazine is published on a quarterly basis and a newsletter is published every two months.
The faculties, departments, research units and other entities of the University produce various research and information publications.

In 2002 the University of Cyprus, in a joint venture with Ellinika Grammata of Greece, established Mesogios Press, a new publishing house whose aim is to promote and enhance science, art, culture and social awareness through the production and promotion of books. Mesogios Press has published nine books. Five more books are forthcoming in 2007.

For further information please contact the Service for Research, International and Public Relations.

Student Exchanges

Socrates / Erasmus Programme
The University of Cyprus participates in the Socrates/Erasmus Programme which, among other activities, promotes EU university student exchanges. It also implements the rules set by the European Credit Transfer and Accumulation System (ECTS), which allows the mutual recognition of the programmes of study involved.

For the academic year 2005-2006, the University of Cyprus signed 182 bilateral agreements of cooperation, within the framework of the Socrates/Erasmus Programme, with around 92 universities in 15 European countries. The UCY sent 102 students abroad and hosted 55 foreign students. For the academic year 2006-2007, the University expects to sign 200 bilateral agreements and it is estimated that the number of student exchanges will be increased.

Leonardo da Vinci Programme
Leonardo da Vinci is the European programme for the implementation of vocational training policy in Europe. It offers, among other things, placement of students and exchanges of training staff in the countries of the European Union (Mobility). This programme offers students and young graduates training placements in companies, organisations or industry, and also provides opportunities for staff exchanges. In summer 2005 the University of Cyprus participated in its first mobility project with two students from the Department of Civil and Environmental Engineering who were placed for three months in two companies in Greece.

In summer 2006 the University of Cyprus again participated in a mobility project, with three students from the Department of Electrical and Computer Engineering who were placed for three months in companies in Austria and Germany.

School of Greek Language
The School of Modern Greek (SMG) of the University of Cyprus was established in 1998. The courses are held on the premises of the University of Cyprus at Kallipoleos Avenue 75 or at the University Campus (Aglantzia). Socrates students or other exchange students and prospective students of the University of Cyprus at graduate or post-graduate level can enroll and participate in both the intensive and non-intensive programmes of the School, including the Summer Intensive Programme EILC. The courses are free of charge, provided the programme is of a duration equivalent to their studies at the University of Cyprus (13 or 26 weeks). All courses are credited with ECTS.

Courses are also open to Greeks/Cypriots of the Diaspora and non-native speakers of Greek who live in Cyprus or abroad and wish to learn or improve their knowledge of Greek.

The intensive programme is offered twice a year, in September and January, and the non-intensive programme once a year, in September. All programmes are offered at beginner, intermediate, advanced and higher level. After the final oral and written examination students receive a certificate of successful completion of the course indicating the level, the duration and their final grade.

The School of Modern Greek is housed at the University of Cyprus, Kallipoleos 75, office 002. For
further information you may contact the secretary, tel.: 22892028, e-mail address: smgreek@ucy.ac.cy.

Accommodation / Living Expenses
The University of Cyprus provides on-campus self-catering accommodation to a limited number of postgraduate students. Information on rents, criteria and application procedures is available through the Housing Office. The Housing Office also provides assistance in finding off-campus accommodation. Flats are available for rent near the University, as well as throughout the city of Nicosia. The rent for a two-bedroom flat is between 250-300 Cyprus Pounds per month, whereas the rent for a three-bedroom flat ranges between 300-350 Cyprus Pounds. On campus there are a canteen and a restaurant with special prices for students. There is also a restaurant at the Latsia Annex. There are also many small private restaurants located near the University.

Living expenses are estimated at between 400 - 500 Cyprus Pounds per month, including rent. (Currently 1 Cyprus Pound = 1.7 EURO)

Personal Guidance
Each student is assigned an Academic Advisor who will counsel him/her on academic matters.

Personal Guidance and Counseling Services
The University provides counseling services for personal and/or academic issues that may interfere with the students’ academic career. Through counseling and psychotherapy, the Counseling Office assists students with a range of issues like stress and anxiety, time-management, relationship difficulties, confusion, loneliness, etc.

The services are free of charge and confidential. Throughout the academic year, there will be a number of presentations and workshops offered based on the students’ needs. The primary goal of this service is to help students to their personal development and to maximize their educational experience.

Careers Centre
The University Careers Centre provides information on graduate programmes and scholarships abroad. The Centre is available to help students choose and enter a satisfactory career. The Centre provides transcripts in English for a small fee.

The Careers Centre organizes an annual “Careers Fair”, lectures, workshops and other events relevant to employment and postgraduate studies abroad. The Centre also offers the SHL Career Guidance Tools and General Abilities Profile, which consists of an integrated set of 12 ability tests, suitable for comprehensive career guidance and assessment.

Employment
The University offers a limited number of positions for student employment. The Careers Centre informs students of temporary positions both within and outside the University. Students and graduates can submit their C.V. in an electronic job-finding base where suitable employment can be found.

Health
The University Health Centre, operating at the University central building, offers first aid, provides advice on health issues, and also organizes prevention and blood-donation campaigns and refers students to public hospitals.

(More information about the services available can be obtained from the Academic Affairs and Student Welfare Service.)

Student Union
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.

**Student Clubs**

There are twenty–two Student Clubs at the University of Cyprus, involved in educational, cultural, artistic and entertainment activities. Approved Student Clubs are funded by the University. The “Club Evening” is a yearly event where students can learn about the activities of the various clubs, and where they can also register for the clubs of their preference.

**Athletics**

The University of Cyprus believes strongly in the importance of physical fitness. The Athletics Office adheres to the adage, “sound mind, sound body”, and so provides a Programme that offers a wide variety of sports and physical activities from which students can choose those best suited to their individual needs.

The Athletics Office of the Academic Affairs and Students Welfare Service has prepared a sports programme which allows all students to engage in a sport they like and which fits their interests and needs. The programme is adapted to class schedules so that studies are not compromised.

The Athletics Programme is divided into five categories:
- Internal Championships
- Competitive Sports
- Recreation Sports
- Sports and Social Contribution
- Events

For more information, students may apply to the Athletics Office, where they will find the current year’s Athletics Programme.
Postgraduate Studies
Attendance Regulations
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. and M.Sc.) and Doctor of Philosophy (Ph.D.) level in a wide range of subjects.

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 the Postgraduate Programme, the department appoints an Academic Supervisor, whereas at the research stage of the Ph.D. a Research Supervisor is appointed. The candidate student selects a member of the academic staff to act as his/her Research Supervisor. The student’s choice must be approved by the Postgraduate Programmes Coordinator. The Research Supervisor guides the student in his/her research and provides the necessary help and advice.

The study programmes of the University of Cyprus are based on the European Credit Transfer System (ECTS). An ECTS unit normally corresponds to a 25-30 hours workload per semester.

Postgraduate studies are subject to the Postgraduate Studies Regulations (see relevant appendix).

Requirements for Ph.D. Degree
- Successful completion of a minimum of 60 ECTS at the postgraduate level, in accordance with the provisions of the relevant programme of studies of the department. Holders of a Master degree (or an equivalent degree) may be partially or fully exempted from this requirement.
- Success in a comprehensive examination in the fifth semester of studies at the latest.
- Presentation of a dissertation proposal before a three-member committee. The committee, proposed by the Research Board, is appointed and chaired by the department chairperson.
- 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 departmental board 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 other departments of the University; and one member from other universities or other research centres.
- The Chair of the Examining Committee is a member of the academic staff of the 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.

Requirements for M.A. and M.Sc. Degrees
- Full-time attendance for a minimum of three semesters. The period of study may be extended, subject to approval by the Senate, for up to four academic years.
- Successful completion of 90-120 ECTS at the postgraduate level, in accordance with the provisions of the programme of studies of the relevant department.
- Other criteria set by the department, which may include a comprehensive examination at the end of the programme and / or the submission of a dissertation.
• The Ph.D. requirements must be fulfilled within the period of eight (8) years from the day of admission to the postgraduate programme.
• The Ph.D. candidate may not submit a dissertation until he has completed six semesters in the postgraduate programme.

Application Requirements
The application form should be submitted to the Postgraduate Studies Coordinator of the relevant department by the 15th of April of each year for entry in the fall semester and by the 31st of October for entry in the spring semester. The application should include the following:
1. Curriculum vitae.
2. Copies of university degrees or a statement of expected graduation in the June preceding enrolment in the postgraduate programme. (For the postgraduate programme in Educational Administration, a minimum of two years of educational experience is required.)
3. A transcript.
4. A short statement (maximum two pages) of the student’s research goals and interests.
5. Names and addresses of professors of Higher Educational Institutions. Applicants must request that letters of recommendation be sent directly to the Postgraduate Studies Coordinator of the relevant department. The department may ask for additional confidential information.

Further information on Postgraduate Studies can be obtained from the secretaries of the relevant departments, daily from 8:00-14:00.

Registration
Students accepted at the University of Cyprus must complete a registration form and submit it along with the required documents to the Academic Affairs and Student Welfare Office by the end of June.

Fees
The fees for postgraduate studies are as follows:

Master Degree
- Master Programmes offered in Greek: £3000 per programme.
- Master in Business Administration (MBA): £6000.

Doctoral Degree (Ph.D.)
- Taught stage: £250 per course.
- Research stage: £500 per semester.
- Dissertation stage: £100 per semester.

All students are required to enrol in one of the above stages according to the registration programme. If they wish to suspend their studies, they must follow the relevant procedure (see Postgraduate Studies Regulations). The minimum deposit for registration is 500 Cyprus Pounds (except the Dissertation stage of the Doctoral Degree).

Fees must be paid at the Accounts Office prior to registration, and the receipt must be presented upon registration. The deposit of £500, which is paid in advance, is not refundable.

Postgraduate Student Funding
Apart from scholarships offered by the State, the University of Cyprus may subsidize a postgraduate student who offers to work as an assistant in covering the needs of 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 £200 or £400 for a maximum period of eight months.
Postgraduate Programmes
The University consists of six faculties:

- the Faculty of Humanities with three departments and the Language Centre,
- the Faculty of Pure and Applied Sciences with five departments,
- the Faculty of Social Sciences and Education with four departments,
- the Faculty of Economics and Management with two departments, the Economics Research Centre and the Centre for Banking and Financial Research,
- the Faculty of Engineering with four departments,
- the Faculty of Letters with three departments and the Archaeological Research Unit.

The table overleaf lists the faculties, the departments and the degrees they offer.

On pages 23-272 there are detailed descriptions of the postgraduate programmes offered by the departments and a brief description of the research interests of the academic staff.
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<td>(Interdepartmental Programme of BMG-HIS)</td>
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*Note: * Master / ** Ph.D. / *** Master and Ph.D.
# FACULTY OF HUMANITIES

**Dean:** Stephanos Stephanides  
**Deputy Dean:** Martin Strohmeier

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# FACULTY OF ECONOMICS AND MANAGEMENT

**Dean:** Louis Christofides  
**Deputy Dean:** Andreas Charitou

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# FACULTY OF ENGINEERING

**Dean:** Andreas Alexandrou  
**Deputy Dean:** Charalambos Charalambous

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# FACULTY OF LETTERS

**Dean:** Ioannis Taifacos  
**Deputy Dean:** Panagiotis Agapitos

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# FACULTY OF PURE AND APPLIED SCIENCES

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**Deputy Dean:** Stavros Theodorakis

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# FACULTY OF SOCIAL SCIENCES AND EDUCATION

**Dean:** Athanasios Gagatsis  
**Deputy Dean:** Andreas Kapardis

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<tr>
<td>Law</td>
<td>Andreas Kapardis (temporary)</td>
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Introduction
The Department of English Studies is dedicated to the promotion of research and knowledge in the areas of English language and culture, in particular, linguistics, literature, and translation studies. It offers an undergraduate degree in English with concentrations in Linguistics or Literature. It also offers three postgraduate degrees (M.A. and Ph.D. in Applied Linguistics, M.A. and Ph.D. in English Literature and Comparative Cultural Studies, and M.A. in Conference Interpreting).

Research in the Department
The Department is involved in research into English and comparative literature, linguistics, translation and cultural studies. In particular, research activities of faculty members in the area of literature include theatre studies (especially the work of William Shakespeare, comparative European theatre and melodrama), critical and cultural theory, postcolonial and postmodern literature, 18th and 19th century fiction, 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 language contact between English and Greek in the sociolinguistic frame of Cyprus (diglossia, lexical borrowing, prosodic and syntactic phenomena, etc.), as well as the teaching of English in primary schools and the development of language tests.

The Department is also involved in the following interdisciplinary research programmes:

(a) The European Programme DIALANG, which aims at developing diagnostic tests for the languages of the European Union.

(b) The EU-funded European-wide project ACUME (Approaches to Cultural Memory), for the study of literary and cultural traditions on an international and comparative basis. (The project is coordinated with the University of Bologna.)

Postgraduate Studies
The Department of English Studies offers postgraduate programmes at M.A and Ph.D. level. All postgraduate programmes are supervised by a three-member committee, which is appointed every two years. The Committee is chaired by a Postgraduate Coordinator.

Admission Requirements
(a) Postgraduate programmes at Master level: All applicants for entrance in the M.A. programmes offered by the Department must hold a first class or upper second class (or equivalent) degree 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. In addition, candidates for the M.A. in Applied Linguistics will normally be expected to have two years' work experience in education, teaching and/or administration.

(b) Postgraduate programmes at Ph.D. level: Generally, applicants for admission at Ph.D. level must hold a Master 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.

Although candidates need not have completed their degree at the time of application, they must have received it before they are allowed to commence the postgraduate programmes.
Number of Students to be Admitted

The total number of postgraduate students to be admitted in the postgraduate programmes of the Department is specified by an announcement each year.

Application and Selection Procedures

Each application should be accompanied by a curriculum vitae, a transcript of the student’s undergraduate degree, and his/her postgraduate degree(s), if applicable. Candidates for the M.A. in English Literature and Comparative Cultural Studies must submit two writing samples, 5 to 10 pages each (e.g., term papers). Candidates for the Ph.D. must submit a copy of their M.A. thesis. All candidates must submit a Statement of Purpose (1-2 pages), explaining their academic interests in relation to their academic background and long-term goals. Candidates must also arrange for three letters of recommendation, preferably from members of Higher Education Institutions, to be sent directly to the Department.

Applications must be submitted to and examined by the Departmental Board. Candidates will usually be called for an interview. After the interviews, the Board submits a report to the Dean of the Faculty of Humanities, stating the Board’s decision regarding admissions. These decisions must be approved by the Faculty before they can be announced to the applicants by the Department Chairperson.

M.A. Degrees

The department of English Studies offers postgraduate programmes leading to three Master Degrees: Master in Applied Linguistics, Master in English Literature and Comparative Cultural Studies and Master in Conference Interpreting. The normal course of study for the M.A. is four semesters: three semesters of course work, followed by one semester for writing the M.A. thesis. Students are allowed up to eight semesters to complete the degree, if necessary.

M.A. IN APPLIED LINGUISTICS

The postgraduate programme in Applied Linguistics is primarily designed for those interested in Applied Linguistics as an academic field and has the following main objectives:

• to offer students a solid background in the main areas of applied Linguistics;

• to enable students to specialize in one area of Applied Linguistics (such as Language Learning and Acquisition, Language Use and Variation, Language Planning, or Teaching Methodology);

• to engage students in research in the field.

List of Courses

First Semester

- Principles of Linguistic Analysis
- Trends in Applied Linguistics

Second Semester

- Research Methodology

One of the following options:

- Principles of Language Use and Variation
- Language Testing and Evaluation
- Theoretical Approaches to Translation - Psycholinguistics
- Topics in Linguistics

Third Semester

- First and Second Language Acquisition
- Language Teaching and Learning

Students may also take courses from related fields after consultation with their advisor.
**M.A. IN ENGLISH LITERATURE AND COMPARATIVE CULTURAL STUDIES**

The postgraduate programme in English Literature and Comparative Cultural Studies is designed for students who wish to undertake research in literature, with particular emphasis on cross-cultural, comparative and interdisciplinary perspectives. Students may explore cross-cultural dimensions within English Studies, or English Literature in relation to literatures in other languages offered by the School. Intergeneric approaches to literature will also be encouraged. Courses examine recent developments in cultural analysis in relation to the literary text, drawing from disciplines such as psychology, anthropology, sociology, history and philosophy. The programme is aimed primarily at students who wish to undertake research in:

- a) English and Comparative Literature
- b) Cultural Studies
- c) Literary Theory
- d) Translation Studies

**List of Courses**

**1st Semester**
- Historical and Ideological Transformations in the 19th century
- The Jewish Novel in America

**2nd Semester**
- Shakespeare, Feminism and Psychoanalysis
- Theories of Modernity and Postmodernity

**3rd Semester**
- Seminar in Comparative Studies
- Space and Cultural Production

**M.A. IN CONFERENCE INTERPRETING**

The postgraduate programme in Conference Interpreting has been developed in collaboration with the Joint Interpreting and Conference Service of the European Commission (SCIC) and the Interpreting Directorate of the European Parliament. Within the framework of the European Union's objectives of promotion of knowledge through wider access to specialist education and improved employability through the acquisition of specialist competence, the programme is designed to provide the professional training and knowledge required for conference interpreting. It seeks to meet the demand for highly qualified conference interpreters, in view of the accession of Cyprus to the European Union and the Union's increasing dialogue with its non-European partners. The curriculum was developed in consultation with European Union institutions and continuation of this cooperation is an integral part of the programme. Students are expected to be highly competent in all working languages (one target language, i.e., a language into which students will interpret, and at least two source languages, i.e., languages from which students will interpret). The languages offered for this academic year include Greek, English and possibly Turkish as target languages and a number of source languages defined by the specific combinations candidate students will bring (usually English, French, Spanish, Italian and German). There are absolutely no restrictions as to the field or subject of the university degree applicants must hold in order to be admitted.

**List of courses**
- Consecutive Interpreting I & II
- Simultaneous Interpreting I & II
- Public Speaking and Current Affairs I & II
- Theoretical Approaches to Translation and Interpreting
- Comparative Terminology
- One elective course on International Relations or European Studies

**Ph.D. Degrees**

The Department offers Ph.D. programmes in subjects related to all research interest areas of its academic faculty.
Research Interests of the Academic Staff

• Antonis Balasopoulos  
  Assistant 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).

• Photini Coutsougera  
  Lecturer  
  Her research interests lie mainly in theoretical phonology and in particular in the phonology of Cypriot Greek (where her research has predominantly taken place so far) and other Greek dialects.

• Georgios Floros  
  Lecturer  
  His research interests focus on theoretical and methodological aspects of translation and interpreting, text linguistics and discourse analysis. In particular, his main research areas include culture and translation, translation process and methodology, translation didactics, interpreting methodology and didactic aspects of interpreting. As regards the text linguistic perspective, he is interested in textual structure, cohesion and coherence as well as in the importance of these features for translation and interpreting.

• Kleanthes K. Grohmann  
  Assistant Professor  
  His research interests lie in the field of theoretical linguistics, in particular syntax, morphology, semantics, and (first and second) language acquisition. He is concerned with syntactic theory (in particular the Minimalist Program and the Principles & Parameters Theory), synchronic and diachronic study of grammar (especially history of English), and theoretical concerns in psycho- and neurolinguistics (incl. L1 and L2 acquisition and language disorders). The language families he is currently most interested in are Germanic, Greek, Romance, and Slavic.

• Maria Margaroni  
  Associate Professor  
  History and theory of literary criticism, feminist literary theory, contemporary English literature. In particular, she is interested in issues arising in the context of post-structuralist literary theory and post-modern continental philosophy (with an emphasis on the work of Jacques Derrida, Emmanuel Levinas, Michel Foucault, and Gilles Deleuze, among others). In the area of feminist studies, her interests focus on poststructuralist and psychoanalytic theories (with an emphasis on the work of Julia Kristeva, Luce Irigaray, Judith Butler, Helene Cixous) and contemporary women writers (such as Angela Carter and Jeanette Winterson, among others). Secondary interests in the following areas: modern and post-modern drama, cinema, working-class literature.

• Joanna Montgomery Byles  
  Associate Professor  
  English Renaissance (16th and early 17th centuries), especially the period’s drama and poetics, Shakespeare studies (histories, tragedies and the late Romances), 20th-century studies in poetry and, in particular, war literature, international women’s literature, literature, history and psychoanalysis and International Peace Studies.

• Anastasia Nikolopoulou  
  Associate Professor  
  History and theory of European and American theatre, gothic and romantic literature, melodrama, the Victorian novel, philosophical hermeneutics, popular culture.

• Andreas N. Papapavlou  
  Associate Professor  
  Speech perception, language acquisition, the acquisition of a dialect as a mother tongue, factors affecting second language acquisition, bilingualism in the Cyprus context, psycholinguistic dimensions of bilingualism, language attitudes toward the Cypriot dialect, languages in contact, sociolinguistic implications in lexical borrowing and language-in-education policy and planning.

• Pavlos Pavlou  
  Assistant Professor  
  Foreign and second language teaching and learning, language testing with emphasis on oral proficiency, consumer rights and language testing, teaching and
assessing young learners of EFL, teaching and testing Greek as a foreign language, the use of the Cypriot dialect in primary education and sociolinguistic aspects of the Cypriot dialect such as its use in the media and advertising.

- **Stephanos Stephanides**
  
  Professor
  
  His research interests relate to 20th-century comparative literature and focus on cross-culturality as a result of the colonial and post-colonial experience. In particular, he is interested in British, Indian, Caribbean and Latin American colonial and post-colonial literature, the relation of literature with cultural anthropology and literary translation as a cross-cultural practice.

- **Evy Varsamopoulou**
  
  Assistant Professor
  
  English and European Romanticism, 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-particularly, ethics, phenomenology, existentialism, political philosophy, Kantian and post-Kantian aesthetics, Psychoanalysis, Time and Narrative, Subjectivity and Gender (in literature and theory), community and identity.

**Contact Person**

Secretary

Thekla Constantinou

Tel.: 22892102

Fax: 22750310

e-mail: thekla@ucy.ac.cy
Introduction
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. The programme is published in the Department's prospectus and is governed by the general Regulations for Postgraduate Study which were approved by the Senate on 26th February 1998.

Directions
The programme provides for a choice of basic directions. The choice of direction is made in combination with a choice of field within the direction. At present two directions are offered:
(a) History and Politics
(b) Philology and Literature.

Structure of the Master Programme
At Master level the Programme requires the completion of 90 ECTS. The latter are chosen from the basic fields and from individual courses, as follows:

Core Courses
TUR 600 Problems of Research and Methodology in Turcology
TUR 620 Specialized Academic Texts
TUR 640 Archival Texts Seminar

Directions
(a) History and Politics

Fields
TUR 700-719 Pre-Ottoman and Ottoman History
TUR 720-739 Modern Turkish History
TUR 740-759 History of the Balkans
TUR 760-779 History of the Middle East
TUR 780-799 Islam: Religion, Culture

Courses
TUR 700 Ottoman Palaeography and Diplomatics
TUR 702 Economy and Society in Cyprus during the Ottoman Rule (1571-1878)
TUR 703 The Ottoman Press in Cyprus
TUR 706 Byzantium and the Ottomans
TUR 707 History of Mentalities in Relation to Society: Health and Epidemics in the Ottoman Empire
TUR 708 Ottoman Art and Architecture
TUR 720 Modernism and Religion in Turkey
TUR 721 Nation and Nationalism in Turkey
TUR 722 The Role of Monuments in Turkey’s Political Culture
TUR 723 The Role of the Army in Modern Turkey
TUR 724 Education and Modernisation in the Ottoman Empire and the Turkish Republic
TUR 725 "National" and Religious Minorities in Turkey
TUR 741 The Problem of Religion and Nation in the Balkans in the 20th Century
TUR 742 The History and Myth of the Rivalry between Greece and Turkey
TUR 780 Islamic Institutions in the Ottoman Empire
TUR 781 Reform Movements in Islam
TUR 782 Islamic Mysticism

(b) Philology and Literature

Fields
TUR 800-819 Ottoman Literature
TUR 820-839 Turkish Philology
TUR 840-859 Turkish Literature
TUR 860-879 Turkish Linguistics
Courses
TUR 800 Ottoman Epigraphy
TUR 801 Ottoman Grave Inscriptions
TUR 802 Ottoman Poetry
TUR 803 Ottoman and Turkish Memorabilia
TUR 804 Karamanlidika
TUR 841 The Turkish Short Story
TUR 842 Women Writers in Turkey
TUR 843 Turkish "Village Literature"
TUR 844 Turkish Satire
TUR 845 Contemporary Turkish Poetry
TUR 846 Turkish Cypriot Literature
TUR 860 Language Reforms in Modern Turkey
TUR 861 Linguistic Exchange, Greek and Turkish
TUR 867 Turkish and Greek Literature: Comparisons
TUR 900 History of Education in the Ottoman Empire and Modern Turkey

Note: Each course carries 7 ECTS.

The courses are divided as follows:
- Core courses 21 ECTS
- Directions 35 ECTS
- Postgraduate Dissertation 34 ECTS.

The core courses are compulsory for students taking either direction. The 35 ECTS taken under the respective directions are composed as follows:
- Twenty-one (21) ECTS within the student’s chosen Field
- Fourteen (14) ECTS for other basic fields, within or outside the student’s Field.

With the approval of the Postgraduate Studies Committee it is possible to take a certain number of credits from postgraduate courses in other departments, which may be in any Faculty.

Postgraduate Dissertation
Students taking either direction are required to write a Postgraduate Dissertation, which must be original (34 ECTS).

Acceptance to the M.A. Programme
Students are accepted in the programme on the basis of the criteria specified in the Regulations for Postgraduate Study.

In addition, to be accepted in the Master Programme of the Department, students must possess a degree in Turkish Studies, a degree from the Faculty of Letters or a degree in Humanities and Social Sciences.

Candidates are required to know the Turkish language. As and when the Department judges it necessary, provision will be made for a special examination to test the adequacy of applicants’ knowledge.

Knowledge of at least one foreign language (normally English) is essential.

Candidates must also prove themselves in an interview or other test which the Department may deem suitable.

Duration
Students must complete three semesters of full-time attendance. The period may be extended, as provided for in the Regulations for Postgraduate Study.

Analytical Programme
When the availability of places in the programme is announced, the Analytical Programme and the courses to be taught within it according to Direction and Field, will be finalised. Below only the general form of the Analytical Programme is laid out, without being specific as to Direction or Field.
**First Semester**

- TUR 600 (CC) 7 ECTS
- TUR 620 (CC) 7 ECTS
- TUR 640 (CC) 7 ECTS
- Orientation and Research for Postgraduate Dissertation 9 ECTS

Total: 30 ECTS

**Second Semester**

- From Student’s Field (SF) 7 ECTS
- From Student’s Field (SF) 7 ECTS
- Research for Postgraduate Dissertation 9 ECTS

Total: 30 ECTS

**Third Semester**

- From another Field (RE) 7 ECTS
- Postgraduate Dissertation 16 ECTS

Total: 30 ECTS

**Note:**

CC = Core Course (i.e., course which is compulsory for both directions).

SF = Student’s Field (i.e., course within the student’s Direction and chosen field). These courses account for 21 credits.

RE = Restricted Elective (i.e., course from another Field, in either direction). These courses account for 9 credits.

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**Doctoral Programme**

The chief 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. However, 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 Masters 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.

The taught classes are followed by the research stage of the dissertation and then by the writing stage. The credits are allocated as follows:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Stage (research, etc.)</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Taught classes</td>
<td>30</td>
</tr>
<tr>
<td>2nd</td>
<td>Taught classes</td>
<td>30</td>
</tr>
<tr>
<td>3rd</td>
<td>Research stage</td>
<td>30</td>
</tr>
<tr>
<td>4th</td>
<td>Research stage</td>
<td>30</td>
</tr>
<tr>
<td>5th</td>
<td>Research stage</td>
<td>30</td>
</tr>
<tr>
<td>6th</td>
<td>Research stage</td>
<td>30</td>
</tr>
<tr>
<td>7th</td>
<td>Writing stage</td>
<td>30</td>
</tr>
<tr>
<td>8th</td>
<td>Writing stage</td>
<td>30</td>
</tr>
</tbody>
</table>

Total: 240 ECTS

An assessment of the student’s progress must take place by the end of the fifth semester. The elements of this assessment are outlined below.

**Research Stage**

**Proposal**

Before the research stage begins the student must submit a summary of his research proposal. The summary should include a description of both the sources proposed and the methodology to be employed.

**Supervisor and Supervisory Committee**

After the Department’s acceptance of the research proposal, a Supervisor is appointed under whom the student will work at all stages. The Department also sets up a Dissertation Committee consisting of the Supervisor and two other members of the Department with relevant or neighboring research interests.
Assessment

In this is included the student’s basic familiarity with the field of Turkish Studies to which his dissertation belongs and an examination of the progress which the student has achieved in his research for the dissertation. In both cases the student takes both a written and an 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.

The examination scripts will be evaluated by the Dissertation Committee and by a member of the Department’s Postgraduate Committee. The Dissertation Committee and one member of the Postgraduate Committee will conduct the oral examinations.

The assessment usually takes place at the end of the fourth semester (i.e., the second semester of the research stage), but in any case not later than the end of the fifth semester. In cases where students fail, they can retake, once only, the element they have failed (e.g., written examination on the field as a whole).

Success in the overall assessment carries 60 credits (i.e., the credits for the first two semesters after the taught classes).

Writing Stage and Examination of Dissertation

The dissertation is examined by a committee consisting of the following five members:

- the three members of the Dissertation Committee
- one academic member, with similar or related research interests to the subject of the dissertation, of another university
- one academic member, equally with similar or related interests, either of another university or of another department of the University of Cyprus

The chairman of the examination committee must be a member of the department, but not the candidate’s supervisor.

During the defense the candidate is required to give a presentation of the dissertation: any member of the audience is entitled to ask questions during the subsequent discussion. The candidate is then interviewed by the committee.

The committee may accept the dissertation only on condition of certain changes being made. In case of complete rejection the candidate has the option of resubmitting, again once only.

Acceptance to the Doctoral Programme

A. Those 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 an international foreign language, preferably English, and a second foreign language would be considered an advantage.

B. Those candidates who do not already possess a Master degree must have a first degree either in Turkish Studies or in other fields of the Humanities, as laid down in the regulations for acceptance in the Master’s programme. Candidates must in any case be competent in Turkish. They are not obliged to submit a dissertation proposal at this stage, but a dissertation proposal may help them in their application. If the proposal is not included in the student’s application for the Master it must be submitted towards the end of his taught classes in the Master’s programme.

The full text of the doctoral programme regulations is available from the Department’s office.
Research Interests of the Academic Staff

- **Matthias Kappler**
  Assistant Professor
  The language of "Karamanli" Literature; Balkan Turkology- Dialects: Greek-Turkish Language Contacts; Late Ottoman Literature.

- **Niyazi Mustafa Kizilyürek**
  Associate Professor
  Political History of Cyprus, Political History of Modern Turkey, Nationalism.

- **Thomas A. Sinclair**
  Assistant Professor
  Late medieval Turkish history in Asia Minor, early Ottoman history in Asia Minor and the Balkans; Armenia in the Il-Khanid, Turcoman and early Ottoman periods, with special reference to commerce and administration; medieval Turkish and Ottoman architecture.

- **Martin Strohmeier**
  Professor
  Social and cultural history of the Ottoman Empire and Modern Turkey, Development of education, and History of the press in the Middle East.

- **Ioannis Theocharides**
  Associate Professor
  The History and the Sources on the institutions of Greek lands during the Ottoman domination, with emphasis on Cypriot History, Ottoman Palaeography and Diplomatics and, in part, Balkan History.

Contact Persons

**Programme Coordinator**
Professor Martin Strohmeier
Tel.: 22892154
e-mail: m.strohmeier@ucy.ac.cy

**Department Secretary**
Tel.: 22892150
Fax: 22892155
e-mail: andreoum@ucy.ac.cy
Introduction
At the start of the new millennium, Biology is at the forefront of scientific discovery and public attention. The recent delineation of the complete genomic information of humans and several other organisms provided the foundation for unprecedented advances in understanding life at the molecular level. It also provided new tools and approaches to medicine, agriculture, biotechnology, and other disciplines. The way Biology is taught, practiced, and understood has been revolutionised through advances in biochemistry, cell and developmental biology, structural biology and genetic manipulations based on molecular biology. Biology has expanded to create novel fields, beyond its traditional scope, via synergies and interactions with information science, chemistry, physics and engineering. In this framework, Biology has become a driving force of discovery and application in the modern economy and industry (biotechnology, agriculture, medicine, pharmaceuticals, to name a few), and a source of improvements in health and quality of life.

Objectives
The newly established Department of Biological Sciences at the University of Cyprus aims to provide high calibre education through its postgraduate programme, and research in line with international trends in Biological Sciences. The Department accepted its first postgraduate students in September 2003 and offers postgraduate programmes leading to the titles of Master of Science and Doctor of Philosophy in Molecular Biology. The undergraduate programmes of study will be offered at a later stage.

The main goals of the Department of Biological Sciences are:

- To develop competitive research programs in the fields of immunology, cell biology, embryology, bioinformatics, genetics, virology, neurobiology, and cancer treatment and prevention.
- To offer high quality education and training at the undergraduate and postgraduate level.
- To contribute to upgrading of services provided by the public and private sectors in Cyprus, especially those concerning public health, the environment, and medicine.

Postgraduate Programmes
The Department of Biological Sciences offers postgraduate programmes of studies that lead to the following degrees:

- Master in Molecular Biology
- Master in Research Molecular Biology
- Ph.D. in Molecular Biology

I. Admission to the Postgraduate Programmes
The Department announces positions for each of the above postgraduate programmes separately, after approval from the relevant authorities of the University. The determination of the number of the announced positions is based on the specific needs and capacities of the Department and of each of its faculty members. Consequently, each newly arrived student will have prior knowledge regarding the research lab in which he/she will carry out his/her research part of the programme (applies to either “Master in Research Molecular Biology” or to “Ph.D. in Molecular Biology”). Each postgraduate candidate student is encouraged to contact all Departmental Faculty Members (DFM) with the aim of choosing the research lab for carrying out the research part of his/her studies. Upon entry to the programme every student must have identified a DFM who is prepared
to host him/her for developing the laboratory part of the research work.

Eligible to apply are those who hold an undergraduate degree from a recognized University with a final general grade of at least 6.5/10 (for graduates from Universities in Greece and Cyprus) or the equivalent for graduates from overseas Universities with a different marking system. Eligible to apply are also those who will hold such a degree by the starting date of the above mentioned postgraduate programmes.

I.1 The application should include:

(a) Curriculum Vitae (CV)

(b) Comprehensive list of the markings for each of the undergraduate degree courses studied (and for postgraduate courses, should there have been any)

(c) Summary of long-term professional/scientific goals (either in Greek or in English).

Each candidate is responsible for arranging the delivery, directly to the Department, of two recommendation letters, preferably from academic staff. Candidates are encouraged to start entry procedure to the postgraduate programme before the completion of their undergraduate study. However, they must hold an undergraduate degree by the start of the postgraduate programme.

I.2 The applications are submitted to the Department and are evaluated by the Committee for Postgraduate Studies (CPS) which comprises three members, one of whom is the Coordinator of the Committee. The recommendations of the CPS will take effect as long as they are approved by the Departmental Council. The decisions of the Departmental Council will be forwarded to the Faculty of Pure and Applied Sciences of the University of Cyprus. The Departmental Council reserves the right not to fill all the announced postgraduate positions. The CPS invites candidates for interviews after a pre-selection process and reserves the right not to invite candidates who have not met the pre-selection criteria.

II. Contents of the Postgraduate Programme and General Requirements

The postgraduate programmes of the Department of Biological Sciences include theoretical and research courses at both the Master and Ph.D. level, as outlined below. For students who enter the Ph.D. programme and have already obtained a Master degree from the University of Cyprus or any other recognized University, it is possible to become exempt from some or all of the required ECTS units on a case by case determination, after a decision by the CPS and approval by the Departmental Council. The requirements for obtaining a Master or Ph.D. degree are outlined below.

III. Master Degree in Molecular Biology and Research Molecular Biology

III.1 The Master degree in Molecular Biology does not involve any courses that involve a lab-based research dissertation and it is designed for those who do not wish to work in a research lab during their studies. To obtain this Master degree, candidates have to successfully complete 90 ECTS as follows. The course BIO 680 is worth 20 ECTS units and is compulsory. Seminar attendance (BIO 800 and BIO 801) is also compulsory (Table A). The remaining 70 ECTS units are obtained by attending classes from a list of restricted elective courses (Table B). Regarding the completion of the Master in Research Molecular Biology 90 ECTS units are required, 60 of which are obtained by attending classes from restricted elective courses (Table C).
as well as attending the seminar classes (BIO 800 and BIO 801) which are also compulsory. Another requirement is to carry out a compulsory lab-based research dissertation whose duration is at least one semester and which is worth 30 ECTS units (Table D). After its completion, this dissertation will be presented in the form of an open seminar. Candidates will also have to successfully pass an oral examination by a three-member Special Exams Committee. They will be examined mainly on their research dissertation as well as on subject matter they were taught during the courses they undertook as part of their postgraduate programme.

The duration of study is at least three semesters with a maximum of eight semesters. Students enrolled in any of the two Master’s programmes will be allowed to apply for a change of Master’s programme by the second semester of their studies, but not later. A request for a change in the programme is subject to approval by the CPS and Departmental Council.

III.2 The Special Exams Committee consists of the research supervisor who is appointed by the Departmental Council prior to the start of the dissertation, one DFM from the Department of Biological Sciences, and a third member who can be a DFM from the Department of Biological Sciences or from another Department of the University of Cyprus or from a DFM of an overseas University who is familiar with the scientific area concerned.

The Special Exams Committee is appointed after recommendation by the CPS of the Department and approval by the Departmental Council. The president of the Special Exams Committee is the research supervisor of the student.

IV. Ph.D. in Molecular Biology

IV.1 Those enrolled in the Ph.D. Programme must complete 80 ECTS units by taking postgraduate courses (Table E). They also have to attend the seminar series of the Department for at least four semesters (Table F). Candidates who already hold a Master degree in a relevant scientific area or who have attended postgraduate classes in relevant subjects can be exempt partially or up to 80 ECTS units, after submitting an application to the CPS and provided that the candidate has been advised by his/her research supervisor regarding this matter. In either case candidates must enroll to attend the seminar series of the Department.

After the completion of the postgraduate courses (excluding the seminars), candidates will undergo a Comprehensive examination (BIO 810, Table F) according to the general University guidelines of postgraduate studies. This will involve preparation and presentation of a research proposal in an area different from that of their Ph.D. research dissertation.

IV.2 Students officially become Ph.D. candidates after their successful completion of the Comprehensive examination, the latest by the fifth semester, and provided they have also prepared and presented successfully a research proposal regarding their Ph.D. research dissertation, the latest by the fifth semester. The two research proposals (‘Comprehensive’ examination and Ph.D. research proposal) will include a detailed description of the aims and methodology and must adhere to internal guidelines and regulations of the Department. Each of these proposals will be presented before a three-member committee appointed by the CPS of the Department upon recommendation from the research supervisor. This three-member committee is made up from the Research Supervisor who is also the president,
one DFM from the Department of Biological Sciences, and a member who can be a DFM from another Department of the University of Cyprus but who is familiar with the relevant scientific or research area, or from a different University or Research Institute. These two committees may or may not have the same member composition. Candidates reserve the right to take the ‘Comprehensive’ exam twice. After the completion of the theoretical classes and while they are currying out their Ph.D. research, the candidates are obliged to enroll every semester in the appropriate research stage of their Ph.D. (Table D). Towards the end of their research and during their Ph.D. thesis write-up, students enroll in the ‘Write-up Stage’ (BIO 835-BIO 837, Table D).

IV.3 For the evaluation of the direction and progress of the candidate’s Ph.D. research work, each candidate will have to carry out an oral presentation before the three-member committee regarding their research progress, within one year from their successful completion of the Comprehensive exam.

The Ph.D. dissertation thesis can be submitted only after the elapse of at least six semesters from their entry into the Ph.D. Programme and after the student has successfully completed his/her Comprehensive exam and obtained the required ECTS units.

IV.4 The Ph.D. thesis defense takes place before a five-member Exam Committee which is appointed by the CPS after recommendation from the research supervisor. This committee is made up of three DFMs from the Department of Biological Sciences one of which is the research supervisor, one member from a different University or Research Institute and of another member who can be a DFM from another Department of the University of Cyprus but who is familiar with the relevant scientific or research area, or from another University or Research Institute. The president of this committee is a DFM from the Department of Biological Sciences, other than the research supervisor. Prior to the 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.

Upon approval to be awarded the title of Master in Research Molecular Biology or Ph.D. in Molecular Biology the candidate has to donate one copy of the thesis to the Library of the University and one copy to the Department of Biological Sciences.

**TABLE A: Compulsory courses for the Master in Molecular Biology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 680</td>
<td>Scientific Methodology in Molecular Biology</td>
<td>20</td>
</tr>
<tr>
<td>BIO 800</td>
<td>Postgraduate Seminar series</td>
<td>0</td>
</tr>
<tr>
<td>BIO 801</td>
<td>Postgraduate Seminar series</td>
<td>0</td>
</tr>
</tbody>
</table>

**TABLE B: Restricted elective courses for the Master in Molecular Biology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 610</td>
<td>Molecular Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 620</td>
<td>Special Topics in Cellular Biology</td>
<td>10</td>
</tr>
<tr>
<td>BIO 630</td>
<td>Nucleic Acids</td>
<td>10</td>
</tr>
<tr>
<td>BIO 640</td>
<td>Molecular Biology</td>
<td>10</td>
</tr>
<tr>
<td>BIO 650</td>
<td>Special Topics in Bioinformatics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 660</td>
<td>Developmental Genetics: Embryos, Cells and Genes</td>
<td>10</td>
</tr>
<tr>
<td>BIO 670</td>
<td>Imaging in Biological Sciences</td>
<td>10</td>
</tr>
<tr>
<td>BIO 700</td>
<td>Molecular Biology II</td>
<td>10</td>
</tr>
<tr>
<td>BIO 710</td>
<td>Special Topics in Human Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 720</td>
<td>Special Topics in Biochemistry</td>
<td>10</td>
</tr>
<tr>
<td>BIO 730</td>
<td>Molecular Diagnostics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 740</td>
<td>Cellular Communication</td>
<td>10</td>
</tr>
</tbody>
</table>
### Table C: Restricted elective courses for the Master in Research Molecular Biology

<table>
<thead>
<tr>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 610 Molecular Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 620 Special Topics in Cellular Biology</td>
<td>10</td>
</tr>
<tr>
<td>BIO 630 Nucleic Acids</td>
<td>10</td>
</tr>
<tr>
<td>BIO 640 Molecular Biology II</td>
<td>10</td>
</tr>
<tr>
<td>BIO 650 Special Topics in Bioinformatics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 660 Developmental Genetics: Embryos, Cells and Genes</td>
<td>10</td>
</tr>
<tr>
<td>BIO 670 Imaging in Biological Sciences</td>
<td>10</td>
</tr>
<tr>
<td>BIO 700 Molecular Biology II</td>
<td>10</td>
</tr>
<tr>
<td>BIO 710 Special Topics in Human Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 720 Special Topics in Biochemistry</td>
<td>10</td>
</tr>
<tr>
<td>BIO 730 Molecular Diagnostics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 740 Cellular Communication</td>
<td>10</td>
</tr>
<tr>
<td>BIO 750 Cancer Biology</td>
<td>10</td>
</tr>
<tr>
<td>BIO 760 Topics in Genomics and Proteomics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 770 Biostatistics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 780 Autonomous Study I</td>
<td>10</td>
</tr>
<tr>
<td>BIO 790 Autonomous Study II</td>
<td>10</td>
</tr>
<tr>
<td>BIO 800 Postgraduate Seminar series</td>
<td>0</td>
</tr>
<tr>
<td>BIO 801 Postgraduate Seminar series</td>
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</tr>
</tbody>
</table>

### Table E: Restricted elective courses for the Ph.D. in Molecular Biology

<table>
<thead>
<tr>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 610 Molecular Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 620 Special Topics in Cellular Biology</td>
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<tr>
<td>BIO 630 Nucleic Acids</td>
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<tr>
<td>BIO 640 Molecular Biology II</td>
<td>10</td>
</tr>
<tr>
<td>BIO 650 Special Topics in Bioinformatics</td>
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</tr>
<tr>
<td>BIO 660 Developmental Genetics: Embryos, Cells and Genes</td>
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<tr>
<td>BIO 670 Imaging in Biological Sciences</td>
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<tr>
<td>BIO 700 Molecular Biology II</td>
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<tr>
<td>BIO 710 Special Topics in Human Genetics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 720 Special Topics in Biochemistry</td>
<td>10</td>
</tr>
<tr>
<td>BIO 730 Molecular Diagnostics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 740 Cellular Communication</td>
<td>10</td>
</tr>
<tr>
<td>BIO 750 Cancer Biology</td>
<td>10</td>
</tr>
<tr>
<td>BIO 760 Topics in Genomics and Proteomics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 770 Biostatistics</td>
<td>10</td>
</tr>
<tr>
<td>BIO 780 Autonomous Study I</td>
<td>10</td>
</tr>
<tr>
<td>BIO 790 Autonomous Study II</td>
<td>10</td>
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</table>

### Table F: Compulsory Courses for the Ph.D. in Molecular Biology

<table>
<thead>
<tr>
<th>Course Title</th>
<th>ECTS</th>
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</thead>
<tbody>
<tr>
<td>BIO 800 Postgraduate Seminar series</td>
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<tr>
<td>BIO 801 Postgraduate Seminar series</td>
<td>0</td>
</tr>
<tr>
<td>BIO 802 Postgraduate Seminar series</td>
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</tr>
<tr>
<td>BIO 803 Postgraduate Seminar series</td>
<td>0</td>
</tr>
<tr>
<td>BIO 810 Comprehensive Examination of Ph.D. students</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note: Not all courses are offered every year, and the Department reserves the right to add new courses.*
Course Descriptions

**BIO 610 Molecular Genetics I**
Human Genome and the molecular basis of inheritance, contribution of modern genetics to medical pathology. Genetic phenomena relating to monogenic and polygenic diseases, meaning of mutations and genetic polymorphisms, DNA linkage analysis and molecular diagnostics, genetic predisposition, germinal and somatic mutations. Inherited kidney diseases, hemoglobinopathies, genetic testing and ethical dilemmas in the practicing of genetic investigation and diagnosis.

**BIO 620 Selected Topics in Cell Biology**

**BIO 630 Nucleic Acids**
The structure and function of nucleic acids (DNA and RNA) is the overall aim in this graduate course of the Department of Biological Sciences. 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 for graduate-level students specializing in molecular biology, biotechnology and molecular genetics and requires introductory-level biochemistry and molecular biology as prerequisites. Some key features of the course include topics in technologies used in the study of nucleic acid structure and properties and state-of-the-art nucleic-acid-based biotechnological advances.

**BIO 640 Molecular Biology I**
This course requires knowledge of 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 organization of DNA and the role of topoisomerases in this organization; 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 remodeling (DNA methylation and histone acetylation); micro RNAs and RNA interference.

**BIO 680 Scientific Methodology in Molecular Biology**
This course aims at the theoretical training of students, both in the traditional scientific methodology (Scientific Hypothesis formulation, proof and modification through appropriate experimentation and interpretation of results) and in modern data-driven approaches that have 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. The students will have to study meticulously a number of original and review articles on a subject of biological sciences that they will choose in collaboration with their tutor, as well as to study and understand through the use of special laboratory manuals, the various methods of modern molecular biology, so that they become familiar with routine laboratory methods which molecular biologists use in order to achieve their scientific goals.

**BIO 700 Molecular Biology II**
Membrane structure, lipid bilayer, membrane proteins and membrane transport. Carrier proteins, ion channels, membrane potential, intracellular membrane compartments and transport. Regulation of cell cycle and programmed cell death (apoptosis).

**BIO 710 Special Topics in Human Medical Genetics**
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 placed on common diseases or paradigm diseases such as Polycystic Kidney Disease, Tuberous Sclerosis, Huntington’s Chorea, Myotonic Dystrophy,
Cystic Fibrosis, Thalassaemia, Cardiovascular conditions, Chromosomal abnormalities and others.

**BIO 720 Special Topics in Biochemistry**
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**
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 Cell Communication**
Tissue architecture and general principles of cellular communication, types of junctions and adhesive structures and molecules, extracellular matrix. Signaling molecules, membrane and intracellular receptors, signaling cascades and signal transduction, cellular responses. G-protein-linked membrane receptors, cAMP, PKA, phospholipase C-ß, 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-κB pathways. Intercellular communication and regulation of gene expression. Neuronal communication, small molecule and neuropeptide neurotransmitters, action potential-ionic hypothesis, neurotransmitter/ion receptors.

**BIO 750 Cancer Biology**
This course requires very good knowledge of molecular biology, molecular genetics, and cellular biology, but it also requires knowledge of the basic principles of immunology, virology, physiology and pathology. The course will include lectures as well as group discussions on topics relating to cancer. Each student must prepare and present an in-depth study on a specific topic that will be determined by the professor at the beginning of the semester. The lectures will include, but are not limited to the following topics: understanding the process of carcinogenesis, definition of cancer, cancer pathology and cancer classification; factors that contribute to the promotion, progression and metastasis of cancer. Emphasis will be placed on the molecular mechanisms leading to carcinogenesis (especially aberrations in cell cycle controls) and metastasis. An important component of this course is to present the current methods for the treatment, prevention (including chemoprevention) and early diagnosis of cancer.

**BIO 760 Selected Topics in Genomics and Proteomics**
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 post-genomic era and the challenge of deciphering gene product function through the use of DNA arrays for high throughput gene expression analysis, protein and antibody arrays, high throughput protein-protein interaction and crystallography approaches.

**BIO 770 Biostatistics**
Study of statistics methodology and analysis and their application in biological systems. Statistics and epidemiology, survival models.

**BIO 780 Independent Study I**
**BIO 790 Independent Study II**
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. It is possible to undertake and prepare two such essays per semester.

**BIO 800-803 Graduate Seminars**
The students are expected to attend a series of lectures during which invited speakers present research work in the general field of Biological Sciences.
Research Interests of the Academic Staff

**Andreas Constantinou**

Professor

Dr. Constantinou has dedicated his research efforts to the fight against cancer. Shortly after obtaining his Ph.D. degree he made a breakthrough discovery that linked the regulatory subunit of cAMP-dependent Protein Kinase to an enzyme that regulates the three-dimensional form of DNA, known as DNA topoisomerase I. His subsequent research revealed that genistein, a component of soybeans, is a DNA topoisomerase II inhibitor and an inducer of tumor cell differentiation. He identified the molecular mechanisms by which genistein induces apoptosis in breast cancer cells. He is now evaluating how soybean components could inhibit carcinogenesis either by binding to the estrogen receptor or by acting as antioxidants.

He has developed assays for the identification and characterization of new cancer therapeutic drugs but he is also strongly interested in the prevention of cancer. His research is designed to test the hypothesis that over 50% of all cancers can be prevented with proper nutrition and lifestyle modifications, and therefore it is possible to identify food components that alone, or in combination, can provide protection against cancer. The focus of his future studies is in the identification of new molecular targets for cancer chemoprevention.

**Constantinos Deltas**

Professor

Professor Deltas dedicates a large part of his research activities to the understanding of the molecular genetics and cell biology of various inherited diseases. He has a broad spectrum of interests in the fields of medical genetics, molecular nephrology and genetic research, aimed, among others, at serving directly the Cypriot patient. Prof. Deltas started up and directed for a number of years the Laboratory of Molecular Genetics C’ at the Cyprus Institute of Neurology and Genetics through which he offered molecular diagnostic services and awareness programs.

With the use of modern techniques of molecular biology and genetics, he aims at the delineation and investigation of hereditary diseases with emphasis on projects such as:

1. Epidemiological studies of the Hellenic and Cypriot populations aimed at generating the genetic map of Cyprus. He is interested in investigating the genetic relationships of the Cypriot population in general and specific groups/communities with neighboring peoples, and the identification of genes or genetic mutations that were transferred into the Cypriot gene pool by foreign conquerors and visitors (see the 30th Edition of the Annals of the Cyprus Research Center 2004, Cyprus Ministry of Education and Culture, pages 457-489).

2. Investigation of the genetics of Cystic Fibrosis, Familial Mediterranean Fever and development of diagnostic methodologies.

3. Genetics of inherited kidney conditions with emphasis on cystic diseases and investigation of molecular pathogenic mechanisms (Two hit Hypothesis, Renal Interstitial Fibrosis).

4. Development of methods and models that will permit the genetic or pharmaceutical intervention and probable therapy of renal cystic diseases (siRNA, Polycystic Kidney Disease Knockdown Model).

He collaborates with scientists and other laboratories from Cyprus, Greece, Europe and the United States, in mapping and cloning new genes responsible for human diseases. His research also led to the delineation of genetic phenomena of direct interest to the Cypriot society, and to the implementation of preventive and awareness programs for several inherited conditions such as Cystic Fibrosis, Polycystic Kidney Disease, Familial Mediterranean Fever, Familial Hematuria and Alport Syndrome.

**Pantelis Georgiades**

Assistant Professor

Dr. Georgiades heads the Cytomolecular Genetics and Embryology Research lab, which is interested in understanding the still mysterious embryogenesis and embryo viability at the genetic and cellular level as well as embryonic stem cell biology.

Understanding of the above is very important for the development of genetic or cellular treatments for the most common, but still incurable, pregnancy complications including infertility due to early unexplained miscarriages as a result of early embryo death as well as for the disease of preeclampsia. Moreover, research into embryonic stem cells could contribute to the new field of tissue replacement medicine.

The research at the Cytomolecular Genetics and Embryology lab combines cutting-edge embryological,
genetic, epigenetic, cellular and molecular methodologies such as culture and microsurgery of embryos, stem cell manipulation, gene inactivation or overexpression in embryos and stem cells, and molecular biology techniques. The lab shows great interest in the largely unexplored, but clinically important, field of Biology as applied to Medicine concerned with the influences (genetic and cellular) of extraembryonic tissues (such as the trophoblast) on embryo development (with special interest in the remarkable metamorphosis of the initially amorphous embryo, gastrulation) and survival as well as on embryonic stem cells.

**Leonidios Kostrikis**

Associate Professor

The long-term interest of his laboratory is the engineering and production of molecules and technologies for diagnostic or therapeutic applications of clinical importance. His present and future foci of research activity include studies to develop and produce biomedical applications, including diagnostic nucleic-acid-based assays for infectious agents and improved methods of devising and producing novel immunogens and original strategies to induce mucosal immunity. In previous studies, he defined several genetic polymorphisms associated with the transmission of human immunodeficiency virus type-1 (HIV-1) and progression of HIV-1 disease. In previous studies, he developed an automated method for detecting mutations, called "spectral genotyping." Furthermore, he has defined a technology for quantifying copy numbers of genes in human cells, which provides the fundamental component of numerous important applications for rapid and accurate quantification of specific nucleic acid sequences on a "per-cell-basis." He is currently developing technologies aimed at understanding the implications of viral and host determinants on the transmission of HIV-1 and the progression of HIV-1-induced disease. He is also developing diagnostic technologies for the rapid detection of biological agents that may be used as bio-terrorism weapons, such as virulent B anthracis strains and virulent strains of SARS-associated coronavirus. In future studies, his research activities will be broadly focused in the areas of (a) Molecular diagnostics, (b) Immunogen engineering and (c) Pharmacogenetics.

**Vasileios Promponas**

Lecturer

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:


The recently established Bioinformatics Research Laboratory has ongoing collaborations with research groups in Greece, the United Kingdom and Italy. It is expected that new collaborations will soon be established with other research laboratories in the University of Cyprus.

**Niovi Santama**

Assistant Professor

Research in the laboratory concerns the functional characterisation of molecular motors in mammalian neurons. In particular, work focuses on the kinesin-like superfamily of microtubule-based motor proteins. Interest in these motor proteins derives from their dynamic role in most cell biological processes: they have been implicated in biological phenomena as diverse as cell division, chemosensory transduction, early development, signal transduction pathways and axonal transport, to cite only a few.

The current specific interests of the laboratory are summarised as follows:

• Structural and functional characterisation in the nervous system of several new members of the kinesin
superfamily that have recently been cloned in the laboratory from mouse and human.

- Identification, study of alternative gene expression and functional characterisation in the nervous system of a new family of membrane-bound intracellular receptor proteins. Receptor-motor interactions are implicated in organelle motility and endoplasmic reticulum remodeling.

- Investigation of the role of mutations of motor protein genes or aberrations in motor protein gene expression in human neurodegenerative disease. The aim is to contribute to the elucidation of the molecular mechanism that leads to cell death, the identification of putative therapeutic targets and the design of patient molecular diagnostics.

In the framework of this research, the laboratory (www.mbblab.net) has respective collaborations with an EU-funded network of 7 laboratories in 5 European countries and other research networks involving the University of Dundee, the Hellenic National Research Institute, the University of Singapore and the Cyprus Institute of Neurology and Genetics. The laboratory is funded by the EU, the Muscular Dystrophy Association (US), the Leventis Foundation, the Telethon Foundation and the Research Promotion Foundation of Cyprus.

- Paris A. Skourides

Lecturer

The goal of our research group is to understand the cellular and molecular mechanisms involved in generating the three dimensional organization 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 isolated from the others. 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 which 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.

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Chemistry Graduate Programme at the University of Cyprus

The Department of Chemistry offers graduate programmes at the Master (M.Sc.) and Doctoral (Ph.D.) level. Today, 48 postgraduate students are enrolled in the graduate programme, 37 of whom are at the Doctoral level (more than any other department). The Chemistry Department has already awarded 19 Ph.D. degrees and 13 M.Sc. degrees.

Admission to the Graduate Programme

The Department admits graduate students every year at the M.Sc. and Ph.D. levels. The application deadline is usually April 15 (Fall Semester) and December 15 (Spring Semester). The applications are submitted to the Secretariat of the Department and are examined by a three-member faculty Graduate Studies Committee (GSC). The applications must include:

- a transcript of the undergraduate courses until the date of the application
- two recommendation letters from Professors of the student’s undergraduate or/and prior graduate studies
- curriculum vitae, and
- a cover letter explaining the reasons for which the candidate wishes to enter the Chemistry Graduate Programme at the University of Cyprus, and indicating the research area(s) of his / her interest(s).

The GSC may invite candidates for interview, but is not obliged to do so. The GSC may admit candidates to the Programme without interview, based solely on the application. Admitted students select their research supervisors from among the Chemistry faculty members for the supervision of their research. The supervisor is selected with the mutual agreement of the student and the faculty member. M.Sc. students may change research supervisor during the first semester of their studies.

Financial Support

The University of Cyprus provides financial assistance to the Chemistry postgraduate students in the form of teaching assistantships. Moreover, the postgraduate students can be supported financially through research Programmes from Cyprus or abroad for their research work carried out within their Ph.D. or M.Sc.

Credit Transfer from Other Universities / Previous Studies

The Chemistry Graduate Programme (M.Sc. and Ph.D. levels) includes both classroom courses and bibliographical studies, totalling 60 ECTS units. Doctoral students holding an M.Sc. degree from another University may be credited part or all of the 60 ECTS units after examination and recommendation by the GSC and approval by the Departmental Council. Moreover, doctoral students may spend up to one calendar year at universities abroad within student exchange programmes. M.Sc. students may attend courses at universities abroad corresponding to a maximum of 20 ECTS units. These units will be credited after examination and recommendation by the GSC and approval by the Departmental Council. Graduate students may be credited with up to 15 ECTS units for courses attended within another graduate programme, after examination and recommendation by the GSC and approval by the Departmental Council.
Master of Science (M.Sc.) Degree

The minimum duration of the 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, a student must successfully complete 120 ECTS units of the M.Sc. Chemistry Graduate Programme, and must write an appropriate Diploma Thesis. The required 120 ECTS units are obtained by attending 4 of the courses listed below (10 ECTS units each), and 2 Graduate Literature Studies (CHE 800 and CHE 810, 10 ECTS units each), while 6 research modules carrying 10 ECTS units each are credited through research for the Thesis.

Course Selection and Approval

M.Sc. students select their courses in agreement with their research supervisors. Course selection must be approved by the GSC.

CHE 800 Literature Study

M.Sc. students, in agreement with their research supervisors, must enroll 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 from their direct research area. Students must study this topic and present it in the form of a seminar (10 ECTS units). The supervision of CHE 800 is carried out by a Chemistry faculty member, who may be the supervisor or another Chemistry professor. The central element in the evaluation of CHE 800 is the proven thorough literature survey on the object of the study, including the latest developments. The examination and grading of this seminar is conducted, after an open presentation, by a two-member committee proposed by the topic supervisor, in which he/she participates. The final grade of the course is given as follows: 50% by the topic supervisor and 50% by the other member of the committee.

The final grade of the course is given as follows: 50% by the topic supervisor and 50% by the other member of the committee.

CHE 810 Literature Study

M.Sc. students, in agreement with their research supervisors, must enroll in the graduate Literature Study CHE 810, in the context of which they are required to select a topic from their immediate research interest (which will be the topic of their Diploma Thesis). The student must study this topic and present it in the form of a seminar (10 ECTS units). The supervision of CHE 810 is the responsibility of the research supervisor of the student. The central elements in the evaluation of CHE 810 are: (a) the proven thorough literature survey on the object of the study, including the latest developments and (b) the understanding of basic concepts immediately relevant to the content of the study. The examination and grading of this seminar is conducted, after an open presentation, by a two-member committee proposed by the research supervisor, in which he/she participates. The final grade of the course is given as follows: 50% by the research supervisor and 50% by the other member of the committee.

M.Sc. Research

The research topic (experimental or theoretical, or a combination of the two) is chosen in agreement with the research supervisor, and must aim 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 personal contribution of the student. The written document of 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 consisting of the
research supervisor, one Chemistry faculty member, and a third member who may be a faculty member of the Chemistry Department or of another Department of the University of Cyprus or a faculty member from a University abroad specializing in a related topic. The M.Sc. Thesis is submitted and defended only after written permission by the research supervisor, approved by the Chairman of the Department. One member of the Thesis Committee (but not the research advisor) is appointed as Thesis Committee Coordinator. Before defending his/her Thesis, the candidate must present his/her research results in a seminar given to an open audience.

**Doctor of Philosophy (Ph.D.) Degree**

The minimum duration of the 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, a student must successfully complete 240 ECTS units of the Doctoral Chemistry Graduate Programme, and must write a Ph.D. Thesis on an approved topic. A graduate student officially becomes a candidate for a Ph.D. degree after satisfactorily passing the Chemistry Qualifying Examination, in the 5th semester of graduate studies at the latest, and after approval by the Department. The required 240 ECTS units are obtained by attending 4 of the courses (listed below) carrying 10 ECTS units each, 2 Graduate Literature Studies (CHE 800 and CHE 810, 10 ECTS units each), the Chemistry Department Seminars (CHE 815, 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, each Ph.D. student who has passed his / her Chemistry Qualifying Examination must attend at least 4 seminars (lectures) per semester for at least 4 semesters. The student must present a seminar within that period. The seminar is graded by a three-member departmental committee appointed by the Chairman of the Department, after the recommendation of the research supervisor. The grade is submitted after fulfillment of the requirement for attendance at the Departmental Seminars. In case of failure, the student must present a new seminar during the next semester.

**Ph.D. Research**

In addition to the requirements described in the M.Sc. research given above, Ph.D. research should be of very high standard, such that the results are publishable in recognized, peer-reviewed, international research journals. The Chemistry Department demands as a minimum prerequisite towards a Ph.D. degree that the candidate has at least one scientific paper either published or accepted-for-publication in a journal of his/her own research area.

**Ph.D. Qualifying Examination**

This exam is offered at the end of the 4th–beginning of the 5th semester of graduate studies, and it is an oral examination. Students with a previous M.Sc. degree from the University of Cyprus or from another University, who have completed all the necessary ECTS units and have produced sufficient research in the first year of studies, may take the Qualifying Examination at the end of the 2nd semester. Each student is examined by a three-member committee, appointed by the Chairman of the Department after the recommendation of the research supervisor. The research supervisor participates in this committee but he does not chair it. The Qualifying Examination evaluates the level of understanding of the material in the 4 graduate courses that the student attended. 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. The Committee informs the Council of the Department of the successful/unsuccessful outcome of the Qualifying Examination. In case of failure, the student is eligible to retake the Chemistry Qualifying Examination with the same Committee, until the end of the 5th semester of his/her studies at the latest.

Doctoral Dissertation Proposal

After passing the Ph.D. Qualifying Examination and at least one year before the final defense of the Ph.D. Thesis, the Doctoral Dissertation Proposal must be successfully presented before a three-member Chemistry-faculty committee. The purpose of the Proposal is to examine whether the student has progressed with his/her research and to evaluate the quality, quantity and novelty of the research work.

Ph.D. Thesis Defense

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 demands as a minimum prerequisite towards a Ph.D. degree that the candidate has at least one scientific paper published or accepted-for-publication in an international peer-reviewed journal of his/her own research area. The final examination (defense) of the Doctoral Dissertation is conducted by a five-member examining committee, consisting of 3 members of the Chemistry Faculty teaching in the Ph.D. Chemistry Graduate Programme and 2 other members, who must be professors in the same or related research areas from another department or university. Before defending his/her Thesis in front of the committee, the candidate must present his/her research results in a seminar given to an open audience.

Chemistry Graduate Courses

Theoretical Courses: 10 ECTS units each
CHE 610 Physicochemical Methods in Inorganic Chemistry II
CHE 611 Physicochemical Methods in Inorganic Chemistry I
CHE 612 Physical Chemistry of Polymers
CHE 615 Separation Methods and Applications
CHE 626 Supramolecular Chemistry
CHE 631 Advanced Organic Chemistry I (Organosulfur and Organonitrogen Chemistry)
CHE 636 Organic Reactive Intermediates
CHE 638 Methods for Structure Characterization
CHE 640 Basic Principles of Colloid Chemistry
CHE 650 Introduction to Computational Chemistry
CHE 651 Raman Spectroscopy
CHE 654 Quantum Theory of Electronic Structure
CHE 670 Heterogeneous Catalysis
CHE 681 Biochemical Engineering
CHE 690 Synthesis, Characterization and Technology of Polymers
CHE 695 Aquatic Chemistry of Heavy Metals
CHE 720 Synthesis and Characterization Methods of Inorganic Compounds

Graduate and Department Seminars, Thesis Writing: 10 ECTS units each
CHE 800 Literature Study I
CHE 810 Literature Study II
CHE 815 Chemistry Department Seminars (for Ph.D. level only)

Research and Thesis Writing: 10 ECTS units each
CHE 821-826 M.Sc. research and M.Sc. thesis writing
CHE 880-899 Ph.D. research and Ph.D. thesis writing
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

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, particularly in the area of Environmental Technology, while increased participation is anticipated in the future. 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 (European Union)
2. Human Capital and Mobility (European Union)
3. Training and Mobility of Researchers (European Union)
4. Advanced Stimuli Responsive Materials Projects (JHPC/NEDO, Japan)
5. Research Training Networks (5th Framework Programme)
6. Environment and Sustainable Development (5th Framework Programme)
7. Quality of Life (5th Framework Programme)
8. Growth (5th Framework Programme, European Union)

The participation of researchers from the Department in Greece-Cyprus Bilateral Research Programmes and in the Programmes of the Cyprus Research Promotion Foundation (including PENEP Programmes) is also significant. From the applied research carried out in the Department of Chemistry, 3 patents have already been issued (1 International and 2 USA).

Research Laboratory Equipment

The Chemistry postgraduate students conduct their research work in laboratories established by Chemistry faculty members covering the above-mentioned research topics. The equipment in these research laboratories has been purchased mainly through the University budget (internal funding), totaling 2,000,000 CYP for the period 1993-2006. In recent years, several pieces of equipment have been purchased through European and Cypriot Research Programmes awarded to the researchers of the Department.

The most important research equipment of the Department of Chemistry is summarized below:

- 300 MHz Avance Bruker NMR spectrometer (NMR Laboratory)
- Xcalibur III Oxford single-crystal X-ray diffractometer (Large Instruments Laboratory)
- Shimadzu powder X-ray diffractometer (Large Instruments Laboratory)
- Q100 TA Differential scanning calorimeter (DSC, Large Instruments Laboratory)
- CHNS-O Eurovector Elemental Analyzer (Inorganic Chemistry Group)
- Princeton Electrochemistry Equipment (Inorganic Chemistry Group)
- MK I Sherwood magnetic balance (Inorganic Chemistry Group)
- KSV 3000 Langmuir-Blodgett apparatus (Physical Chemistry of Colloids Group)
- Leica polarized microscope (Physical Chemistry of Colloids Group)
- Jasco 6300 Fluorescence spectrometer (Physical Chemistry of Colloids Group)
- Metrohm Ion chromatograph (Physical Chemistry of Colloids Group)
- DMA 2000 TriTec Dynamic Mechanical Analyzer (Polymer Group)
- Brookhaven dynamic (90 Plus) and static (BIMwA) light scattering spectrophotometers (Polymer Group)
- Polymer Laboratories gel permeation chromatography system (Polymer Group)
- Polymer Laboratories HPLC system (Polymer Group)
- Perkin-Elmer Lambda 10 UV/Vis single beam spectrometer (Polymer Group)
- Micromeritics ASAP2010 adsorption apparatus (Porous Solids Group)
- Shimadzu thermal gravimetric analyser (TGA) (Porous Solids Group)
- Shimadzu FTIR Model 8501 (Porous Solids Group)
- Quadrupole mass spectrometers (2) Balzers, Omnistar, 1-300 amu (Heterogeneous Catalysis Laboratory)
- Waters HPLC system with dual pump and UV detector
- Shimadzu FTIR Model IR Prestige-21 with NIR kit and Pike Miracle ATR (Heterocyclic Organic Chemistry)
- CEM Discover microwave reactor (Heterocyclic Organic Chemistry)
- PolyTherm-A Wagner & Munz, Koefler-hotstage microscope (Heterocyclic Organic Chemistry)
- Perkin-Elmer Lambda 25 UV/Vis double beam spectrometer (Heterocyclic Organic Chemistry)
- HP 4890A Hewlett Packard gas chromatograph (Organic Chemistry Laboratory)
- Shimadzu gas chromatograph (Organic Chemistry Laboratory)
- 8510 Shimadzu FTIR with DRIFTS attachment and variable temperature environmental chamber (Porous Solids Group)
- Transient flow-systems (2) for conducting in situ catalytic and mechanistic studies (Heterogeneous Catalysis Laboratory)
- Resonance & Time-Resolved Resonance Raman system, including 2 Nd:YAG lasers, + a 0.75 m Spectrograph equiped with a LN2-cooled CCD.
- Time-Resolved fluorescence system (including an intensified gated CCD camera)
Description of Postgraduate Courses

Below are descriptions of the courses currently offered within the Postgraduate Chemistry Programme.

CHE 610 Physical Methods for Inorganic Chemistry II
Magnetism: Types of magnetic behavior, Van Vleck's equation, Applications of susceptibility measurements, Intramolecular effect, High spin-Low spin equilibria, Magnetic susceptibilities, Superparamagnetism.
Electron Paramagnetic Spectroscopy (EPR): Interpretation of g-values, Hyperfine couplings and zero field splittings, Ligand hyperfine couplings, First row transition metals, EPR of metal clusters.
Electrochemistry: Electrode kinetics, Mass transfer, Voltammetry, Cyclic voltammetry, Polarography, Excaustive Electrolysis, Chemical reaction on electrodes, assignment of voltamographs.

CHE 611 Physical Methods for Inorganic Chemistry I
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 constante 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, Relaxtion, 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
- 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, vapor pressure, light, X-ray and neutron-scattering, ultracentrifugation, viscosity, size exclusion chromatography.
- Theoretical studies of the conformations of polymer chains.
- Semicrystalline phases. Crystalline lamellae of polymers and the problem of chain reentry. Spherulites, dendrites and other morphologies, liquid crystalline polymers.
CHE 615 Separation Methods and Applications

The main purpose of this course is to familiarize the student 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 isoelectric focusing, capillary zone electrophoresis, micellar electrokinetic chromatography, capillary electrochromatography)

Capillary Electrophoresis (capillary isoelectric focusing, capillary gel electrophoresis, capillary isotachophoresis, capillary zone electrophoresis, micellar electrokinetic chromatography, capillary electrochromatography)

CHE 626 Supramolecular Chemistry

Definition and Development of Supramolecular Chemistry; Host–Guest Chemistry; Energetics of Supramolecular Complexes: Experimental Methods; Templates and Self-Assembly; Molecular Devices; Biological Mimics; Liquid Crystals; Micelles, Liposomes, LB-Films; Layer-by-Layer Assembly of Polyelectrolytes; Fullerenes and Carbon Nanotubes.

CHE 631 Advanced Organic Chemistry I

(Ornansulfur and Organonitrogen Chemistry)

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

The course deals with reactive intermediate compounds of Organic Chemistry and 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


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

- Interparticle forces in colloidal systems. Van der Waals forces, modern theory of Lifshitz. Modern electric double layer theory. Colloid stability, DLVO theory.

CHE 650 Introduction to Computational Chemistry

The course provides an overview of computational methods and their applications in the prediction of physicochemical properties of molecules. Force fields, semi-empirical, DFT and ab initio methods, the most common basis sets and qualitative molecular orbital theory are discussed.
CHE 651 Raman Spectroscopy

Introduction to Lasers


Time-Resolved methods: Pump-Probe, Stokes and Anti-Stokes Resonance Raman.

Applications: environmental, biological, charge-transfer, reaction dynamics.

CHE 654 Quantum Theory of Electronic Structure

Schrödinger’s equation. Orbitals of one-electron atoms.


Aromaticity and antiaromaticity. Quantum chemical calculations on molecules with many electrons. Ab initio computational methods.

CHE 670 Heterogeneous Catalysis

- 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


CHE 690 Synthesis, Characterization and Technology of Polymers


CHE 695 Aquatic Chemistry of Heavy Metals

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 behavior 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 discussed.

CHE 720 Methods of Synthesis and Characterization of Inorganic Compounds

- Synthesis of Inorganic Molecules: Synthetic techniques for the synthesis of inorganic compounds in aqueous solution and organic solvents.
Synthetic techniques for the synthesis of inorganic compounds in inert atmosphere.

- Characterization of Inorganic Compounds:
  Characterization in the solid state with infrared, UV-Vis, X-Ray, magnetism.
  Characterization in solution with Electrochemistry, UV-Vis, multinuclear NMR, EPR, magnetism, electrochemical methods.

Research Interests of the Academic Staff

- **Nikolaos E. Chronakis**
  *Lecturer*
  His research is focused on:
  
a) The tether-directed remote functionalization of fullerene C60. This method is used for the synthesis, characterization and the development of new C60-cyclophane type bis- and trisadducts of [60]fullerene for the construction of functional supramolecular assemblies. Extension of this method can give facile access to enantiomerically pure Bingel multiadducts with fascinating optoelectronic properties and strongly antioxidant behaviour.
  
b) The synthesis of chiral [60]fullerene helical polymers and fullerene-porphyrin conjugates for Photoinduced Electron Transfer.
  
c) The synthesis and characterization of macrocyclic oligomalonates. This family of molecules show pronounced crystallizability and arrange into columnar stacks, forming narrow channels and pores extended through the entire single crystal. Such systems promise to form columnar assemblies featuring pores for molecular recognition and transport.

- **Angelos M. Efstathiou**
  *Associate 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 H2 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 physicochemical 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 two specially designed gas flow-systems that allow steady-state and transient catalytic experiments to be conducted, quadrupole mass spectrometers, a gas chromatograph, CO, CO2, NOx, N2O and H2 gas analyzers: in-situ DRIFTS, UV-v / 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).

- **Sophia C. Hayes**
  *Lecturer*
  Her research interests extend in different fields but with the common denominator the interest in the understanding of the basic photochemical & photophysical behavior of the system of interest. Current research interests focus on the following topics:
  
a) Biophysics of proteins that are involved in a variety of illnesses, and especially the mechanisms and dynamics of their folding process.
  
b) Photochemistry of conjugate polymers for use in optoelectronic devices, and
  
c) Photochemistry of environmentally important molecules such as nitryl chlorides.

- **Constantina P. Kapnissi-Christodoulou**
  *Lecturer*
  Her research interests include the following: (a) analytical separations using open-tubular capillary electrophromatography (OT-CEC) and micellar electrokinetic chromatography (MEKC), and (b) imaging of individual amyloid plaques for the diagnosis of Alzheimer’s disease using near-field third-harmonic-generation (THG) microscopy. The goal of the first part of her research is to develop chromatographic and electrophromatographic methods for improved achiral and chiral separations of...
The second part focuses on the development of a modern imaging technique that will be used to improve the diagnosis of Alzheimer’s disease and the possibility of distinguishing patients with Alzheimer’s disease from those with vascular dementia. In addition, this technique can increase the knowledge of the processes leading to beta amyloid (Ab) accumulation, and to neuronal death. This, in turn, should make the development of therapeutic agents possible to effectively reduce disease progression. A THG imaging using a near-field scanning optical microscope (NSOM) will be used for the production of high-resolution images of amyloid plaques (APs) with no photodamage or toxicity.

- **Anastasios D. Keramidas**
  Associate 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 ∞. Koutentis**
  Assistant 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**
  Associate Professor

  In the area of Physical Chemistry of Colloid and Polymer Systems, the research emphasis is on using surfactant or polymer/surfactant systems for the production of composite organic/inorganic materials with interesting electrical, optical, etc., properties. Liquid crystalline surfactant phases, or polymer and polyelectrolyte solutions are used as templates for the crystallization of noble metals and semiconductors. The Langmuir-Blodgett method is used to study the surface properties of metallorganic surfactants. Finally, the influence of electrolytes in lipid systems is examined experimentally and theoretically.

  In the area of Computational Chemistry, computations using Molecular Mechanics and Dynamics are carried out, with the goal of modeling the structure of electrolyte solutions in the vicinity of surfaces and the salting-out effect of organic compounds.

  The group currently collaborates with the Department of Materials, ETH (Zurich, Switzerland), with the French Nuclear Research Centre in Saclay (France), with the Moor Planck Institute for Colloids (Golm, Germany), with the University of Patras (Greece), and with the Department of Microscopy of the Cyprus Institute of Genetics.

- **Athanasios Nicolaides**
  Assistant Professor

  His research interests include (a) strained alkenes and their derivatives, (b) carbenes and nitrenes, (c) application of quantum chemical computations to various organic and environmental chemistry problems. In collaboration with researchers in Japan (Mie University) a series of carbenes and nitrenes are being systematically generated photochemically at low-temperature and characterized by matrix-isolation spectroscopy. Quantum-chemical calculations aid in the proper identification of these exotic species and in elucidating their electronic structure. In the area of strained alkenes the focus is in the synthesis of organometallic complexes of a homologous series of pyramidalized olefins, which can potentially serve as precursors for the synthesis of organic compounds with well-defined geometry and control over the rigidity of the carbon skeleton.
**Ioannis Pashalidis**  
*Assistant Professor*

Study of the chemical behavior of f 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 behavior under physiological conditions and evaluate their possible use in the decorporation of radionuclides from contaminated persons.

**Costas S. Patrickios**  
*Associate Professor*

Synthesis, characterization, modeling 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, thermodynamic theories are applied for the prediction of polymer behavior upon aggregation in selective solvents and upon adsorption on surfaces.

**Anastasios J. Tasiopoulos**  
*Lecturer*

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 Persons**

For any problem or question, postgraduate students and candidates for postgraduate studies may contact the Departmental Postgraduate Programme Coordinators.

The current coordinator of the Programme is Assistant Professor Ioannis Pashalides.

Ioannis Pashalides  
Tel.: 22892785  
pspasch@ucy.ac.cy

**Department Secretary**

Tel.: 22892780 / 22892800  
Fax.: 22892801  
http://www.ucy.ac.cy/~chemweb/
Introduction

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.

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 Foundation for the Promotion of Research and local industry.

Over the last three years, our Department has developed intensive activities around the general theme of the Information Society. On this theme, four research programmes related to Telemedicine, Telenursing, and Intermediary Infrastructures for Web Services have already started with local and European funding. In parallel, the Department has helped to shape national strategy and policy on issues related to the Information Society, and has also alerted local industry and organisations to the development perspectives of Cyprus in relation to the same themes.

In the last six years the Department has secured its participation in approximately one hundred and eleven research programmes that are funded by the European Union, most of them within the Sixth Framework Programme “Information Society Technologies.” This budget exceeds six million Euros and has assisted in the employment of new researchers and postgraduate students.

In recent years, the Department of Computer Science has co-organised a number of international conferences, including:

- 8th Panhellenic Conference on Informatics, 8-10 November 2001, Nicosia.
- 9th Conference on Artificial Intelligence in Medicine Europe, 18-22 October 2003, Protaras.
- 2nd European Across Grids Conference, October 2003

• The Development of Higher Education in Cyprus in the light of the Reforms on a European and International Scale, May 2004

• 1st International Conference on Leveraging Applications of Formal Methods (ISOLA 2004), October 2004, Paphos

• 3rd International Conference "On the Move Federated Conferences 2004", November 2004

• 1st International Symposium on Leveraging Applications of Formal Methods, December 2004

• 11th European Wireless Conference 2005 «Next Generation Wireless and Mobile Communications and Services", 10-13 April 2005

• European Grid Conference 2005, April 2005, Amsterdam

• 6th International Conference on Mobile Data Management (MDM '05), 9-13 May 2005, Ayia Napa

• WorkShop on Modeling and Control of Complex Systems, 30 June-1 July 2005, Ayia Napa


• 17th Eurographics Symposium on Rendering, 26-29 June 2006, Nicosia.

• Ayia Napa Summer Seminar, 30 June-1 July 2006, Ayia Napa.


Computer Laboratories and Research Facilities

In early 2003 the Department moved to buildings located at the newly constructed University campus, which offer ample space for offices as well as for research and teaching laboratories.

In total, the Department houses six teaching laboratories, including a digital lab and a walk-in lab, with more than 200 work stations. Ten research laboratories accommodate approximately 40 postgraduate students and research associates who participate in the various research projects of the Department. The number of research labs is expected to grow to 20 in the next few years.

The computer equipment of the Department includes modern multiprocessor servers that run under AIX, Solaris and Linux, 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. Programme

The M.Sc. programme in Advanced Information Technologies is addressed primarily to graduate students who want to specialize in advanced areas of Computer Science (and possibly also want to prepare for Ph.D. research), but also to professionals who wish to earn a postgraduate degree.

To be admitted, a candidate must possess a first degree in Computer Science or related subject from an accredited university with an overall grade of “Very Good.” Any relevant industrial experience may
be considered an additional advantage. The Programme has an annual intake of about 20 students.

The programme lasts three semesters and is structured as follows:

**First Semester**
Four courses from the following list:
- CS 601 - Distributed Systems
- CS 602 - Foundations of Web Technologies
- CS 603 - Advanced Software Engineering
- CS 604 - Artificial Intelligence
- CS 605 - Advanced Computer Architecture I
- CS 606 - Computer Networks and the Internet

**Second Semester**
Four courses from the following list (the course CS 671 – Computer Science: Research and Technology is compulsory):
- CS 651 - Data Management for Mobile Computing
- CS 652 - E-Commerce
- CS 654 - Learning Technologies and Open and Distance Learning
- CS 655 - Advanced Computer Architecture II
- CS 656 - Computer Graphics: Modeling and Realism
- CS 657 - Wireless Computer Networks
- CS 658 - Digital Video Processing
- CS 661 - Multi-Agent Systems
- CS 662 - Machine Learning and Data Mining
- CS 663 - Computational Logic
- CS 664 - System Analysis and Verification
- CS 665 - Constraint Solving Methods
- CS 666 - Computational Bioscience
- CS 671 - Research Methodologies in Computer Science
- CS 699 - Special Topics in Computer Science

**Third Semester**
In the third semester, students pursue individual projects.

**Course Descriptions**

**CS 601 Distributed Systems**
Basic concepts and principles of distributed systems. Communication, processes and synchronization. Faults. Naming. Distributed file systems and distributed operating systems. Security and cryptography in distributed systems. Distributed shared memory and its consistency. Distributed algorithms and distributed programming. Design and development of applications in distributed environments. Case-studies of specific distributed systems. Practical exposition with programming project or programming exercises.

**CS 602 Foundations of Web Technologies**

**CS 603 Advanced Software Engineering**

**CS 604 Artificial Intelligence**

**CS 605 Advanced Computer Architecture I**
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**
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 Modeling and Traffic Engineering. Congestion Control and Resource Allocation. Network Design and Optimization.

**CS 651 Data Management for Mobile Computing**

**CS 652 E-Commerce**

**CS 654 Learning Technologies and Open and Distance Learning**
Learning Technologies and Distance Learning Systems, Learning theories and Distance Learning, systems for developing learning material, Standards and quality control of learning material, Courses and educational software, Exploration of active learning techniques, Research issues in Distance Learning.

**CS 655 Advanced Computer Architecture II**
Support for parallel programme execution, parallel architectures, different types of multiprocessor interconnection networks, compilation of parallel programmes, and performance analysis of various parallel applications.

**CS 656 Computer Graphics: Modeling and Realism**

**CS 657 Wireless Computer Networks**
Wireless environment, Interference and other problems in wireless communications, basic principles of cellular wireless networks and wireless local area networks. New architectures and technologies of wireless networks and wireless communication (e.g., ad-hoc and sensor networks). Resource management techniques, Next Generation wireless networks, design and planning of wireless networks, protocols for wireless and mobile networks.

**CS 658 Digital Video Processing**
CS 661 Multi-Agent Systems

CS 662 Machine Learning and Data Mining

CS 663 Computational Logic

CS 664 System Analysis and Verification

CS 665 Constraint Solving Methods

CS 666 Computational Bioscience
General framework and systems of Abductive and Inductive Logic Programming. Application of methods from the framework to problems and topics of Molecular Biology such as Gene Pathways, Signal and Regulating Networks, Metabolic Networks and Gene Therapy.

CS 671 Research Methodologies in Computer Science
Seminars/lectures in Computer Science. Research literature reviewing. Presentation of technical study.

CS 699 Special Topics in Computer Science
The content of the course is according to the specific topic.

Ph.D. Programme
The Department offers Postgraduate Programmes at the Ph.D. level in different specializations of Computer Science. 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 postgraduate courses amounting to at least 60 ECTS units (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.
Each of the above requirements must be met within the time limits specified by the Regulations of Graduate Studies of the Department.

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 student.

Research Interests of the Academic Staff

- **Andreas Andreou**
  Assistant Professor

- **Chris Christodoulou**
  Assistant Professor
  Computational and Cognitive Neuroscience, Artificial Neural Networks, Machine Learning, Neuroinformatics and Bioinformatics.

- **Yiorgos Chrysanthou**
  Assistant Professor
  Computer Graphics, Virtual and Augmented Reality.

- **Marios D. Dikaiakos**
  Associate Professor

- **Yannis Dimopoulos**
  Associate Professor
  Artificial Intelligence, Knowledge Representation and Reasoning, AI planning, Non-monotonic Reasoning, Constraint Satisfaction.

- **Paraskevas Evripidou**
  Professor
  Parallel Processing and Computer Architecture, Mobile and Pervasive Computing.

- **Chryssis Georgiou**
  Lecturer

- **Antonis Kakas**
  Professor
  Artificial Intelligence, Knowledge Representation and Reasoning, Cognitive Agents, Machine Learning, Computational Bioscience.

- **Elpida Keravnou-Papailiou**
  Professor
  Artificial Intelligence in Medicine.

- **Marios Mavronicolas**
  Associate Professor

- **George Papadopoulos**
  Professor
  Component-Based Systems, Parallel and Distributed Systems, Cooperative Information Systems.

- **Constantinos Pattichis**
  Associate Professor
  Intelligent Systems, Neural Networks, Genetic Algorithms, Signal and Image Processing and Analysis, Telematics and their applications in Medicine.

- **Anna Philippou**
  Assistant Professor

- **Andreas Pitsillides**
  Associate Professor
  Fixed and Wireless/Mobile Networks (including TCP/IP, UMTS, WLAN, ad-hoc and Sensor Networks), Control Theory (including Nonlinear Control, Adaptive Control and
Fuzzy Control) with applications to Networking, and Telehealth Care Systems.

- **George Samaras**
  *Professor*

- **Yiannos Sazeides**
  *Assistant Professor*

- **Christos N. Schizas**
  *Professor*
  Computational Intelligence, Artificial Neural Networks, Genetic Algorithms, Systems Theory, Computer Applications in Medicine, Engineering, Meteorology, Financial and Diagnostic Systems.

- **Pedro Trancoso**
  *Assistant Professor*
  Computer Architecture, Memory Hierarchy and Advanced Memory Technologies, Architecture-Aware Optimizations for Database Workloads, and Power-Aware Optimizations.

- **Vasos Vassiliou**
  *Lecturer*
  High-Speed Networks (MPLS), Mobile Networks (MIP, Ad-hoc, Sensor), Wireless Telecommunications (UMTS), Traffic Engineering.

**Contact Person**

Department Secretary  
Tel.: 22892700  
Fax: 22892701
Postgraduate Studies Programme
The Department offers postgraduate programmes which lead to the following degrees:
1. M.Sc.
2. Ph.D.

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, the other members of which are also appointed by the Departmental Board. An interdepartmental committee coordinates the interdepartmental postgraduate programme.

Admission to Postgraduate Programmes
The procedure of admission to the Postgraduate Programmes is as follows:
The number of postgraduate students to be admitted is announced separately for each specific programme at the Master or Doctorate level.

Applicants must hold a university degree, granted by an institution recognized in the country where it operates or has been judged as equivalent to a university degree by the Cyprus Council for Recognition of Higher Education Qualifications. Moreover, students have the right to apply if they obtain their university degree - which fulfills the aforementioned criteria - before the date the postgraduate programme commences.

The applications are submitted to the Department where they are examined by the Postgraduate Studies Committee, which makes suggestions to the Departmental Board for final approval.

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)
- 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 IN APPLIED MATHEMATICS

Regulations
To obtain a Master degree in Applied Mathematics successful completion of a minimum of 90 ECTS is required.

Each course corresponds to 10 ECTS, the Master thesis to 15 ECTS and Seminars to 5 ECTS.

A postgraduate student may attend maximum two Seminars.

An undergraduate student may attend maximum two postgraduate courses, based on the regulations of postgraduate studies.

Regular meetings of the teaching staff will take place for the programme of Applied Mathematics (Undergraduate and Postgraduate) where it will be decided which courses will be offered and by whom they will be taught.

Indicative Programme of Studies

<table>
<thead>
<tr>
<th>Options</th>
<th>ECTS per Course</th>
<th>Total ECTS</th>
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<tr>
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<td>60</td>
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<tr>
<td>6 Compulsory Courses</td>
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</tbody>
</table>
2 Optional Courses 10 20
2 Seminars 5 10
TOTAL 90
or
6 Compulsory Courses 10 60
1 Optional Course 10 10
1 Seminar 5 5
Master Thesis 15 15
TOTAL 90

List of Courses

Compulsory Courses

Category I
Two of the following:
MAS 601 Measure and Integration
MAS 604 Functional Analysis
MAS 606 Function Theory of One Complex Variable

Category II
Two of the following:
MAS 603 Partial Differential Equations
MAS 621 Numerical Linear Algebra
MAS 671 Numerical Solution of Ordinary Differential Equations
MAS 673 Finite Element Methods

Category III
Two of the following:
MAS 613 Ordinary Differential Equations
MAS 672 Numerical Solution of Partial Differential Equations
MAS 677 Topics in Numerical Analysis I
MAS 678 Topics in Numerical Analysis II
MAS 679 Topics in Numerical Analysis III
MAS 680 Seminar in Applied Mathematics I
MAS 681 Seminar in Applied Mathematics II
MAS 682 Classical Mechanics
MAS 683 Fluid Dynamics
MAS 684 Topics in Applied Mathematics I
MAS 685 Topics in Applied Mathematics II
MAS 686 Topics in Applied Mathematics III
MAS 687 Topics in Differential Equations
MAS 688 Topics in Differential Equations
MAS 689 Topics in Differential Equations

Note: Category III also includes all the courses offered under the Categories I and II.

Elective Courses

MAS 602 Fourier Analysis
MAS 605 Elliptic Partial Differential Equations of Second Order
MAS 608 Evolution Differential Equations with Partial Derivatives of Second Order
MAS 611 Harmonic Analysis
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 633 General Relativity

PH.D. IN MATHEMATICS – Applied Mathematics

For the fulfillment of a Doctor of Philosophy Degree the requirements are:

1. Successful completion of 120 ECTS
   at the postgraduate level in accordance with the provisions of the programme of studies of the Department. Students with a Master degree are partially or fully exempted from this requirement.

2. Comprehensive Examination (CE)
   The candidate elects two areas from among the four areas included in the Syllabus Content for the Written Comprehensive Examination, on which she/he will be examined.

   Students should successfully complete the CE at the latest by the fifth semester of their studies. If the student fails, she/he is allowed to repeat the examination once more. If the student fails the CE a second time his/her studies in the doctoral programme are terminated.
3. Oral Examination

The candidate for the Ph.D. must present a research proposal for a Doctoral Thesis before a three-member Committee.

The committee is appointed by the Postgraduate Studies Committee of the Department after recommendation by the Research Advisor, who is also the Head of the Committee. One member of the Committee could be a member of the academic staff from another department of the University (in a related field of studies) or from another university or research center.

The presentation takes place at the latest one year after the admission of the student as a doctoral candidate (which means fulfilling the requirements contained in paragraphs 1 and 2 above). A prerequisite before the commencement of the dissertation is the consent by a member of the academic staff of the Department to act as Research Advisor. Without a Research Advisor acceptance to the doctorate programme is revoked.

The Research Advisor is appointed by the Departmental Board after a proposal by the Postgraduate Studies Committee and in coordination with the student and the proposed Advisor. The Research Advisor supervises the research or any other work of the student and provides the necessary guidance.

4. Doctoral Thesis

A doctoral thesis can be submitted only after the completion of at least four semesters in the postgraduate programme at Ph.D. level, and after the student has completed successfully the comprehensive exam and obtained the required credit units.

The dissertation must include significant research findings and must contain elements which testify to the candidate’s personal contribution. The research must be original and of such high caliber that it can be accepted for publication in international academic journals.

5. Defence of the Thesis

Defence of the thesis takes place before a five-member Committee. This Committee is appointed by the Postgraduate Studies Committee, after a recommendation by the Research Advisor and is composed of:

- Three members of the academic staff of the Department, one of whom must always be the student’s Research Advisor.
- One member from another university or research center.
- One member from another department of the University in a related field of studies or from another university or research center.

The Head of the Examining Committee is a member of the academic staff of the Department, but not the Research Advisor.

The procedure for defence of the doctoral thesis comprises three stages:

- Presentation of the doctoral thesis in an open lecture of 30-45 minutes duration.
- Discussion of the thesis with the members of the Committee.
- Meeting of the Committee to decide its final proposal.

After completion of the defence procedure, the Committee submits a written substantiated proposal to the Chairperson of the Department including, when applicable, suggestions to the prospective Doctor. The Chairperson submits the proposal of the Committee to the Senate for ratification.

If the Examining Committee proposes modifications, the final Senate approval to grant the title is given after a written assurance that the modifications have been carried out.

If the doctoral thesis has been rejected, the candidate is entitled to ask for a repetition of the defence procedure one more time. The terms for resubmission are set out in writing by the Examining Committee.
The requirements for the doctoral degree must be fulfilled within eight (8) academic years, maximum.

The Syllabus Content for the Written Comprehensive Examination (WCE)

APPLIED MATHEMATICS

MATHEMATICAL ANALYSIS (APPLIED)
Basic theory of metric space. $\sigma$-algebras, measures, exterior (or external) Measure. Borel measure on the real line. Measurable functions, integration.


PARTIAL DIFFERENTIAL EQUATIONS

NUMERICAL ANALYSIS


MASTER IN PURE MATHEMATICS
Regulations

To obtain a Master degree in Pure Mathematics successful completion of a minimum of 90 ECTS is required.

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or

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or

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**List of Courses**

**Compulsory Courses**

- MAS 601 Measure and Integration
- MAS 606 Function Theory of one Complex Variable
- MAS 632 Riemannian Geometry
- MAS 627 Group Representation Theory I or MAS 624 Introduction to Communicative Algebra

**Elective Courses**

- MAS 602 Fourier Analysis
- MAS 604 Functional Analysis
- MAS 605 Elliptic Partial Differential Equations with Partial Derivatives of Second Order
- MAS 607 Function Theory of Several Complex Variables
- MAS 608 Evolution Differential Equations with Partial Derivatives of Second Order
- MAS 611 Harmonic Analysis
- MAS 612 Measure and Probability
- 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 622 Algebraic Coding Theory
- MAS 623 Number Theory
- MAS 624 Introduction to Commutative Algebra
- MAS 625 Theory of Groups
- MAS 626 Field and Galois Theory
- MAS 627 Group Representation Theory I
- MAS 628 Group Representation Theory II
- MAS 629 Topics in Algebra I
- MAS 630 Topics in Algebra II
- MAS 631 Differential Topology
- MAS 633 General Relativity
- MAS 634 Algebraic Topology I
- MAS 635 Lie groups and Lie Algebras
- MAS 636 Algebraic Topology II
- MAS 637 Spectral Geometry
- MAS 638 Spin Geometry
- MAS 639 Algebraic Geometry
- MAS 640 Topics in Geometry I
- MAS 641 Topics in Geometry II
- MAS 642 Topics in Geometry III
- MAS 643 Seminar in Pure Mathematics – Analysis I
- MAS 644 Seminar in Pure Mathematics – Analysis II
- MAS 645 Seminar in Pure Mathematics – Algebra I
- MAS 646 Seminar in Pure Mathematics – Algebra II
- MAS 647 Seminar in Pure Mathematics – Geometry I
- MAS 648 Seminar in Pure Mathematics – Geometry II
- MAS 682 Classical Mechanics

**Ph.D. IN MATHEMATICS – Pure Mathematics**

For the fulfillment of a Doctor of Philosophy Degree the requirements are:

1. **Successful completion of 120 ECTS** at the postgraduate level in accordance with the provisions of the programme of studies of the Department. Students with a Master degree are partially or fully exempted from this requirement.

2. **Comprehensive Examination (CE)**

The Comprehensive Examination comprises two sections:
A. Written Comprehensive Examination (WCE): the written examination consists of an exam essay divided in four parts.

B. Oral Comprehensive Examination (OCE): on two subjects designated by the Research Advisor of the student. The student is examined orally before a three-member committee appointed by the Postgraduate Studies Committee of the Department after recommendation by the Research Advisor.

If the candidate passes the written comprehensive exam, she/he is allowed to proceed to the oral comprehensive exam. Success in the WCE means completion of a minimum of 65 ECTS out of 100 units.

Students should successfully complete the CE no later than the fifth semester of their studies. If the student fails he is allowed to repeat each examination (WCE or/and OCE) once more. If she/he fails a second time in the exams (WCE or/and OCE) his/her studies in the doctoral programme are terminated.

3. Oral Exam
The requirements are the same as for the Ph.D. in Applied Mathematics (see relevant paragraph).

4. Doctoral Dissertation
See relevant paragraph.

5. Defence of the Doctoral Thesis
See relevant paragraph.

The Syllabus Content for the Written Comprehensive Examination (WCE)

PART ONE


PART TWO
Complex plane and stereographic projection. Mobius Transformations.
Cauchy-Riemann equations, harmonic functions.
Elementary analytic functions. Complex Integration and Cauchy integral Representation Theorem.
Maximum Principle, Schwarz Lemma, Argument Principle, Rouche Theorem.
Conformal mappings and Riemann Mapping Theorem.
Infinite series and infinite products. Theorems of Weierstrass and Mittag-Leffler for entire analytic functions.

PART THREE
Groups and homomorphisms. Free groups, generators and relations. Finitely generated abelian groups.

PART FOUR
Topological and differentiable manifolds, basic examples and properties. Fundamental group.

MASTER IN APPLIED STATISTICS

To obtain a Master degree in Applied Statistics successful completion of a minimum of 93 ECTS is required.

Indicative Programme of Studies

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<tr>
<th>Semester</th>
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<th>ECTS</th>
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<tr>
<td>1st Semester</td>
<td>MAS 650 Mathematical Statistics</td>
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<td>MAS 655 Survey Sampling</td>
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<tr>
<td></td>
<td>MAS 658 Statistical Packages</td>
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<td>MAS 850 Seminar in Applied Statistics I</td>
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<tr>
<td>2nd Semester</td>
<td>MAS 653 General Linear Models*</td>
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<td>MAS 659 Multivariate Analysis*</td>
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<td>MAS 851 Seminar in Applied Statistics II **</td>
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<td>3rd Semester</td>
<td>MAS 657 Statistical Analysis of Discrete Data*</td>
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Options

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<td>MAS 654 Nonparametric Statistics*</td>
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<td>MAS 656 Time Series Analysis*</td>
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<tr>
<td>MAS 660 Probability Theory</td>
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<tr>
<td>MAS 661 Topics in Statistics I</td>
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<tr>
<td>MAS 663 Topics in Statistics III</td>
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<tr>
<td>MAS 664 Bayesian Statistics*</td>
<td>10</td>
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<tr>
<td>MAS 665 Computational Statistics*</td>
<td>10</td>
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<tr>
<td>MAS 666 Biostatistics*</td>
<td>10</td>
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<tr>
<td>MAS 670 Theory of Statistics</td>
<td>10</td>
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Notes:
* In these courses, the use of statistical packages is an integral part
** A mandatory course. Students will attend colloquium lectures. A pass/fail course. Students must enroll in the course every semester.

Option III may be replaced by:
1. An independent study under the supervision of a member of the academic staff of the programme (MAS 667).
2. Practical training in the private or public sector (MAS 668).

Ph.D. IN STATISTICS

For the fulfillment of a Doctoral degree in Statistics, the following are required:

1. **Successful completion of 60 ECTS**
   at postgraduate level, in accordance with the provisions of the programme of studies of the Department. Students with a Master degree are partially or fully exempted from this requirement.

The 60 ECTS should be completed as follows:

- At least 10 ECTS in Probability Theory.
- At least 10 ECTS in Statistical Theory.
- The remaining 40 ECTS may be completed with any postgraduate courses offered by the Department, including reading courses.

A doctoral level student who fails a postgraduate course is allowed to attend the same course once more. If the course is compulsory, a second failure implies termination of the studies.

According to the regulations of the University of Cyprus, an undergraduate course in any Department may be included in the required courses of the Doctoral Programmes.

2. **Comprehensive Exam (CE)**

The Ph.D. candidate is examined on the areas of Probability Theory and Statistical Theory. If the candidate succeeds in both areas, she/he is considered to have the necessary knowledge to
proceed to the Ph.D. If the student fails only in one area, she/he is entitled to repeat the part of the examination on which she/he failed only one more time, in a later examination period. The examination in each area is prepared and assessed by members of the academic staff of the Department who specialize in this area. If the student fails a second time in the comprehensive exam his/her studies in the doctoral programme are terminated.

The student must successfully complete the CE at the latest by the fifth semester of his/her studies.

(3) Oral Exam
The requirements are the same as for the Ph.D. in Applied Mathematics.

(4) Doctoral Dissertation
The requirements are the same as for the Ph.D. in Applied Mathematics.

(5) Dissertation Defence
The requirements are the same as for the Ph.D. in Applied Mathematics.

The Syllabus Content for the Comprehensive Examination

PROBABILITY THEORY

Axiomatic Foundation
Measure theoretic probability, measure theory and integration, -algebras, monotone classes, events, probability spaces, stochastic independence, 0-1 laws, the Borel-Cantelli lemma.

Random Variables:
Random variables, distribution of a random variable, continuous and discrete random variables, distribution of a function of a random variable, random vectors.

Expectation
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 theorems, theorems of Lindeberg-Feller, 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 for martingales, central limit theorems.

STATISTICAL THEORY

Estimation Theory

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, rank tests.

Description of Courses

MAS 601 Measure and Integration

MAS 602 Fourier Analysis
MAS 603 Partial Differential Equations

MAS 604 Functional Analysis

MAS 605 Elliptic Partial Differential Equations of Second Order
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

MAS 607 Function Theory of Several Complex Variables
Basic facts about holomorphic functions of several complex variables. Integral representations of holomorphic functions of several complex variables.

MAS 608 Evolution Differential Equations with Partial Derivatives of Second Order

MAS 609 Stochastic Analysis
Review of the basic notions of probability theory, stochastic integration, Lto's lemma, stochastic differential equations, applications (financial mathematics, formula Black-Scholes, etc.).

MAS 610 Stochastic Processes
Basic motions of stochastic processes, Kolmogorov's theorem, discrete and continuous time Markov processes, point processes, Brownian motion, random walks.

MAS 611 Harmonic Analysis

MAS 612 Measure and Probability

MAS 613 Ordinary Equations

MAS 617 Topics in Mathematical Analysis I
MAS 618 Topics in Mathematical Analysis II
MAS 619 Topics in Mathematical Analysis III
Topics in real analysis, complex analysis or differential equations

MAS 621 Numerical Linear Algebra

MAS 622 Algebraic Coding Theory

MAS 623 Number Theory
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**

**MAS 626 Field and Galois Theory**

**MAS 627 Group Representation Theory I**

**MAS 628 Group Representation Theory II**

**MAS 629 Topics in Algebra I**
**MAS 630 Topics in Algebra II**
**MAS 631 Differential Topology**

**MAS 632 Riemannian Geometry**

**MAS 633 General Relativity**

**MAS 634 Algebraic Topology I**

**MAS 635 Lie Groups and Lie Algebras**

**MAS 636 Algebraic Topology II**

**MAS 637 Spectral Geometry**

**MAS 638 Spin Geometry**

**MAS 639 Algebraic Geometry**

**MAS 640 Topics in Geometry I**
**MAS 641 Topics in Geometry II**
Topics from Differential Geometry, Algebraic Geometry and Algebraic Topology.

**MAS 650 Mathematical Statistics**
MAS 653 General Linear Models
Linear and multiple regression, residuals and model selection procedures, diagnostics. Analysis of variance and non linear regression. Design of experiments, completely randomized designs, designs with two or more factors with interactions. Block designs, split plot and nested designs.

MAS 654 Nonparametric Statistics

MAS 655 Survey Sampling
Survey design, sampling and nonsampling errors, simple random sampling, stratified sampling, systematic sampling, cluster sampling, ratio estimators, regression estimators, determination of optimal sample size, bias in survey sampling, modern techniques of survey sampling.

MAS 656 Time Series Analysis

MAS 657 Statistical Analysis of Discrete Data

MAS 658 Statistical Software
Introduction to major statistical software, like SPSS and S-Plus. Syntax, commands, input output files. Descriptive statistics, explanatory data analysis, regression analysis and analysis of variance, statistical inference (testing hypotheses, goodness of fit tests).

MAS 659 Multivariate Analysis

MAS 660 Probability Theory
Mathematical foundation of probability, conditional probability, independence, random variables, distributions, expected value, moment generating functions, characteristic functions, modes of convergence of a sequence of random variables, laws of large numbers, central limit theorems.

MAS 661 Topics in Statistics I
MAS 662 Topics in Statistics II
MAS 663 Topics in Statistics III
Topics from probability theory, statistical theory and their applications, such as categorical time-series, non-parametric and semi-parametric statistics, U-statistics, Bootstrap methods, survival analysis, wavelets and their applications in statistics and time-series analysis, analysis of spatial data, analysis of functional data.

MAS 664 Bayesian Statistics
Subjective probability, Bayes rule, prior and posterior distributions, conjugate and non-informative priors, pointwise estimation and credible intervals, hypotheses testing, introduction to Bayesian decision analysis, introduction to empirical Bayes analysis, introduction to Markov chain Monte Carlo techniques.

MAS 665 Computational Statistics
MAS 666 Biostatistics

MAS 667 Statistical Project
This course requires the execution of a project about a specific statistical problem. The course gives students the opportunity to engage in applications of statistical methodology, to develop and cultivate their research ability, to broaden their knowledge of statistical methodology and to become familiar with various scientific areas where the statistical methodology is applied. This aim is achieved either through the research projects of the faculty members or through projects undertaken by the department for collection and analysis of data. Moreover, the students and particularly those wishing to enter the doctoral program, have the opportunity to familiarize themselves with the research interests of their academic advisor and possibly publish original results.

MAS 668 Practical Training
The student is placed with an organization in the private or public sector in order to acquire experience in topics that are closely related to his/her graduate program of studies. At the end of the training period, the student’s performance is evaluated based on a written report by the management of the host organization.

MAS 671 Numerical Solution of Ordinary Differential Equations

MAS 672 Numerical Solution of Partial Differential Equations

MAS 677 Topics in Numerical Analysis I
MAS 678 Topics in Numerical Analysis II
MAS 679 Topics in Numerical Analysis III
Topics in Computational Mathematics and Approximation Theory.

MAS 682 Classical Mechanics

MAS 683 Fluid Dynamics

MAS 684 Topics in Applied Mathematics I
MAS 685 Topics in Applied Mathematics II
MAS 686 Topics in Applied Mathematics III
Topics from different areas of Applied Mathematics.

MAS 687 Topics in Differential Equations I
MAS 688 Topics in Differential Equations II
MAS 689 Topics in Differential Equations III
Topics from Ordinary Differential Equations and Partial Differential Equations.

Research Interests of Academic Staff
- Georgios Alexopoulos
  Professor
  Random Walks and Harmonic Analysis.
- Tasos Christofides
  Professor
- Pantelis Damianou
  Professor
- Konstantinos Fokianos
  Associate Professor
• **Georgios Georgiou**  
  Professor  

• **Andreas Karageorghis**  
  Professor  

• **Alexandros Karagrigoriou**  
  Associate Professor  
  Statistical Modelling, Model Selection Criteria, Time Series, Bio-Statistics.

• **Stamatis Koumandos**  
  Associate Professor  
  Harmonic analysis, Orthogonal polynomials, Special functions, Approximation Theory.

• **George Kyriazis**  
  Associate Professor  
  Approximation Theory, Harmonic Analysis.

• **Christos Pallikaros**  
  Associate Professor  
  Group Representation Theory, Representations of Hecke Algebras.

• **Efstatios Paparoditis**  
  Professor  
  Time Series Analysis, Bootstrap Methods, Multivariate Analysis, Non-parametric Statistics.

• **Evangelia Samiou**  
  Assistant Professor  
  Riemannian Geometry.

• **Theofanis Sapatinas**  
  Associate Professor  

• **Yiorgos-Socratis Smyrlis**  
  Associate Professor  
  Partial Differential Equations, Numerical Analysis, Fluid Dynamics.

• **Christodoulos Sophocleous**  
  Associate Professor  
  Mathematical Physics, Non-Linear Optics and Non-Linear Partial Differential Equations.

• **Nikos Stylianopoulos**  
  Associate Professor  
  Numerical Analysis (Numerical Linear Algebra, Numerical Solution of P.D. E’s) and Computational Complex Analysis (Conformal Mapping, Approximation in the Complex Plane, Orthogonal Polynomials).

• **Alekos Vidras**  
  Associate Professor  
  Complex Analysis (Multidimensional Residues, Mean Periodicity).

• **Filia Vonta**  
  Assistant Professor  
  Survival Analysis, Semiparametric Statistics.

• **Christos Xenophontos**  
  Assistant Professor  

**Contact Person**  
Department Secretary  
Tel.: 22892600  
Fax: 22892601
The Objective

The objective of the postgraduate programme in Physics is to promote research and knowledge in the areas of physics. The Department offers postgraduate programmes leading to M.Sc. and Ph.D. degrees in Pure and Applied Sciences.

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 Programme

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 credit units (ECTS). Fifty of these credit units correspond to five mandatory core courses, whereas 10 ECTS correspond to an optional 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.

The postgraduate students in the Doctoral Programme should pass the five (5) obligatory core courses and one (1) specialization course. After the successful completion of these six (6) postgraduate courses, the candidate must pass a qualifying exam. The candidate should also supplement at least 40 ECTS in courses in addition to the five (5) core courses. These courses should comprise specialization courses relevant to his field, as well as at least one course outside his area of specialization. The possession of an M.Sc. degree partially or completely exempts the student from the required completion of the above 90 ECTS. The final requirement for the Doctorate degree is the submission of an original thesis. After the completion of the thesis, the student will defend his/her work before a committee of five members.

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 organization 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
- Solid State Theoretical and Experimental Physics
- Theoretical Biophysics
Table of Courses

CORE COURSES FOR MASTER AND PH.D.
PHY 625 Quantum Mechanics I 10 ECTS
PHY 626 Quantum Mechanics II 10 ECTS
PHY 631 Electromagnetism 10 ECTS
PHY 641 Statistical Physics 10 ECTS
PHY 811 Experimental Physics 10 ECTS

MASTER
Specialization Course 10 ECTS
PHY 860 Master Thesis I 10 ECTS
PHY 861 Master Thesis II 20 ECTS
PHY 862 Master Thesis III 30 ECTS

PH.D.
Three Specialization Courses 30 ECTS
One Course outside the area of specialization 10 ECTS
PHY 870 Research Stage ι 30 ECTS
PHY 871 Research Stage ιι 30 ECTS
PHY 872 Research Stage ιιι 30 ECTS
PHY 873 Research Stage IV 30 ECTS
PHY 880 Writing Stage ι 15 ECTS
PHY 881 Writing Stage ιι 15 ECTS

Description of Core Courses

PHY 625 Quantum Mechanics I

PHY 626 Quantum Mechanics II
Potential Scattering: Asymptotic states, scattering amplitude, the integral equation of potential scattering, Born series, cross-sections, the Optical Theorem, partial waves, low energy resonances, analytic properties of the scattering amplitude.
Perturbation Theory: Stationary state perturbation theory, degenerate perturbation theory, time-dependent perturbation theory, first-order transitions, harmonic perturbations, second-order transitions.
Interaction of Radiation with Matter: Interaction Hamiltonian, absorption of light, spontaneous emission, the quantized radiation field, scattering of light, Raman scattering, the quantum vacuum.
Theory of Spin ½: Rotations in spin space, spin magnetic moment, spin resonance, the Pauli equation, relativistic theory, Lorentz transformation of spin, Dirac equation, Dirac hydrogen atom, hyperfine structure, the Lamb shift.
Path Integrals in Quantum Mechanics: The classical action, the quantum-mechanical amplitude, the sum over paths, the free particle propagator, particle in a magnetic field, action function of the classical electromagnetic field, the energy and momentum tensor, evaluation of path integrals, perturbation theory and path integrals, introduction to quantum electrodynamics.
Atoms - Molecules: Two-electron atoms, Hartree, Fermi-Thomas and Hartree-Fock approximations, spin-orbit interaction, Zeeman effect, the Born-Oppenheimer method, the hydrogen molecule.

PHY 634 Electromagnetism
Charges in fields, four-potential of a field, Lorentz force, electric and magnetic fields, gauge invariance, the electromagnetic field tensor, Lorentz transformation of the field, invariants of the field, the action of the electromagnetic field, the four-dimensional current vector, Maxwell equations, energy density and Poynting vector, constant fields, electrostatics and magnetostatics, electrostatic energy, dipole moments, magnetic moments, electromagnetic waves, characteristic vibrations of the field, Optics, diffraction, geometrical optics, the field of
moving charges, the Lienard-Wiechert potentials, electromagnetic radiation, dipole radiation, radiation from a rapidly moving charge, spectral resolution of the radiation, scattering by free charges, electromagnetic field in continuous media.

PHY 641 Statistical Physics
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
Part 1: Experiments and Techniques in Nuclear Physics
Introduction to least squares method, elements of nuclear electronics and interaction of charged particles with matter (the TRIM code).
High-Resolution Spectroscopy of α-Particles using a surface barrier silicon (Si) detector.
High-Resolution γ-Spectroscopy using an intrinsic high-purity Ge(i) detector.

Part 2: Particle Physics Experiments
Study of Cosmic Rays
The purpose of the graduate particle physics experiment is to study the soft component of cosmic radiation at sea level, which is mainly composed of muons. The study proceeds through the measurement of the cosmic ray flux and the muon decay and capture rates in a heavy material (lead). Students will familiarise themselves with some of the methodology and techniques widely used today in particle physics research (detectors, electronics for signal extraction, data acquisition and processing and presentation of the results).

Part 3: Experiments in Optoelectronics
Introduction: Introduction to optoelectronics - A brief introduction to optoelectronics. Laser systems – Introduction to various laser systems with emphasis on the ultrafast laser systems. Introduction to fundamental experimental setups in optoelectronics.
Time resolved studies using pulsed lasers: Pulsed lasers with nanosecond resolution, techniques of time resolved analysis, data acquisition system (LabView).
Ultrafast lasers: Self mode-locked lasers, the use of non-linear optical technique to measure pulselength from ultrashort lasers, pump-probe techniques.
Fiber optics and Fiber Bragg gratings: Fiber optics (introduction), photosensitivity in optical fibers, fabrication of fiber Bragg gratings, applications of fiber Bragg gratings.

Part 4: Photothermal and Photoacoustic Sciences and Experimental Techniques

Description of Specialization Courses
PHY 650 Quantum Field Theory I
Comparison of Fermi’s weak Hamiltonian to the standard model.

**PHY 651 Ultrashort Laser Pulse Phenomena**
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**
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**

**PHY 654 Ultrafast Spectroscopy of Semiconductors and Semiconductor Nanostructures**

**PHY 655 Lattice Gauge Theories**

**PHY 656 Modern Topics in Theoretical Condensed Matter Physics**
Unitary Transformations in Condensed Matter Physics
- Bose systems: Bogolyubov transformations
- Fermi systems: Cooper pairs and BCS theory of Superconductivity
- Composite particles: Bose-Einstein condensation of Excitons.

Electrons in a Magnetic Field
- Integer and Fractional Quantum Hall Effect
- Two-dimensional electron-hole systems and their hidden symmetries
- Wigner crystal and competitive phases.

**PHY 657 Quantum Many-Body Theory and Applications in Solid State Physics**
- 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**
- 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**
- 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**
- Wigner Crystal in 3- and 2- Dimensional Condensed Matter
- Competition with Laughlin Liquid and other Quantum Hall Effect States
- Paired Electronic States and the Passage to Exotic Superconductivity
- Bubble and Stripe Phases in Higher Landau Levels: Recent Experimental Discoveries.

**PHY 661 Advanced Topics in Particle Physics**
- 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**
- 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**
- 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**

**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.

**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.

**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**

**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.

**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.

**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.

**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**

- Symmetries: Definition, Physical 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, Crystallographic 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.
- Roots and Weights: Dynkin diagrams, Classification of the 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 Supersymmetric Standard Model and to Supergravity.
Research Interests of the Academic Staff

- **Constantia Alexandrou**  
  Professor  

- **George Archontis**  
  Assistant Professor  

- **Constantinos Christofides**  
  Professor  

- **Konstantinos Moulopoulos**  
  Associate Professor  
  Theoretical Physics of Condensed Matter (Superconductivity, Metal-Insulator Transitions).

- **Andreas Othonos**  
  Associate Professor  

- **Haralambos Panagopoulos**  
  Professor  
  Quantum Field Theory, Theoretical Particle Physics, Physics of Strong Interactions, Computational Physics.

- **Photis Ptohos**  
  Assistant 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  
  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 superconductors, phenomenology of superfluid helium). Nonlinear Physics.

- **Nicolaos Toumbas**  
  Lecturer  
  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.

- **Haralabos Tsertos**  
  Professor  

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Postgraduate Programmes

The Education Department currently offers six postgraduate programmes leading to Master and Doctoral degrees in the following areas:

1. Educational Administration (Master and Doctoral)
2. Curriculum and Instruction (Master and Doctoral)
3. Pedagogical Sciences (Master)
4. Mathematics Education (Master and Doctoral)
5. Learning in Natural Sciences (Master and Doctoral)
6. Didactics and Methodology of Mathematics (Master)

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.

In accordance with University regulations on postgraduate studies, the programmes are supervised by the Coordinator of Postgraduate Programmes (CPP) of the Department who is appointed by the Chairperson of the Department. The Coordinator chairs a three-member committee, the members of which are also appointed by the Chairperson.

The operation of the Master and Doctoral programmes is based on internal departmental regulations, which are provided in Appendix I of the Department of Education.

Listed below are the objectives of each programme, the conditions for entry, the number of students accepted and additional relevant information.

The postgraduate programmes are based on the ECTS system (European Credit Transfer and Accumulation System). The programmes require 90 ECTS for their completion. Students may choose one of the following options:

**Option A (completion of 9 courses)**
9 courses X 9 ECTS (81 ECTS) and 3 seminars X 3 ECTS (9 ECTS) = 90 ECTS

**Option B (completion of 7 courses, 3 seminars and dissertation)**
7 courses X 9 ECTS (63 ECTS), 3 seminars X 3 ECTS (9 ECTS) and dissertation (18 ECTS) = 90 ECTS

**Seminars**
The 3 seminars include lectures which will focus on a specific topic of the discipline.

**Application for Admission**
The required documents are:

- Completed Application form
- Curriculum Vitae (CV)
- Official copies of university degrees from accredited institutions of higher education
- Official copies of transcripts
- Brief essay on personal goals and research interests (about 2-3 pages)
- Certificates and/or other documentation that prove English language competency
- Name and addresses of three (3) university professors from whom the candidates will need to request formal letters of recommendation to be sent directly to the Coordinator of Postgraduate Studies of the Department of Education. The Department may request additional confidential information.
- Any other documentation which the candidate deems necessary to strengthen and further support his/her application for admission, such as articles, research reports, academic distinctions, and any other relevant information.

The criteria for selection of candidates include the following:

- First degree (undergraduate) grades
- Other undergraduate or graduate degrees
- Recommendation letters
- Success in a personal interview or another examination
EDUCATIONAL ADMINISTRATION

The Graduate programme in Educational Administration has as its basic mission the following: (1) to undertake research in the areas of organization, administration and evaluation in education, (2) to prepare leadership personnel and researchers who understand the context within which educational organizations operate in a productive and creative way, and (3) to offer services to the wider educational community in the areas of administration, management, leadership, evaluation and school effectiveness. The programme further aspires to create a landscape where all the various disciplines within the cognitive area of educational administration can flourish, such as personnel evaluation in education, school effectiveness, organizational behaviour, programme evaluation, economics of education and productivity and total quality management.

Based on the above, the primary objective of the Postgraduate Programme in Educational Administration is to create the foundations for more effective organization and administration of schools. Most courses are directly related to the duties and responsibilities of both administrative personnel of the schools (elementary and secondary) and administrators at the Ministry of Education and Culture. At the same time, some of the courses introduce new ideas and current trends in the areas covered by the Programme. It is up to the students to acquire knowledge, new attitudes and research capabilities that will assist them in exercising a dynamic role as educational leaders and researchers of international reputation.

All of the above are applied through a series of courses, seminars and other academic activities that revolve around the Postgraduate Programme in Educational Administration.

Structure of the Master Programme

The programme consists of 90 ECTS which are distributed as follows:

Option A
63 ECTS in specialization courses, 9 ECTS of common core courses, 9 ECTS from the free elective courses and 9 ECTS of 3 seminars = TOTAL 90 ECTS

Option B
54 ECTS in specialization courses, 9 ECTS of common core courses, 18 ECTS for the master thesis and 9 ECTS of 3 seminars = TOTAL 90 ECTS

OPTION A
9 courses X 9 ECTS and 3 seminars X 9 ECTS = TOTAL 90 ECTS

Specialization Courses 63
Required courses 27
EDU 620 Introduction to educational administration* (C, B) 9
EDU 623 Observation and evaluation of teaching and personnel (C, B) 9
EDU 645 Educational policy (S, A) 9
Elective courses 36
(Four courses from the following)
EDU 603 Comparative education (S, I) 9
EDU 610 Evaluation of educational programmes (S, A) 9
EDU 621 Human resource development (S, A) 9
EDU 622 Organization and administration of schools (S, A) 9
EDU 624 Planning and decision making in education (S, A) 9
EDU 625 Applications of new technology in educational administration (S, A) 9
EDU 627 Introduction to innovations in education (S, A) 9
EDU 628 Education and multicultural society (S, A) 9
EDU 629 Instructional leadership (S, A) 9
EDU 630 Financial aspects of education (S, A) 9
EDU 631 School effectiveness and school improvement (S, A) 9
EDU 632 Strategic planning and quality in education (S, A) 9
EDU 634 Principles of organization of in-service programmes (S, A) 9
EDU 635 Organizational behaviour and leadership (S, A) 9
EDU 636 Practicum in educational administration (S, A) 9
EDU 642 Basic principles of measurement and evaluation in education (S, A) 9
EDU 648 Professional Development, Promotion and Compensation of Personnel in Education (S, A) 9
EDU 649 Educational leadership in Europe (S, A) 9
EDU 689E Independent study (S, S) 9
EDU 690 Seminar: Specialized topics/Current trends (S, S) 9
EDU 695 Evaluation of schools' performance (S, S) 9
EDU 696 Models of educational effectiveness (S, S) 9
EDU 697 Designing comprehensive studies for evaluating school effectiveness (S, S) 9

**Free Elective Courses**
One postgraduate course from any programme or department with the permission of the student’s postgraduate advisor 9

**Seminars**
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3

**TOTAL ECTS** 90

*EDU 620 is prerequisite for all courses in Educational Leadership.*

C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level

**OPTION B**
7 courses X 9 ECTS (63 ECTS), 3 seminars X 3 ECTS and Master Thesis (18 ECTS) = TOTAL 90 ECTS

**Specialization Courses** 54

**Required Courses** 27
EDU 620 Introduction to educational administration* (C, B) 9
EDU 623 Observation and evaluation of teaching and personnel (C, B) 9
EDU 645 Educational policy (S, A) 9

**Elective courses** 27
(Three courses from the following)
EDU 603 Comparative education (S, I) 9
EDU 610 Evaluation of educational programmes (S, A) 9
EDU 621 Human resource development (S, A) 9
EDU 622 Organization and administration of schools (S, A) 9
EDU 624 Planning and decision making in education (S, A) 9
EDU 625 Applications of new technology in educational administration (S, A) 9
EDU 627 Introduction to innovations in education (S, A) 9
EDU 628 Education and multicultural society (S, A) 9
EDU 629 Instructional Leadership (S, A) 9
EDU 630 Financial aspects of education (S, A) 9
EDU 631 School effectiveness and school improvement (S, A) 9
EDU 632 Strategic planning and quality in education (S, A) 9
EDU 634 Principles of organization of in-service programmes (S, A) 9
EDU 635 Organizational behaviour and leadership (S, A) 9
EDU 636 Practicum in educational administration (S, A) 9
EDU 642 Basic principles of measurement and evaluation in education (S, A) 9
EDU 648 Professional development, promotion and compensation of personnel in education (S, A) 9
EDU 649 Educational leadership in Europe (S, A) 9
EDU 680 Independent study (S, S) 9
EDU 690 Seminar: Specialized topics/Current trends (S, S) 9
EDU 695 Evaluation of schools’ performance (S, S) 9
EDU 696 Models of educational effectiveness (S, S) 9
EDU 697 Designing comprehensive studies for evaluating school effectiveness (S, S) 9

Dissertation 18
EDU 798D Master Thesis II (S, S)
EDU 799D Master Thesis III (S, S)

Common Core Courses

Research 9
(One of the following)
EDU 681 Advanced research methods (S, A) 9
EDU 682 Qualitative research in education (S, A) 9
EDU 683 Educational statistics with statistical packages applications (S, A) 9
EDU 780 Using basic and advanced multilevel modelling in educational research 9
EDU 788 Advanced research methods 9

TOTAL ECTS 90

Seminars 9
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3

* EDU 620 is prerequisite for all courses in Educational Leadership

C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level

Structure of the Ph.D. Programme

The following are required for the completion of the doctoral programme:

- Master degree in the same or similar subject.
- Success in courses totalling 45 credit hours (ECTS).
- Success in a comprehensive qualifying examination.
- Completion of a doctoral dissertation.

The 45 credit hours (ECTS) are fulfilled with courses required for the Master degree, with the recommendation of the Postgraduate Programme Coordinator of the department.

Note: In cases where the candidate holds a Master degree in a similar subject or a Master degree which is awarded by a recognised university, the Council of the Department can credit some or all the courses required for the Master degree, with the recommendation of the Academic Advisor responsible for the postgraduate studies of the programme.
Comprehensive Examination of Doctoral Candidates

The main goal of the Comprehensive Qualifying Examination 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 Comprehensive examination 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. There is no grade in this examination as it is on a pass/fail basis. Should the candidate fail to pass a second time, the student’s dismissal is discussed at the Council of the Department.

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
   - 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

Description of Courses

EDU 603 Comparative Education (9 ECTS)
Definition and object of comparative education. Presentation of the Cypriot and the Greek educational systems. Description of European models of organization for education (such as the British, the German, and the French systems). Analysis of the American Educational System. Comparisons, similarities, differences, advantages, disadvantages, conclusions.

EDU 610 Evaluation of Educational Programmes (9 ECTS)
The evaluation of educational programmes as an institution and as a process. Analysis of several evaluation models (Stufflebeam, Popham, Borich, Provus, Scriven, etc.), with reference to specific programmes at the macro-level (educational system) and the micro-level (school unit). Types of evaluation (continuous, developmental, formative, summative). Description of approaches and study of the instruments used in evaluation at both the theoretical and the applied levels, in the context of accountability of educational systems and educational institutions.

EDU 620 Introduction to Educational Administration (9 ECTS)
General introduction to concepts and theories necessary for the study of organizations. Topics included are: leadership, decision-making, organizational climate, communication, effectiveness and the management of change. The nature of organizational life and organizational behaviour are explored. The school as a social system is examined as well as the external and internal factors which affect the schools and the educational system in general.

EDU 621 Human Resource Development (9 ECTS)
The human factor and its importance for an organization. Ways and means for motivation of human resources.
Inservice and employee development through job design. Human behaviour in groups. Communications, group dynamics, group effectiveness and group formation.

**EDU 622 Organization and Administration of Schools (9 ECTS)**
Analysis of basic duties and responsibilities of school principals. Description of methods for planning and decision-making at the school level. Effective schools research and the involvement of school principals in the formation of an effective school. Educational laws for the organization and administration of schools.

**EDU 623 Observation and Evaluation of Teaching and Personnel (9 ECTS)**
Presentation and analysis of the logic of observing, analyzing and evaluating teaching and school personnel. Specific instruments, models, and methods for the observation and evaluation of teaching will be presented. Focused observation instruments will also be presented for specific areas of observation (such as school climate, teaching process, teaching methods and styles, academic progress of students).

**EDU 624 Planning and Decision Making in Education (9 ECTS)**
Basic functions of an educational leader: planning and decision-making. Educational planning at the macro and micro level. Basic techniques and process of planning. The preparation of one-, two- and three-year plans for the individual school. Decision-making models and processes, simulations in decision-making, impact of decisions on the organization.

**EDU 625 Applications of New Technology in Educational Administration (9 ECTS)**
Educational technology products which support the work of an educational leader. Technology products which are now available or are up and coming for the near future. Special reference will be made to computers and software available as well as methods for the evaluation of software.

**EDU 627 Introduction to Innovations in Education (9 ECTS)**
Analysis of the concept of educational change and the introduction of innovations in education. The study of the individual school as the main vehicle for the introduction of change and innovations. Theories of organizational change and resistance to change in educational organizations.

**EDU 628 Education and Multicultural Society (9 ECTS)**
Critical examination of current social issues and their relation to teaching. Race and ethnic relations, socio-economic groups, special interest groups, and advocacy. Conflict resolution among the various stakeholders in education.

**EDU 629 Instructional Leadership (9 ECTS)**
Theoretical perspectives on Instructional Leadership. The role of the school principal and other educational leaders in establishing and sustaining a culture of teaching and learning. The school as a learning community.

**EDU 630 Financial Aspects of Education (9 ECTS)**
Examination of ways to implement public financial management with regard to education. Taxes and taxation in education. Direct and indirect taxation in educational issues. Presentation of specific budgeting models such as PPBS, MBO, Zero-base budgeting, incremental budgeting.

**EDU 631 School Effectiveness and School Improvement (9 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, organisational, 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 632 Strategic Planning and Quality in Education (9 ECTS)**
Quality and accountability issues in education and their relationship to strategic planning. Why planning is important and the relation between planning and TQM in education.
EDU 634 Principles of Organization of In-Service Programmes (9 ECTS)
The concept of total quality in the development of in-service programmes. The goal-setting and experiential process of the development of in-service programmes. Research around action and reflective thinking. Mentors and student teaching. Systems for the support of in-service personnel.

EDU 635 Organizational Behaviour and Leadership (9 ECTS)
Organizational behaviour and motivation theories. Leadership, trait-theory and social making approaches. Goals and work relations within groups. Evaluation of effectiveness and rewards. Communication, creation of good working relationships within the organization. Organizational climate and its importance. General survey of main theories in educational leadership such as: Trait, situational approaches with emphasis on the Hersey and Blanchard Life Cycle Theory, Blake and Muton, Terry's Diamond, Transformational leadership, Fiedler, Tichy, Devanna. Examination of variables involved in situation approaches to leadership.

EDU 636 Practicum in Educational Administration (9 ECTS)
Observation of administrative personnel in educational institutions either on a part-time or full-time basis. Shadowing with special emphasis on organizational and administrative functions under real conditions.

EDU 642 Fundamentals of Measurement and Assessment in Education (9 ECTS)
Forms of validity and reliability; Methods for measuring construct validity; Classical Test Theory; Item Response Theory Models: One-parameter logistic model, Two-parameter logistic model, Three-parameter logistic model, Nominal response IRT model, Graded response IRT model; Ability and Item Parameter Estimation; Assessment of Model Data Fit; Methods for Identifying Biased Test Items: Item Bias Indices based on Classical Test Theory, IRT Methods for Detecting Differential Item Functioning; Test Score Equating; Computer-Based Adaptive Testing.

EDU 645 Educational Policy (9 ECTS)
A study of the concept of educational policy and the knowledge base for decision making in this area. Examination of the factors influencing policy decisions at the macro and micro level. Discussion of important topics associated with policy decisions in the international scene, such as: school success and failure, access to education, school effectiveness, vocational education, and marketization. Investigation of contemporary educational policy issues in Cyprus.

EDU 648 Professional Development, Promotion and Compensation of Personnel in Education (9 ECTS)

EDU 649 Educational Leadership in Europe (9 ECTS)
This course is for those who are in, or aspire to be in, leadership posts in pre-school, primary, secondary or tertiary educational organisations in Europe or for those from outside Europe who wish to gain an understanding of European approaches to the management and leadership of educational organisations. It will be of value to those who teach and lead in schools or colleges and to those who govern such organisations at the local, regional, national or international level or who work in non-governmental educational organisations. This is a self-study course. Each of its aspects offers information, discussion and activities to enable students to participate in a productive way. These aim to guide students through the principal learning points and to reinforce what students gain from the reading.

EDU 681 Advanced Research Methods (9 ECTS)

EDU 682 Qualitative Research in Education (9 ECTS)
This course begins with an examination of the differences in philosophy between the quantitative and qualitative approach which reveals the basis upon which the methods of doing qualitative research are built. Various theoretical traditions and orientations within qualitative research such as ethnography, phenomenology, ethnomethodology and symbolic interactionism are examined. Issues concerning research design in qualitative research are discussed and the "emergent research design" model is presented. The logic and power of purposeful sampling is
also discussed and various strategies for selecting information-rich cases are presented. The next component of the course is focused upon the major methods of data collection used in qualitative research: observation, in-depth interviewing, and documentary analysis. Then, several techniques for analysing qualitative data are examined, and special emphasis is given to the "constant comparative method". Moreover, computer programmes that could be used for analysing qualitative data are presented and special emphasis is given to the use of NUDIST. Finally, techniques for enhancing the quality and credibility of qualitative analysis are examined and ways for communicating the outcomes of qualitative research are presented.

EDU 683 Educational Statistics with Statistical Packages Applications (SPSS) (9 ECTS)
The course focuses on two main units: The first unit includes fundamental research concepts such as the basic terms used in statistics and research, the stages in conducting a research project (investigation of the problem, research process, data analysis and conclusions), the types of research (experimentation, correlation research, descriptive research and historical analysis) and the five chapters of a research report (the problem definition, literature review, methodology, results, conclusions).
The second unit includes commands from the SPSS package for the preparation of statistical data for analysis such as recode, compute, select if, get file, import file and statistical techniques for the analysis of data. Specifically, concepts relevant to descriptive statistics and deductive statistics are covered. With regard to descriptive statistics, the following are discussed: t-test, correlation, ANOVA, ANCOVA, multiple comparison procedures, regression analysis, partial correlation, factor analysis, cluster analysis, quick cluster, multidimensional scaling and discriminant analysis.

EDU 689 Independent Study (9 ECTS)
A student chooses a topic of great personal interest and prepares an extensive paper under the supervision of an academic staff member who specializes in the student's area.

EDU 690 Seminar: Specialized Topics/Current Trends (9 ECTS)
In this seminar, there will be presentations of current issues and trends in the broad area of Educational Leadership and Curriculum Development.

EDU 695 Evaluation of Schools’ Performance
External and internal forms of school evaluation; Political dimensions of school evaluation; School self-evaluation and school improvement; Value assumptions of School Self-evaluation; Methodology and Procedural dilemmas of school self-evaluation; Research into school self-evaluation; Integrating school self-evaluation with external forms of evaluation.

EDU 696 Models of Educational Effectiveness
Different approaches to educational effectiveness modelling; Education Production Function Models; The educational psychological approach to educational effectiveness modelling: Carroll’s and Walberg’s model; The Integrated Multilevel Educational Effectiveness models: Scheerens’ model, QUAIT/MACRO model, the comprehensive model of educational effectiveness; Research on models of educational effectiveness: Main findings and methodological issues; The importance of establishing dynamic models of effectiveness; Using models of effectiveness for school improvement purposes.

EDU 697 Designing Comprehensive Studies for Evaluating School Effectiveness
The significance of establishing mechanisms for measuring educational effectiveness; Designs of educational effectiveness studies based on Mixed Research Methods; Multi-level approaches in designing educational effectiveness studies; Possibilities of developing comprehensive models of teacher and school effectiveness; Methodological issues associated with the validation of comprehensive models of teacher and school effectiveness through systematic longitudinal studies.

EDU 780 Using Basic and Advanced Multilevel Modelling in Educational Research (9 ECTS)
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 788 Advanced Research Methods
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 Multitrait-Multimethod 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), Multiple Group IRT theory.

Programme Coordinator
Maria Eliophotou - Menon
Assistant Professor
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CURRICULUM AND INSTRUCTION

The objectives of the postgraduate programme in Curriculum Development and Instruction are the following:

1. Research in curriculum planning, curriculum development and curriculum evaluation, instructional analysis and evaluation, teacher education, development and evaluation.

2. Promotion and development of curriculum and teaching theories, as well as the philosophical, sociological and epistemological principles and discourse on curriculum studies.

3. Promotion and development of the collaboration with European programmes, universities and research centres all over the world on curriculum studies.

4. Upgrading of studies, knowledge and research on curriculum issues, teaching and learning, and teacher development.

5. Empowerment and cultivation of leadership in the areas of curriculum development and evaluation, curriculum and instructional discourse, and teacher development and evaluation.

6. Educational leadership services in Cyprus, the European Union as well as in the broader international scientific and educational society.

In the context of the above objectives students have the opportunity to develop their own individual programme of studies on the basis of their particular needs and interests.

Number of Students Admitted
At every year, the number of places is announced by the University Senate.

Structure of the Master Programme
The programme consists of 90 ECTS which are distributed as follows:
Option A
63 ECTS in specialization courses, 9 ECTS of common core courses, 9 ECTS from the free elective courses and 9 ECTS of 3 seminars.

Option B
54 ECTS in specialization courses, 9 ECTS of common core courses, 18 ECTS for dissertation and 9 ECTS of 3 seminars.

OPTION A
9 courses X 9 ECTS and 3 seminars X 3 ECTS = TOTAL 90 ECTS

Specialization Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU 612</td>
<td>Models of curriculum evaluation (C, B)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 640</td>
<td>Basic principles and processes of curriculum development* (C, B)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 693</td>
<td>Advanced methods of teaching and learning (C, B)</td>
<td>9</td>
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</tbody>
</table>

Elective Courses

(4 courses from the following)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
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</thead>
<tbody>
<tr>
<td>EDU 598</td>
<td>Postcolonial theory and the curriculum</td>
<td>9</td>
</tr>
<tr>
<td>EDU 599</td>
<td>Gender theories and the politics of the curriculum</td>
<td>9</td>
</tr>
<tr>
<td>EDU 603</td>
<td>Comparative education (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 604</td>
<td>Curriculum leadership (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 605</td>
<td>Postmodernity and education: Theory and praxis (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 606</td>
<td>Educational policy and curriculum development (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 607</td>
<td>The social discourse on curriculum development (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 608</td>
<td>Critical discourses on teacher development (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 609</td>
<td>Curriculum in a multicultural society (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 611</td>
<td>Curriculum theory (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 613</td>
<td>Specialised topics and contemporary trends (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 614</td>
<td>Informal curriculum and mass media (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 623</td>
<td>Observation and evaluation of teaching and personnel (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 626</td>
<td>Programme and school evaluation (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 627</td>
<td>Introduction to innovations in education (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 631</td>
<td>School effectiveness and school improvement (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 633</td>
<td>European dimension of education (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 634</td>
<td>Principles of organization of in-service programmes (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 642</td>
<td>Basic principles of measurement evaluation in education (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 643</td>
<td>Application of new technology in curriculum development (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 644</td>
<td>Development and evaluation of educational texts and materials (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 654</td>
<td>History of education (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 689A</td>
<td>Independent study (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 691</td>
<td>Seminar in curriculum development (S, S)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 699</td>
<td>Conflict and collaboration – critical analysis (S, S)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 780</td>
<td>Classroom discourse analysis and quality of teaching (S, A)</td>
<td>9</td>
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</tbody>
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Common Core Course

Research

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU 681</td>
<td>Advanced research methods (S, S)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 682</td>
<td>Qualitative research in education (S, S)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 683</td>
<td>Educational statistics with statistical packages applications (S, S)</td>
<td>9</td>
</tr>
</tbody>
</table>

Free Elective Courses

(With the permission of the student’s postgraduate advisor)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU 601</td>
<td>Philosophical aspects of education (S, I)</td>
<td>9</td>
</tr>
</tbody>
</table>
EDU 618 Sociological aspects of education (S, I) 9
PSY 610 Psychological aspects of education (S, I) 9
One or more postgraduate courses from the University of Cyprus with the permission of the student’s postgraduate advisor.

Seminars 9
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3
TOTAL ECTS 90

* The course EDU 640 is prerequisite for all Courses in Educational Curriculum Development

ECTS
Specialization Courses 54
Required courses 27
EDU 612 Models of curriculum evaluation (C, B) 9
EDU 640 Basic principles and processes of curriculum development* (C, B) 9
EDU 693 Advanced methods of teaching and learning (C, B) 9
Elective Courses 27
(three courses from the following)
EDU 598 Postcolonial theory and the curriculum 9
EDU 599 Gender theories and the politics of the curriculum 9
EDU 603 Comparative education (S, A) 9
EDU 604 Curriculum leadership (S, A) 9
EDU 605 Postmodernity and education: Theory and praxis (S, A) 9
EDU 606 Educational policy and curriculum development (S, A) 9
EDU 607 The social discourse on curriculum development (S, A) 9
EDU 608 Critical discourses on teacher development (S, A) 9
EDU 609 Curriculum in a multicultural society (S, A) 9
EDU 611 Curriculum theory (S, A) 9
EDU 613 Specialised topics and contemporary trends (S, A) 9
EDU 614 Informal curriculum and mass media (S, A) 9
EDU 623 Observation and evaluation of teaching and personnel (S, A) 9
EDU 626 Programme and school evaluation (S, A) 9
EDU 627 Introduction to innovations in education (S, A) 9
EDU 631 School effectiveness and school improvement (S, A) 9
EDU 633 European dimension of education (S, A) 9
EDU 634 Principles of organization of in-service programmes (S, A) 9
EDU 642 Basic principles of measurement evaluation in education (S, A) 9
EDU 643 Application of new technology in curriculum development (S, A) 9
EDU 644 Development and evaluation of educational texts and materials (S, A) 9
EDU 654 History of education (S, A) 9
EDU 691 Seminar in curriculum development (S, A) 9
EDU 699 Conflict and collaboration – critical analysis (S, S) 9
EDU 780 Classroom discourse analysis and quality of teaching (S, A) 9

OPTION B
7 courses X 9 ECTS (54 ECTS), 3 seminars X 3 ECTS (9 ECTS) and Dissertation (18 ECTS) = TOTAL 90 ECTS
Dissertation
EDU 798C Dissertation II (S, S)
EDU 799C Dissertation III (S, S)

Common Core Courses 9
Research
EDU 681 Advanced research methods (S, A) 9
EDU 682 Qualitative research in education (S, A) 9
EDU 683 Educational statistics with statistical packages applications (S, A) 9

Seminars 9
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3

TOTAL ECTS 90

* The course EDU 640 is prerequisite for all Courses in Educational Curriculum Development

C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level

Structure of the Ph.D. Programme
The following are required for the completion of the doctoral programme:
• Master degree in the same or similar subject.
• Success in Courses totalling 45 credit hours (ECTS).
• Success in Comprehensive examination.
• Completion of a Thesis.
The 45 credit hours (ECTS) are fulfilled with courses required for the Master degree, with the recommendation of the Academic Advisor responsible for the postgraduate studies of the department.

Note: In cases where the candidate holds a Master degree in a similar subject or a Master degree awarded by another recognised university, the Council of the Department can credit some or all the courses required for the Master degree, with the recommendation of the Academic Advisor responsible for the postgraduate studies of the department.

Comprehensive Examination of Doctoral Candidates
Aim of the comprehensive exams
The comprehensive exams evaluate 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.

Exam results are reported as Pass or Fail.

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
Description of Courses

EDU 598 Postcolonial Theory and the Curriculum (9 ECTS)

Post-Colonialism or Postcolonialism? Introduction to the ‘postcolonial’ as an ambivalent concept (the critique of colonialism and cultural hegemony implicates the risk of periodizing colonialism and reifying the critique of cultural hegemony). Histories of curriculum development are revisited from two perspectives: the historicism which projected Europe as the subject of History and Orientalism as an exemplary model of othering and discursive intertwining of knowledge and power. The productive-positive function of power is investigated in regard to colonial education and the interpellation of colonial subjects. The historical overlappings of theories of race, evolutionism, civilizing missions and education are analyzed, and the infiltration of the curricula by such theories is exposed, both in regard to the colonies and the metropolis. Possible foci of inquiry: the colonial genealogy of the literary canon; indigenization of the native ‘other’; curricula in the service of the civilizing mission; anti-colonial struggles and the war over the curriculum; the emergence and claims of national curricula. Resistance in the postcolonial condition: ‘the Empire writes back’, Diaspora vs. nativism, hybridity vs. authenticity of voice, inbetweeness vs. locality.

EDU 599 Gender Theories and the Politics of the Curriculum (9 ECTS)

Review of theories of gender. Critical genealogies of theories of gender and the gendering of the curriculum. Theories of gender in a historical context and their intertwinings with other dominant discourses such as nationalism, evolutionism and the civilizing potential of education. Gender norms: the normalization of sexual identities (femininities and masculinities), the nature of learning and the construction of knowledge. The reception of gender theories by curriculum theory (epistemologies, theories of learning, teacher and student identities) and their impact on the gendering of learning material, policies of exclusion, teacher education, gender relations. Introduction to feminist epistemologies, gender sensitive curricula, curriculum reforms and the politics of difference and equity.
EDU 601 Philosophical Aspects of Education (9 ECTS)
The relationship between philosophy and education is analyzed in depth. The educational significance of concepts relating to rationality, language, morality and subjectivity in cultures is discussed. Specifically, the following are analyzed: the binary oppositions which define various evaluations of knowledge and its acquisition, the prototypes reproduced by educational systems, and the renewal of cultural and interpretive material such as theory and practice, public and individual domain, autonomy and heteronomy, truth and falsehood.

The fundamental topics for discussion include the definition of philosophy, its relationship to education, the analysis of the meta-theoretical justification of the pedagogical act and the diverse interpretations which dictate specific educational positions. The aim is to achieve a critical assessment of the production and transmission of knowledge in the context of existing teaching practices.

EDU 603 Comparative Education (9 ECTS)
Definition and object of comparative education. Presentation of the Cyprus and the Greek educational systems. Description of European models of organization for education (such as the British, the German, and the French systems). Analysis of the American Educational System. Comparisons, similarities, differences, advantages, disadvantages, conclusions.

EDU 604 Curriculum Leadership (9 ECTS)
Theories and research on the construction of the concept of curriculum leadership. The School Reform Movement and the meaning of change in schools. Connecting action research to genuine teacher development. The instrumental-bureaucratic and the critical-developmental leadership paradigm in education. Critical pedagogy and the concept of curriculum leadership. Teacher development in context: meta-modernity, phenomenography and conceptual change.

EDU 605 Postmodernity and Education: Theory and Praxis (9 ECTS)
Modern and postmodern theories in education. Emphasis on functionalism, deconstructive approaches, Foucaultian discourse, critical pedagogy and their impact on the concept, the construction, and the role of the curriculum. The postmodern perspective on curriculum discourse.

EDU 606 Educational Policy and Curriculum Development (9 ECTS)
Curriculum as a social, political and ideological document. The rationale and procedures of educational reforms according to the rational-technocratic and the critical-phenomenological paradigms. National standards, accountability and effectiveness of the educational system. National, globalised and multicultural policy. Teacher evaluation and development through teacher research. European educational policy and its impact on current educational issues in Cyprus.

EDU 607 The Social Discourse on Curriculum Development (9 ECTS)
Critical approach to social theories on the construction and the results of school curriculum. The rhetoric of school reform and its effects on teacher development: Issues of power, expertise and commitment. Teaching as a profession of values. Controlling forms of curriculum. The hidden curriculum, desking teachers and the logic of technical control through curriculum forms.

EDU 608 Critical Discourses on Teacher Development (9 ECTS)

EDU 611 Curriculum Theory (9 ECTS)
Theory and critical approach towards the curriculum aims and objectives, the context/subject matter forms of knowledge and experience, methods as the mode of curriculum delivery, assessment and evaluation. Investigation and discourse of functionalism, Foucaultian criticism, critical pedagogy and radical paradigms. Historical development of curriculum, social, political, epistemological and psychological theory and practice. Forms of curricula according to modern and postmodern paradigms.

EDU 612 Models of Curriculum Evaluation
The aim of this course is to enable students to understand the increasing importance of evaluation on curriculum development and the theoretical principles underpinning a range of evaluation models. The models, techniques, and procedures of curriculum evaluation; the purposes of evaluation in curriculum development; the key questions to be addressed in writing an evaluation strategy; cultural and ethical issues in evaluation; the evaluation report;
how to use the results of evaluation to inform curriculum design.

**EDU 613 Specialised Topics and Contemporary Trends**

New topics and trends in Curriculum development and evaluation, teaching and learning, development of teachers, schools and education.

**EDU 614 Informal Curriculum and Mass Media**

Research on the role of mass media for the production of the informal curricula; the hidden value of the informal curriculum; the relationship between formal and informal curricula; theories of information processing through mass media and the resistance of the person; contemporary trends and issues on the control of mass media.

**EDU 618 Sociological Aspects of Education (9 ECTS)**

This course will cover macro-sociological approaches relating to the sociology of the educational system, as well as micro-sociological approaches relating to the sociology of the school unit. Emphasis will be placed on the school as a social system and its role in the socialization of the student.

**EDU 626 Programme and School Evaluation (9 ECTS)**

Programme evaluation as an institution and as a process. Critical presentation and analysis of evaluation models such as Stufflebeam, Popham, Borich, Provus, and Scriven models. Formative and summative evaluation. Specific mention of particular programmes at the macro and micro levels. Ways of analyzing and evaluating school improvement and the evaluation of schools as the main unit of instruction and curriculum development.

**EDU 627 Introduction to Innovations in Education (9 ECTS)**

Analysis of the concept of educational change and the introduction to innovations in education. The study of the individual school as the main vehicle for the introduction of change and innovations. Theories of organizational change and resistance to change in educational organizations.

**EDU 629 Instructional Leadership**

Theoretical perspectives on Instructional Leadership. The role of the school principal and other educational leaders in establishing and sustaining a culture of teaching and learning. The school as a learning community.

**EDU 631 School Effectiveness and School Improvement (9 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, organisational, 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 placed on the development of research projects attempting to use insights from effectiveness and improvement research to managing the process of ongoing development.

**EDU 633 European Dimension in Education (9 ECTS)**


**EDU 634 Principles of Organization of In-Service Programmes (9 ECTS)**

The concept of total quality in the development of in-service programmes. The goal-setting and experiential process of the development of in-service programmes. Research around action and reflective thinking. Mentors and student teaching. Systems for the support of in-service personnel.

**EDU 640 Basic Principles and Processes of Curriculum Development (9 ECTS)**

The curriculum as product and praxis. The concept of curriculum development at the micro and macro level.

**EDU 642 Fundamentals of Measurement and Assessment in Education (9 ECTS)**

Forms of validity and reliability; Methods for measuring construct validity; Classical Test Theory; Item Response Theory Models: One-parameter logistic model, Two-parameter logistic model, Three-parameter logistic model, Nominal response IRT model, Graded response IRT model; Ability and Item Parameter Estimation; Assessment of Model Data Fit; Methods for Identifying Biased Test Items: Item Bias Indices based on Classical Test Theory, IRT Methods for Detecting Differential Item Functioning; Test Score Equating; Computer-Based Adaptive Testing.

**EDU 654 History of Education**

Education and curricula in the pre-industrial, the industrial and the technological era; pre-modern, modern, late modern and post-modern assumptions and interpretations; interrelation of social, economic, political and ideological considerations; globalisation and education; the Lisbon strategy and the European Union. The role of the history of education today.

**EDU 681 Advanced Research Methods (9 ECTS)**


**EDU 682 Qualitative Research in Education (9 ECTS)**

This course begins with an examination of the differences in philosophy between the quantitative and qualitative approach which reveals the basis upon which the methods of doing qualitative research are built. Various theoretical traditions and orientations within qualitative research such as ethnography, phenomenology, ethnomethodology and symbolic interactionism are examined. Issues concerning research design in qualitative research are discussed and the "emergent research design" model is presented. The logic and power of purposeful sampling is also discussed and various strategies for selecting information-rich cases are presented. The next component of the course is focused on the major methods of data collection used in qualitative research: observation, in-depth interviewing, and documentary analysis. Then, several techniques for analysing qualitative data are examined, and special emphasis is given to the "constant comparative method". Moreover, computer programmes that could be used for analysing qualitative data are presented and special emphasis is given to the use of NUDIST. Finally, techniques for enhancing the quality and credibility of qualitative analysis are examined and ways for communicating the outcomes of qualitative research are presented.

**EDU 683 Educational Statistics with Statistical Packages Applications (SPSS) (9 ECTS)**

The course focuses on two main units: The first unit includes fundamental research concepts such as the basic terms used in statistics and research, the stages in conducting a research project (investigation of the problem, research process, data analysis and conclusions), the types of research (experimentation, correlation research, descriptive research and historical analysis) and the five chapters of a research report (the problem definition, literature review, methodology, results, conclusions).

The second unit includes commands from the SPSS package for the preparation of statistical data for analysis such as recode, compute, select if, get file, import file and statistical techniques for the analysis of data. Specifically, concepts relevant to descriptive statistics and deductive statistics are covered. With regard to descriptive statistics, the following are discussed: t-test, correlation, ANOVA, ANCOVA, multiple comparison procedures, regression analysis, partial correlation, factor analysis, cluster analysis, quick cluster, multidimensional scaling and discriminant analysis.

**EDU 689 Independent Study (9 ECTS)**

The student chooses a topic of great personal interest and prepares an extensive paper under the supervision of an academic staff member who specializes in the student’s area.

**EDU 693 Advanced Methods of Teaching and Learning (9 ECTS)**

Constructivisms, modern and postmodern. Learners as information processors. Theories of conceptual change. Sociocultural theories on teaching and learning. Methods of teaching and metacognitive development. Forms of learning and metacognition. Cooperative learning,
individualized instruction and differentiation of teaching and learning.

EDU 699 Conflict and Collaboration: Critical Analysis
Aspects of conflict in the societal and educational setting; interpretation according to the traditional, the human relations and the interactionist view; the debate on functional and dysfunctional conflicts; conflicts based on values and interests; methods of conflict resolution, cooperation and collaboration.

EDU 780 Classroom Discourse Analysis and Quality of Teaching
Multiple Perspective Analysis of Classroom Discourse; Ethnography and Language in Educational Settings; Sociosemiotics and Education; Power and control in classroom discourse analysis; Inequality and classroom discourse; Learning and discourse analysis.

Programme Coordinator
Mary Koutselini
Associate Professor
e-mail: edmaryk@ucy.ac.cy
Tel.: 22753732

PEDAGOGICAL SCIENCES
Aim of the Programme
This Postgraduate Programme offers educational specialists and professionals involved in education the opportunity to undertake specialized studies in the pedagogical sciences. The students enrolled in the programme can complete a doctoral degree and pursue an academic career.

Structure of the Programme
Successful completion of 90 ECTS is required. The student may choose one of the following options:

Option A (completion of 9 courses and 3 seminars)
- One course in Educational Research (9 ECTS)
- Elective Courses: all students must complete at least three courses from two of the areas shown below (54 ECTS)
- Two Elective Courses from the Postgraduate Programmes of the Department (18 ECTS)
- Three seminars (9 ECTS)

Option B (completion of 7 courses, 3 seminars and dissertation)
- One course in Educational Research (9 ECTS)
- Elective Courses: all students must complete at least three courses from two of the areas shown below (54 ECTS)
- Three seminars (9 ECTS)
- Dissertation (18 ECTS)

Option A
9 Courses X 9 ECTS and 3 seminars X 3 ECTS = TOTAL 90 ECTS

Educational Research
(One course from the following)
EDU 681 Advanced educational research methods (S, A) 9
EDU 682 Qualitative research in education (S, A) 9
EDU 683 Educational statistics with statistical package applications (S, A) 9

**Elective Courses**
(At least four courses from two of the following areas)

**Educational Leadership**
EDU 620 Introduction to educational administration (C, B) 9
EDU 623 Observation and evaluation of teaching and personnel (C, B) 9
EDU 631 School effectiveness and school improvement (S, A) 9
EDU 645 Educational policy (S, A) 9
EDU 694 Seminar in programme evaluation (S, S) 9
Any other course in this area 9

**Curriculum Development and Evaluation**
EDU 608 Critical discourses on teacher development (S, A) 9
EDU 620 Introduction to educational administration (C, B) 9
EDU 640 Basic principles and processes of curriculum development (C, B) 9
EDU 681 Advanced educational research methods (S, A) 9
EDU 694 Seminar in programme evaluation (C, B) 9
Any other course in this area 9

**Mathematics Education**
EDU 673 Mathematics curriculum: development and evaluation (C, I) 9
EDU 676 Contemporary technology in mathematics teaching (C, B) 9
EDU 677 Theories of representation and educational teaching (C, I) 9
EDU 678 Affect and mathematics learning (C, I) 9
EDU 680 Theories of mathematical understanding (C, B) 9

Any other course in this area 9

**Learning in Natural Sciences**
EDU 651 The development of theories in natural science: the nature of Natural Sciences I 9
EDU 652 The process of inquiry in natural sciences 9
EDU 653 Cognitive constraints in learning natural sciences: diagnosis and teaching interventions 9
EDU 664 Integrated curricula in natural sciences (only for students with a degree in education - pedagogical) 9
Any other course in this area 9

**Cognitive, Developmental and Educational Psychology**
PSY 610 Psychological aspects of education 9
Two other courses from the postgraduate programme 18
(To enrol in courses at the 700 level, permission of the instructor is required)

**Cultural Dimensions of Education**
EDU 637 The theory and politics of multicultural education 9
EDU 638 Bilingualism in education 9
EDU 639 Inclusive education: the new face of special education? 9
EDU 641 Education and gender 9
EDU 646 Globalisation, cosmopolitanism and education 9
EDU 647 Christian humanocentrism and the contemporary world 9

**Elective Courses**
(Courses from the Postgraduate Programmes of the Department)
EDU 601 Philosophical aspects of education (S, I) 9
EDU 618 Sociological aspects of education (S, I) 9
EDU 603 Comparative education (S, I) 9
EDU 698 Measurement I (S) 9
Any other course from the Department or the course CS 654 from the Department of Computer Science.

**Seminars**

EDU 730 Seminar I 3  
EDU 731 Seminar II 3  
EDU 732 Seminar III 3

**TOTAL ECTS** 90

*Note: Students may complete their programmes by taking Elective Courses.*

*C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level*

**OPTION B**

7 courses X 9 ECTS, 3 seminars X 3 ECTS and Dissertation (18 ECTS) = TOTAL 90 ECTS

**Educational Research**

(One course from the following)

EDU 681 Advanced educational research methods (S, A) 9  
EDU 682 Qualitative research in education (S, A) 9  
EDU 683 Educational statistics with statistical package applications (S, A) 9

**Elective Courses**

(At least three courses from two of the following areas)

**Educational Leadership**

EDU 620 Introduction to educational administration (C, B) 9  
EDU 623 Observation and evaluation of teaching and personnel (C, B) 9  
EDU 631 School effectiveness and school improvement (S, A) 9  
EDU 645 Educational policy (S, A) 9  
EDU 694 Seminar in programme evaluation (S, S) 9

Any other course in this area 9

**Curriculum Development and Evaluation**

EDU 608 Critical discourses on teacher development (S, A) 9  
EDU 620 Introduction to educational administration (C, B) 9  
EDU 640 Basic principles and processes of curriculum development (C, B) 9  
EDU 681 Advanced educational research methods (S, A) 9  
EDU 694 Seminar in programme evaluation (C, B) 9

Any other course in this area 9

**Mathematics Education**

EDU 673 Mathematics curriculum: development and evaluation (C, I) 9  
EDU 676 Contemporary technology in mathematics teaching (C, B) 9  
EDU 677 Theories of representation and educational teaching (C, I) 9  
EDU 678 Affect and mathematics learning (C, I) 9  
EDU 680 Theories of mathematical understanding (C, B) 9  
EDU 694 Seminar in programme evaluation (C, B) 9

Any other course in this area 9

**Learning in Natural Sciences**

EDU 651 The development of theories in natural science: the nature of natural sciences I 9  
EDU 652 The process of inquiry in natural sciences 9  
EDU 653 Cognitive constraints in learning natural sciences: diagnosis and teaching interventions 9  
EDU 664 Integrated curricula in natural sciences (only for students with a degree in education - pedagogical) 9  
EDU 694 Seminar in programme evaluation (S, S) 9

Any other course in this area 9

**Cognitive, Developmental and Educational Psychology**

PSY 610 Psychological aspects of education 9  
Two other courses from the postgraduate programme 18
(To enrol in courses at the 700 level, permission of the instructor is required)

**Cultural Dimensions of Education**

EDU 637 The theory and politics of multicultural education

EDU 638 Bilingualism in education

EDU 639 Inclusive education: the new face of special education?

EDU 641 Education and gender

EDU 646 Globalisation, cosmopolitanism and education

EDU 647 Christian humanocentrism and the contemporary world

**Dissertation**

EDU 798P Dissertation I (S, S)

EDU 799P Dissertation II (S, S)

**Seminars**

EDU 730 Seminar I

EDU 731 Seminar II

EDU 732 Seminar III

**TOTAL ECTS**

90

Note: Students may complete their programmes by taking Elective Courses.

C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level

**Description of Courses**

Some course descriptions can be found under the other postgraduate programmes of the Department.

**EDU 637 The Theory and Politics of Multicultural Education (9 ECTS)**

The course attempts a critical genealogy of various cultural differences which have served discriminatory, exclusionary and racist educational practices. Against this historical background, we study the contemporary debate on identity politics and the ethics of recognition with particular emphasis on the shift from the dialectic of identity-and-difference (self and 'other') to a postcolonial approach to identity as hybrid, heterogeneous and plural. Within this conceptual framework, the course explores the emergence of multicultural education as a response to the multicultural re-composition of nation states, global mobility and relocation of populations, and cultural hybridity (where the globalization of popular culture functions as a catalyst). Multicultural education is explored both as a general educational policy and as a set of particular pedagogical developments. The educational signification and significance of cultural difference (race, ethnicity, language) are discussed in detail in reference to minority education, immigrant and migrant education, education and ethic conflict, etc. Terms such as "cultural identity," "civilization" and "recognition" are problematized, their ideological discontinuities are identified, and the divergent educational policies that such normative terms support are critically evaluated.

**EDU 638 Bilingualism in Education (9 ECTS)**

The purpose of this course is to examine aspects of linguistic variation such as bilingualism and diglossia and their implications for education. We examine the processes and stages of first language acquisition in bilingual contexts with special emphasis on phonological and syntactic development. We explore current educational practices and their underlying ideological foundations and assess their effectiveness with regard to both linguistic development and the construction of sociocultural identities.

**EDU 639 Inclusive Education: The New Face of Special Education? (9 ECTS)**

The purpose of the course is to suggest that inclusive education is the only possible type of special education in the third millennium. It argues for the transformation of the current bipolar school system into a unified system, a "school for all children". This proposal is supported through extensive study of the relevant international bibliography and with reference to the philosophy, policy and practice of the inclusive school in Cyprus and abroad. The course ends with the study of developments in the legislation on special education in Cyprus. The course is addressed to future teachers, irrespective of level or viewpoint and it is indispensable for those new to special education as well as to everyone involved in education.
EDU 641 Education and Gender (9 ECTS)
This course examines gender as an historical, ideological, cultural construct and a social structure especially in relation to the statement of educational goals and the formation of pedagogical practices. The course also investigates the establishment of specific relationships between the two genders and its realisation on the basis of role distribution for men and women and the establishment of cross-gender relationships in areas of education. The development of the feminist movement in education and its fundamental ideological coordinates throughout its evolution are also explored. The theoretical edge of the new feminist ideology is the introduction of sex education courses in the school as a prerequisite for the development of meaningful democratic relations between the sexes and for the establishment of equal rights as opposed to the metaphysical segregation of the sexes on the basis of their biological particularities.

EDU 646 Globalisation, Cosmopolitanism and Education (9 ECTS)
This course examines the construction of cosmopolitan subjectivity as an educational aim. The objectives of the course concern a critical approach to the philosophical debates consolidating around that idea and an analysis of their relevance to education. We meet these objectives by (1) drawing the appropriate conceptual distinctions between globalization and cosmopolitanism on the one hand and patriotism and nationalism on the other; (2) examining the role notions such as "secularization of worldviews," "community," and "human nature" play with regard to cosmopolitanism as an educational ideal; and (3) deploying the arguments of defenders and critics of cosmopolitanism.

Overall, the course explores the philosophical assumptions implicit in the conception of students as potential world citizens as well as the key-notions that underpin it. It takes Martha Nussbaum’s theory of cosmopolitan education as an example in order to concretize the above mentioned steps by displaying how the cosmopolitan ideal relies on anthropological, epistemological, political, and moral grounds.

EDU 647 Christian Personhood and the Modern World (9 ECTS)

EDU 698 Measurement I (9 ECTS)

Programme Coordinator
Constantinos Christou
Professor
e-mail: edchrist@ucy.ac.cy
Tel.: 22753728
MATHEMATICS EDUCATION

Aim of the Programme

Technological development coupled with the increased demands associated with the social sciences make Mathematics a necessary tool for all subject areas. Moreover, growing awareness of mathematics' importance in the development of our "higher mental functions" and the constantly expanding concept of mathematics literacy call for greater emphasis on mathematics education. Advanced studies in mathematics will enable graduates to approach the relevant topics through research and critical analysis.

The aim of the programme is to educate individuals to analyze and interpret the aims and objectives of mathematics education, follow the recent developments in their subject and take up specific research efforts in the areas of mathematics teaching and learning.

The Programme anticipates the acquisition of Master and Doctoral Degrees.

Structure of the Master Programme

According to the general framework of graduate programmes for the award of a Master degree, the student 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 9 courses and 3 seminars)
The student selects eight courses from the Specialization Courses (72 ECTS), one course from the Educational Research Courses (9 ECTS) and 3 seminars (9 ECTS).

Option B (completion of 7 courses, 3 seminars and dissertation)
The student selects six courses from the Specialization Courses (54 ECTS), one course from the Educational Research Courses (9 ECTS), three seminars (9 ECTS) and completes a dissertation (18 ECTS).

OPTION A

9 courses - Specialization Courses (8 x 9), Educational Research (1 x 9) and 3 seminars (3 x 3 ECTS) = TOTAL 90 ECTS

Specialization Courses

Required Courses

- EDU 673 Mathematics curriculum: development and evaluation (C, I) 9
- EDU 677 Theories of representation and educational teaching (C, I) 9
- EDU 678 Affect and mathematics learning (C, I) 9
- EDU 680 Theories of mathematical understanding (C, B) 9

Free Elective Courses (4 courses) 36

- EDU 671 Cognitive analysis of mathematics learning (S, B) 9
- EDU 672 Topics in the philosophy and history of mathematics (S, B) 9
- EDU 674 Mathematical problem solving (S, I) 9
- EDU 675 Recent trends in mathematics education (S, B) 9
- EDU 676 Contemporary technology in mathematics teaching (C, B) 9
- EDU 679 Space, visualization and reasoning methods (C, I) 9

Educational Research Courses (1 course)

- EDU 681 Advanced educational research methods (S, A) 9
- EDU 682 Qualitative research in education (S, A) 9
- EDU 683 Educational statistics with statistical packages (S, A) 9
- PSY 788 Advanced research methods (M, S) 9
Seminars
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3
TOTAL ECTS 9

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OPTION B
7 courses - Specialization (6 X 9), Educational Research (1 X 9), Dissertation (18 ECTS) and 3 seminars (9 ECTS) – TOTAL 90 ECTS

Specialization Courses 54
Required Courses 36
EDU 673 Mathematics curriculum: development and evaluation (C, I) 9
EDU 677 Theories of representation and educational teaching (C, I) 9
EDU 678 Affect and mathematics learning (C, I) 9
EDU 680 Theories of mathematical understanding (C, I) 9
Free Elective Courses (2 courses) 18
EDU 671 Cognitive analysis of mathematics learning (S, B) 9
EDU 672 Topics in the philosophy and history of mathematics (S, B) 9
EDU 674 Mathematical problem solving (S, I) 9
EDU 675 Recent trends in mathematics education (S, B) 9
EDU 676 Contemporary technology in mathematics teaching (C, B) 9
EDU 679 Space, visualization and reasoning methods (C, I) 9

Educational Research Courses (1 course) 9
EDU 681 Advanced educational research methods (S, A) 9
EDU 682 Qualitative research in education (S, A) 9
EDU 683 Educational statistics with statistical packages (S, A) 9
PSY 788 Advanced research methods (M, S) 9

Dissertation 18
EDU 798M Dissertation I
EDU 799M Dissertation II

Seminars 9
EDU 730 Seminar I 3
EDU 731 Seminar II 3
EDU 732 Seminar III 3

TOTAL ECTS 90

C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level

Structure of the Ph.D. Programme
The following are required for the completion of the doctoral programme:

- Master degree in the same or similar subject.
- Success in courses totalling 45 credit hours (ECTS).
- Success in comprehensive examination.
- Completion of a Thesis.

The 45 credit hours (ECTS) may be fulfilled with courses of the Master degree programme with the approval of the Department’s Postgraduate Programme Coordinator.

Note: In cases where the candidate holds a Master degree in a similar subject or a Master degree awarded by another recognised university, the Council of the Department can credit some or all the courses required for the Master degree, with the recommendation of the Academic Advisor.
responsible for the postgraduate studies of the department.

The courses of the programme are divided into two categories: a) Specialization courses and b) Educational Research courses.

### Description of Courses

**EDU 672 Topics in the Philosophy and History of Mathematics (9 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 (9 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 (9 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

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### ECTS

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<thead>
<tr>
<th>Course Description</th>
<th>ECTS</th>
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<tbody>
<tr>
<td><strong>Specialization Courses</strong></td>
<td>36</td>
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<tr>
<td><strong>Compulsory Courses</strong></td>
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<tr>
<td>EDU 671 Cognitive analysis of mathematics learning (C, B)</td>
<td>9</td>
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<tr>
<td>EDU 672 Topics in the philosophy and history of mathematics (C, B)</td>
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<td>EDU 678 Affect and mathematics learning (C, B)</td>
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<tr>
<td>EDU 680 Theories of mathematical understanding (C, I)</td>
<td>9</td>
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<tr>
<td>EDU 679 Space, visualization and reasoning in geometry (C, I)</td>
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<tr>
<td><strong>Educational Research Courses</strong></td>
<td>9</td>
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<tr>
<td>EDU 681 Advanced educational research methods (S, A)</td>
<td>9</td>
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<tr>
<td>EDU 682 Qualitative research in education (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>EDU 683 Educational statistics with statistical package application (S, A)</td>
<td>9</td>
</tr>
<tr>
<td>PSY 788 Advanced research methods (M, S)</td>
<td>9</td>
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<td><strong>TOTAL ECTS</strong></td>
<td>45</td>
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</table>

*C=Common Core, S=Support, M=Minor, B=Basic Level, I=Intermediate Level, A=Advanced Level, S=Specialized Level*
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 Contemporary Research in Mathematics Education (9 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:
  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.
  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 (9 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 analyses 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 677 Theories of Representation and Educational Applications (9 ECTS)
A central goal of the course is the presentation of Representation Theories, which indicate the power of internal representations of the subjects in learning mathematics. For this reason several studies on the role of representations are critically examined. These studies are categorized in four domains according to their content:
- Studies which suggest a representation theory
- Studies which examine the relation between representations and problem solving
- Studies which examine the change in the field of representations
- Studies which examine the relation between representations and specific mathematical concepts (functions, fractions, proportions, area, etc).

EDU 678 Affect and Mathematics Learning (9 ECTS)
The aim of this course is the study of the connections between the affective domain and the teaching and learning of mathematics. Specifically, the meaning and the role of the concepts "attitudes towards mathematics," "beliefs" and "conceptions," "motivation" and "metacognition," "self-esteem" and "self-concept," "self-efficacy" and "self-regulation" with respect to teaching and learning mathematics and in particular with respect to problem solving, are discussed and analysed.

EDU 679 Space, Visualization and Reasoning in Geometry (9 ECTS)
The course is focused on three dimensions related to the study of Geometry.
The first dimension concerns children's perception of space and the variety of perceptual, cognitive and epistemological obstacles related to space perception. The second dimension deals with the representations related to the perception of space. The third dimension concentrates on students' reasoning in Geometry.

EDU 680 Theories of Mathematical Understanding (9 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
LEARNING IN NATURAL SCIENCES

Justification of the Programme

Learning depends on the activation of multiple cognitive processes. Recent developments in cognitive science provide the basis for a systematic approach to understanding, investigating and modelling science learning processes.

Natural sciences constitute an advanced and complex sphere of knowledge with widely accepted capabilities of prediction and interpretation. Consequently, learning in natural sciences is confronted with special challenges both for the learners and the educational system that supports them.

Many educational systems consider as basic priorities an adequate understanding of nature and the acquisition of skills for scientific analysis and systematic reasoning.

There is a need for teachers in primary and secondary education to acquire research skills. The 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.

Aims and Objectives of the Programme

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.

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EDU 681 Advanced Educational Research Methods (9 ECTS)

This course pertains to other graduate programmes and is described elsewhere.

EDU 683 Educational Statistics with Statistical Package Applications (9 ECTS)

The course focuses on two main units: The first unit includes fundamental research concepts such as the basic terms used in Statistics and Research, the stages in conducting a research project (investigation of the problem, research process, data analysis and conclusions), the types of research (experimentation, correlation research, descriptive research and historical analysis) and the five chapters of a research report (the problem definition, literature review, methodology, results, conclusions).

The second unit includes commands from the SPSS package for the preparation of statistical data for analysis such as recode, compute, select if, get file, import file and statistical techniques for the analysis of data. Specifically, concepts relevant to descriptive statistics and deductive statistics are covered. With regard to descriptive statistics, the following are discussed: t-test, correlation, ANOVA, ANCOVA, multiple comparison procedures, regression analysis, partial correlation, factor analysis, cluster analysis, quick cluster, multidimensional scaling and discriminant analysis.
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 for 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.

**Structure of the Master Programme**

For the Master Programme, candidates for admission must have a first degree from a Department of Education, Engineering, Physics, Chemistry, Biology or Natural Sciences of an accredited University.

For the completion of the programme, each graduate student must successfully complete courses corresponding to 90 ECTS which are distributed as follows:

18 ECTS in core courses, 45 ECTS in specialization courses and 18 ECTS in dissertation.

7 courses X 9 ECTS (63 ECTS) and Dissertation (18 ECTS) and 3 seminars (9 ECTS) = TOTAL 90 ECTS

**Core Courses**

- PSY 606 Cognitive Science 9 ECTS
- EDU 683 Educational statistics with applications of statistical packages 9 ECTS

**Specialization Courses**

- EDU 651 The development of theories in natural sciences: The natural sciences I 9 ECTS
- EDU 652 The process of inquiry in natural sciences I 9 ECTS
- EDU 653 Cognitive constraints in learning natural sciences: Diagnosis and teaching interventions 9 ECTS

**Compulsory Courses**

- EDU 661 The development of theories in natural sciences: the natural sciences II 9 ECTS
- EDU 662 The role of information and communication technology in promoting learning in natural sciences 9 ECTS
- EDU 663 Modern trends in teaching natural sciences 9 ECTS
- EDU 664 Integrated curricula in natural sciences (Compulsory for graduates of education departments) 9 ECTS
- EDU 665 Environmental education 9 ECTS
- EDU 666 Cognitive science and the teaching of natural sciences 9 ECTS
- EDU 667 Development of scientific reasoning 9 ECTS
EDU 668 Cognitive and teaching approaches  
(Theories of knowledge acquisition and the process of learning)  

EDU 669 Design and analysis of educational software related to the natural sciences

EDU 682 Qualitative research in education

EDU 689 Independent study

Two courses from any other graduate programme of the Department of Education

**Dissertation**  
EDU 798F Dissertation I **  
EDU 799F Dissertation II **

**Seminars**  
EDU 730 Seminar I  
EDU 731 Seminar II  
EDU 732 Seminar III  

**TOTAL ECTS**  
* Compulsory for holders of first degree in Education  
** Dissertation is a compulsory course  

**Description of Courses**

**EDU 602 Theory of Knowledge (9 ECTS)**
Issues pertaining to the nature of knowledge, the way knowledge is acquired, which mechanisms facilitate its acquisition, the degree of its validity and other related problems have occupied human thought for centuries. The issue of the nature of knowledge is of special importance to education, insofar as its main aim relates to the construction and dissemination of knowledge. The course examines all the related issues from a systematic rather than from a historic perspective and focuses on the various attempts to resolve different epistemological problems. The course emphasizes the relation between theory and experimentation as a factor contributing to the development of scientific theories and the effective teaching and understanding of their conceptualizations. The approach is not just philosophical but also relies on research in other disciplines, such as psychology and cognitive science, to the extent that the study of some philosophical issues can be approached and advanced based on the findings of these disciplines.

**EDU 651 The Development of Theories in Natural Sciences: The Nature of Natural Sciences I (9 ECTS)**
The main topic of this course relates to the nature of scientific theories and deals with issues such as the process of discovery and the verisimilitude of scientific theories, the role of experimentation, the sociology of scientific research, and the main attributes differentiating a scientific theory from other thought processes.
Epistemological issues related to scientific theories, such as their truth and their correspondence with reality, as well as realism in science will also be discussed. Different scientific approaches, as they are revealed through the history of the natural sciences, will be examined.

EDU 652 The Process of Inquiry in Natural Sciences (9 ECTS)

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: Diagnosis and Teaching Interventions (9 ECTS)

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.

EDU 660 Design, Development, and Evaluation of Curricula (9 ECTS)

Curricula play an important role in the educational process. The course examines issues related to science curricula. We explore systematic approaches to the design of curricula emphasizing principles such as conceptual hierarchies and epistemological analysis in determining activity sequences and cross-connections. We discuss ways of promoting the effectiveness of curricula in guiding students to overcome specific conceptual, reasoning, and epistemological difficulties. We examine issues related to the implementation of curricula, in particular, the role of facilitator questions in open and guided inquiry, the practical aspects of systematic development of a coherent conceptual framework and the integrated development of conceptual understanding and reasoning skills. Finally, we explore different methods for validating curriculum materials in relation to the intended objectives of conceptual understanding and the development of reasoning and investigative skills.

EDU 661 The Development of Theories in Natural Sciences: The Nature of Natural Sciences II (9 ECTS)

This course builds on EDU 651 and emphasizes the issues related to specific historical advancements in natural sciences, as they are depicted in authentic sources describing the scientific activities of prominent scientists (Newton, Faraday, Lavoisier, Darwin, etc.). Through an in-depth analysis of these historical sources, the development of scientific ideas and methods of investigation will be revealed. The main objective is to focus on the ways scientists understand and face the different methodological and philosophical problems that are interrelated with the on-going scientific enterprise.

EDU 662 The Role of Information and Communication Technology in Promoting Learning in Natural Sciences (9 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. Modeling as a process of teaching and learning.

EDU 663 Modern Trends in Teaching Natural Sciences (9 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 (9 ECTS)

Physical and chemical systems and mechanisms. Modeling of phenomena and other approaches of integration. Reasoning abilities and scientific thinking. The
development of conceptual understanding through integrated curricula (physics, chemistry, biology, and technology).

**EDU 665 Environmental Education (9 ECTS)**
Earth systems. Interacting sub-systems of soil, air, water, and living organisms. The continuing evolution of geological systems. Ecosystems and ways of supporting and conserving them. The impact of human activities on the environment. The contribution of science and technology to environmental protection. Creativity in the design of curriculum materials for environmental education. Integrated approaches for developing environmental awareness, conceptual understanding, and investigative skills.

**EDU 666 Cognitive Science and the Teaching of Natural Sciences (9 ECTS)**
Cognitive science is a rather new scientific approach that examines the cognitive processes of intelligent beings from a variety of different perspectives, such as philosophy, psychology, neuroscience, linguistics, artificial intelligence, and dynamic systems theory. These perspectives converge in cognitive science in terms of applying different methods to the investigation of reasoning. Recently, research findings from cognitive science have been implemented in education. This is a significant development, because these findings are directly related to education. The course emphasizes recent developments in cognitive science in relation to general education and science education in particular.

**EDU 667 Development of Scientific Reasoning: Cognitive and Teaching Approaches (9 ECTS)**
Analysis of scientific approaches and skills, such as linking data and hypotheses, the formulation and testing of hypotheses, and the identification and control of variables. In-depth examination of current research and different theoretical perspectives on understanding the development of scientific thought. Implications for the design and implementation of teaching approaches conducive to the development of scientific reasoning.

**EDU 668 Theories of Knowledge Acquisition and the Process of Learning (9 ECTS)**
This is a core course for other graduate programmes and is described elsewhere.

**EDU 669 Design and Analysis of Educational Software Related to the Natural Sciences (9 ECTS)**

**EDU 682 Qualitative Research in Education (9 ECTS)**
This is a core course for other graduate programmes and is described elsewhere.

**EDU 683 Educational Statistics with Applications of Statistical Packages (9 ECTS)**
This is a core course for other graduate programmes and is described elsewhere.

**EDU 689 Independent Study (9 ECTS)**
The student conducts an independent study within his/her own interest under the guidance of a faculty member specializing in science learning.

**EDU 751 Design of Research Proposals (9 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 (9 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 Teaching Models and Didactical Recontextualization of the Content of Natural Science (9 ECTS)


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DIDACTICS AND METHODOLOGY OF MATHEMATICS
(JOINT DEGREE PROGRAMME OF THE UNIVERSITY OF CYPRUS AND THE UNIVERSITY OF ATHENS)

The Department of Education, the Department of Mathematics and Statistics of the University of Cyprus and the Department of Mathematics of the University of Athens, offer a postgraduate programme leading to a Master Degree in "Didactics and Methodology of Mathematics".

Aim and Purpose of the Programme

This is a new programme designed specifically for students with an undergraduate degree in mathematics. It entails an enhanced number of course units, which will be fulfilled in special summer sessions at the University of Athens. Students are obliged to cover the cost of their travel to Greece and attendance at the summer schools and seminars.

A limited number (15) of Cypriot students will be accepted to the programme. Two-thirds of the programme will be offered in Cyprus by academic staff from the Department of Mathematics and Statistics and the Department of Education. The remaining credits will be fulfilled in Athens, in the summer session.

The duration of the programme is two years and the tuition is CYP 1500 per year. The degree will be granted by the University of Cyprus.

Structure of the Programme

Nine courses and three seminars are required for the completion of the programme:

- 6 courses from the area of Didactics and Methodology of Mathematics
- 1 Statistics course
- 2 courses from the area of History - Philosophy
- 3 seminars
**Structure of the Programme**

The structure of the programme and courses is as follows:

**OPTION A**

9 courses X 9 ECTS and 3 seminars X 3 ECTS = TOTAL 90 ECTS

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Didactics of Mathematics</td>
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<tr>
<td>EDU 501 Teaching of Analysis</td>
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<tr>
<td>EDU 673 Mathematics Curriculum: Development and Evaluation</td>
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<td>Didactics of Mathematics Theory</td>
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<td>Mathematics Teaching through Problem Solving</td>
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<tr>
<td>Teaching Algebra and Geometry</td>
<td>9</td>
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<tr>
<td>Teaching Probability and Statistics</td>
<td>9</td>
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<td>The Integration of New Technology in Teaching Mathematics</td>
<td>9</td>
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<td>Mathematics Teaching and History of Mathematics</td>
<td>9</td>
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<td>Mathematics Modeling</td>
<td>9</td>
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<td>Methods of Research in Teaching Mathematics</td>
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<td>Special Issues in Teaching Mathematics</td>
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<tr>
<td>History – Philosophy</td>
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<td>History of Ancient Greek Mathematics – Euclides Elements</td>
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<td>History of Modern Mathematics</td>
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<td>Philosophy of Mathematics</td>
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<td>Plato and Mathematics</td>
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<td>Philosophy of Education</td>
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<td>Statistics</td>
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<td>Topics in Probability-Statistics I</td>
<td>9</td>
</tr>
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<td>TOTAL ECTS</td>
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**Programme Coordinators**

- **Athanasios Gagatsis**
  Professor
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- **Constantinos Christou**
  Professor
  e-mail: edchrist@ucy.ac.cy
  Tel.: 22753728

- **Demetra Pitta-Pantazi**
  Assistant Professor
  e-mail: dpitta@ucy.ac.cy
  Tel.: 22751948

- **Professor Pantelis Damianou**
  Department of Mathematics and Statistics
  e-mail: damianou@ucy.ac.cy
  Tel.: 22892654
Research Interests of the Academic Staff

- **Charoula Angeli**
  
  Assistant Professor
  
  Computers as cognitive tools, Educational software design, Integration of computer-based technologies in K-12, Design of computer-enhanced curricula, Teaching methodology, Computer-mediated communication and learning, Design of online learning environments, Critical thinking.

- **Constantinos Christou**
  
  Professor
  
  Solution of mathematical problems, assessment in mathematics, the process of speeding up the comprehension of mathematical concepts, and beliefs concerning satisfactory performance in mathematics.

- **Constantinos Constantinou**
  
  Assistant 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.

- **Stavros S. Fotiou**
  
  Associate Professor
  

- **Athanasios Gagatsis**
  
  Professor
  
  Mathematics education: Epistemological, teaching and ontogenetic obstacles in relation to the learning of mathematical concepts; mistakes in mathematics and teacher attitudes; history of mathematical education; legibility of mathematical texts; learning difficulties in mathematics.

- **Helen Phtiaka**
  
  Associate Professor
  
  Educational legislation, policy and practice, the notion of difference in education, disability, inclusive education, globalisation.

- **Mary Koutselini**
  
  Associate Professor
  
  Curriculum development and evaluation, teaching methodology, school textbooks, development of metacognition.

- **Leonidas Kyriakides**
  
  Assistant 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 the construct validity.

- **Maria Eliophotou-Menon**
  
  Assistant 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.

- **Constantinos Papanastasiou**
  
  Associate Professor
  
  Monte Carlo studies-ANCOVA, educational structural equation models, evaluation of achievement, comparative studies with reference to the International Association for the Evaluation of Educational Achievement.

- **Marianna Papastephanou**
  
  Assistant 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.

- **Demetra Pitta-Pantazi**
  
  Assistant Professor
  
  Development of mathematical thinking, representations in mathematics, symbols as processes and concepts, intuitive rules in mathematics.

- **Zelia Gregoriou**
  
  Assistant 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.

- **Stavroula Tsiplakou**
  Assistant Professor
  Syntax, semantics, pragmatics, language acquisition, critical literacy, sociolinguistics.

- **Nicos Valanides**
  Associate Professor
  Teacher training, methodology of teaching and curricula for science education, development of logical and scientific thinking, and development of scientific attitudes and appropriate educational interventions and environments.

- **Zacharias Zacharia**
  Lecturer
  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.
Postgraduate Programmes

The Psychology Department currently offers two postgraduate programmes leading to Master and Doctoral degrees in the areas of

- Educational Psychology, and
- Cognitive, Developmental, and Educational Psychology.

Completion of the programme in Educational Psychology results in a Master degree. Students who enroll in the programme have the option to follow either a research, theoretical track, which entitles them to continue their studies at a Ph.D. level, or a professional practice track which allows them to register and work as professional educational psychologists. The basic requirement for admission to the programme is a Bachelor's degree in Psychology or Education.

Completion of the programme in Cognitive, Developmental, and Educational Psychology results in a Doctoral degree. A Master's degree in Psychology or Educational Psychology is required for admission. Students who enroll in the programme have the option to specialize in one of the three areas.

According to University of Cyprus regulations, the programmes are supervised by the Coordinator of Postgraduate Programmes (C.P.P.) of the Department who is appointed by the Chairperson of the Department. The Coordinator chairs a three-member committee, the members of which are also appointed by the Chairperson of the Department.

Required Documents for Admission

- Completed Admission Form.
- Biographical note (CV).
- Copies of university degrees from accredited institutions of higher education.
- Copies of transcripts.
- Brief report on personal goals and research interests (2-3 pages).
- Certificates and/or other documentation which prove fluency in the English language.
- Names and addresses of three (3) university professors from whom the candidates must request that formal letters of recommendation be sent directly to the Coordinator of Postgraduate Studies of the Department of Psychology. The Department may request additional confidential information.
- Any other documentation which the candidate deems necessary to strengthen and further support his/her application for admission, such as articles, research reports, academic distinctions, and any other relevant information.

MASTER DEGREE IN EDUCATIONAL PSYCHOLOGY

Description of the Programme

This is a three-year Master Programme (180 ECTS) which includes a Supervised Clinical Practicum (60 ECTS). The Supervised Clinical Practicum is a one-year programme that – upon completion – enables graduates to register and obtain a job permit in accordance with the Cypriot Law for Professional Psychologists. Graduates of the Master's Programme also have the option to apply for the Ph.D. Programme.

Structure of the Programme

The theoretical component of the Master's Programme includes 10 courses (a total of 120 ECTS) from the following areas:
Compulsory Courses
PSY 605 Psychometrics 7.5 ECTS
PSY 606 Cognitive Science 7.5 ECTS
PSY 619 Intelligence: Development and Evaluation 7.5 ECTS
PSY 788 Advanced Research Methods 7.5 ECTS
Total: 30 ECTS

Elective Courses
Students are required to select courses which correspond to 90 ECTS and which include at least one course from each area (Educational, Developmental, Cognitive). Each elective course corresponds to 7.5 ECTS. The class load includes class attendance of three hours per week, studying for exams, and assignments according to the subject and the goals of each course. One of the elective courses could be PSY 689 Independent Study.

COGNITIVE PSYCHOLOGY
PSY 616 Mental Representations
PSY 620 Learning and Cognition
PSY 706 Neurophysiology
PSY 718 Psychology of Reading
PSY 719 Topics in Neuroscience
PSY 720 Perception

DEVELOPMENTAL PSYCHOLOGY
PSY 630 Current Theories of Human Development
PSY 637 Psychosocial Development
PSY 642 Developmental Psychopathology
PSY 707 Family and Child Development
PSY 715 Language Development and Language Disorders

EDUCATIONAL PSYCHOLOGY
PSY 601 Legal, Ethical and Professional Topics in Educational Psychology
PSY 603 Child and Adolescent Psychopharmacology
PSY 610 Psychology in Education
PSY 614 Psychological Interventions in School
PSY 617 Counselling Psychology
PSY 705 Assessment of Children and Adolescents
PSY 708 Analysis and Modification of School Behavior
PSY 714 Psychological Interventions in the School (Prerequisite PSY 605)

Supervised Clinical Practicum
During the one-year supervised clinical practicum, students are assigned to an accredited public or private Psychological Services Centre. The Supervised Clinical Practicum is completed in two phases. Phase 1 (about 600 hrs) takes place during the fifth semester and students have the option of attending courses at the same time. Phase 2 (about 1000 hrs) takes place in the student’s last semester; it is considered full-time and it is not expected that there would be time available for attending any other classes.

During phase 1, students observe the work of experienced psychologists and learn methods, tools and practices. During phase 2, students are expected to take on cases under supervision. In addition, weekly meetings are scheduled for the presentation and discussion of individual cases. Each phase is accredited with 30 ECTS (PSY 698 Seminar in Clinical Practicum I, PSY 699 Seminar in Clinical Practicum II). Students are supervised by experienced practitioners and the coordinator of the practicum, who is also the instructor of the seminars.

Academic Track
Students who are not planning to register and work as professional educational psychologists may complete the Master Programme without the Clinical Practicum, in order to apply for entry to the Ph.D. Programme in Cognitive, Developmental, and
Educational Psychology. In this case, they are required to complete 75 ECTS in courses in the area of preferred specialization as well as a Master’s Thesis (45 ECTS). Admission to the Ph.D. Programme is not automatic; candidates must apply according to the Programme’s regulations.

**Master Thesis**

The completion of a Master Thesis is mandatory for students in the academic track and optional for students in the professional track. The Master Thesis is supervised by a faculty member of the Department. It is completed in two semesters as follows: PSY 798 Master Thesis I (15 ECTS) and PSY 799 Master Thesis II (30 ECTS). Students in the professional track who choose to complete a Master Thesis are exempted from four elective courses which are from a different area (30 ECTS). They are accredited with a total of 45 ECTS and therefore, need more ECTS to graduate than students who do not complete a Master Thesis. The Master Thesis option is generally for students who are interested in continuing their studies to the Ph.D. Level.

**PH.D. IN COGNITIVE, DEVELOPMENTAL AND EDUCATIONAL PSYCHOLOGY**

**Aim of the Programme**

This graduate programme leads to a Ph.D. Degree. Applications are accepted from students who have already acquired a Master’s Degree. The programme requires the completion of courses which correspond to 45 ECTS. The courses (7.5 ECTS each) are given below:

**Required Courses (15 ECTS)**

- PSY 619 Intelligence: Development and Evaluation
- PSY 788 Advanced Research Methods

**Elective Courses (30 ECTS)**

(Four of the following courses)

- PSY 616 Mental Representations
- PSY 617 Counselling Psychology
- PSY 620 Learning and Cognition
- PSY 651 The Development of Scientific Theories
- PSY 661 The Nature of Sciences and Cognitive Change
- PSY 706 Neurophysiology
- PSY 707 Family and Child Development
- PSY 710 Advanced Seminars in Cognitive, Developmental and Educational Psychology
- PSY 715 Language Development and Language Disorders
- PSY 718 Psychology of Reading
- PSY 719 Topics in Neuroscience

**Number of Entrants and Entry Process**

There are usually about 5 openings for the doctoral degree and 10 openings for the master degree each year, which are announced annually. The announcement takes place at least 6 months prior to the start of the academic year. The applications are examined by the Postgraduate Programme Committee, which submits a proposal to the Departmental Board. The decisions of the Department are implemented only after approval of the Faculty Board.

**Entry Criteria**

- Master degree
- Student performance as indicated in the transcript of the first degree, and especially the grades in the courses relevant to the subjects.
- Recommendation letters
- Distinctions, awards, etc.
- Personal interview (if necessary).
Completion of the Ph.D. Programme
The following are required for the Ph.D. degree:

1. Successful completion of subject courses and seminars, which correspond to 45 ECTS.
2. Successful performance on a comprehensive examination according to the internal regulations of the Department.
3. Submission and successful defence of a research proposal.

Course Descriptions

PSY 601 Legal, Ethical and Professional Topics in Educational Psychology (7.5 ECTS)
The psychologist’s ethical code will be discussed in regard to applied psychology. 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 organization of Educational Psychology as a field.

PSY 603 Child and Adolescent Psychopharmacology (7.5 ECTS)
Basic psychopharmacology with special emphasis on substances which are 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 Introduction to Multivariate Statistics (7.5 ECTS)
The course is designed to provide an integrated, in-depth, but 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 analysis, preparing data for analysis, performing the analysis with SPSS, interpreting output and presenting results of psychological research. This course will provide an overview of some of the most common multivariate methods, namely: factor analysis, analysis of variance and covariance, multivariate analysis of variance and covariance, discriminant function analysis, multiple and logistic regression and cluster analysis.

The course will strongly emphasize the applications of multivariate methods, rather than their theoretical derivation. All multivariate procedures will be discussed, analyzed, and interpreted in practical manner.

PSY 605 Psychometrics (7.5 ECTS)
This course is an overview of psychological tests and test construction, psychometric theory of intelligence, educational achievement, personality assessment and specific symptom assessment. Focuses on how to develop the assessment question and select the strategies and measures to answer it. Examines impact of cultural diversity on assessment. Identifies strategies to screen student populations for common issues, such as learning difficulties and emotional disorders. Includes topics on testing specific populations and for specific problems, and how test materials are integrated with clinical interviews and other assessment data.

PSY 606 Cognitive Science (7.5 ECTS)
One of the most important intellectual developments of the past few decades has been the birth of an exciting new interdisciplinary field called cognitive science. Researchers in psychology, linguistics, computer science, philosophy and neuroscience realized that they were asking many of the same questions about the nature of the human mind and that they had developed complementary and potentially synergistic methods of investigation. The word cognitive refers to perceiving and knowing. Thus, cognitive science is the science of mind. Cognitive scientists seek to understand perceiving, thinking, remembering, understanding language, learning, and other mental phenomena. Their research is remarkably diverse.
It includes, for example, observing children and adults, programming computers to do complex problem solving, analyzing the nature of meaning, and studying the principles of neural circuitry in the brain. Cognitive science is best conceived of as a broad interdisciplinary field that draws primarily on psychology, philosophy, linguistics, artificial intelligence, and neuroscience. The disciplines are to some extent distinct in their methods, theories and results, yet they are strikingly similar in their core questions and in having a computational, or information processing, view.

**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 on human development and learning in order to apply accumulated 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 School 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 in Reading Disabilities (7.5 ECTS)**
This course is offered to both Master’s 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 it relates to current practices; overview of psychological processes in learning to read; relationships among language processes, intellectual processes, and reading processes in both 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 616 Mental Representation (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 for the function and potentialities of the system.

The problem of representations is mainly 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 617 Counseling Psychology (7.5 ECTS)
This course aims to present the major counseling theories and the corresponding methods and techniques. More specifically, the following theories are critically discussed: Psychoanalytic (Freud), Neo Freudian/ego-psychological (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 aims to inform students of 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. Students will also be asked to participate in small-scale experiments for practical experience with the models taught.

PSY 620 Learning and Cognition (7.5 ECTS)
The content of this course will include selected 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, discussing, and extending previous research.

PSY 630 Current Theories of Human Development (7.5 ECTS)
The main theories of human development from conception to death are presented. Intra-individual and inter-individual effects on biosomatic, cognitive, emotional and social development are discussed.

PSY 637 Psychological Development (7.5 ECTS)
This course examines issues of social and emotional development such as attachment, friendships, roles in a team, fears and related reactions.

PSY 642 Developmental 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 support of problem behaviours. Scientifically based treatments for these disorders will also be discussed.

PSY 651 The Development of Scientific Theories (7.5 ECTS)
This course focuses on the nature of scientific theories and examines issues such as the process of discovery and the verisimilitude of scientific theories, the role of experimentation, the sociology of scientific theory (from other thought processes).

Epistemological issues related to scientific theories, such as their validity and their correspondence with reality, as well as realism in science will also be discussed. Different scientific approaches, as they are revealed through the history of the sciences, will be examined.

PSY 652 Preventative Interventions at 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 653 Cross-Cultural Issues in Psychology (7.5 ECTS)
The course reviews the theory and research on the social, cognitive and emotional development of minority children. The emphasis will be on applying this knowledge to the context of Cyprus society and the problems facing students and families who are in Cyprus as immigrants. The course will also focus on other social groups who may the focus of discrimination and prejudice.
PSY 661 The Nature of Sciences and Cognitive Change (7.5 ECTS)
This course builds on PSY 651 and emphasizes the issues related to specific historical advancements in sciences, as they are depicted in authentic sources describing the scientific activities of prominent scientists. Through an in-depth analysis of these historical sources, the development of scientific ideas and methods of investigation will be revealed. The main objective is to focus on the ways scientists understand and face the different methodological and philosophical problems that are related to the ongoing scientific enterprise.

PSY 705 Child and Adolescent Assessment (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; as well as 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 707 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 family function will be 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 will also be presented.

PSY 708 Analysis and Modification of School 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 709 Advanced Topics in Educational Psychology (7.5 ECTS)
The course is an advanced seminar with the goal of refining and deepening students’ understanding of theoretical, applied and research areas of Educational Psychology. The specific content will vary according to the instructor who will be a distinguished visiting professor who will offer a curriculum based on his/her expertise.

PSY 710 Advanced Seminars in Cognitive, Developmental, and Educational 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 than the classroom structure permits. This pursuit may take the form of directed reading, library search, and/or preparation of a formal publishable paper.

PSY 714 Psychological Interventions in the School 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 across the Lifespan (7.5 ECTS)**
The human language is one of the most dynamic and complex functions. The purpose of this advanced course is to discuss the theoretical and scientific bases for language acquisition and development and the resulting disorders due to 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 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.

**PSY 719 Topics in Neuroscience (7.5 ECTS)**
An important problem in Cognitive Science refers to the way knowledge is represented in the brain and mind. The study of this problem requires previous knowledge of the basic methods of knowledge representation, such as propositional representation, semantic nets, frames, the distributed representations of neural networks, etc. The comprehension of these methods, as well as their critical appraisal, require knowledge of both symbolic logic and basic connectionist theory. This course aims to introduce the postgraduate student to the fundamentals of symbolic logic and connectionist theory and discusses the various means of knowledge representation.

**PSY 720 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 788 Advanced Research Methods (7.5 ECTS)**
Research design, review of Regression analysis, basic functions of Structural Equation Modeling, review of Exploratory Factor Analysis, Confirmatory Factor Analysis (First-order CFA model, CFA models with Higher-Order factors), The Multitrait-Multimethod model, The Full Latent Variable model, Growth Modeling, Logistic Modeling, 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), Multiple-Group IRT theory.

**Research Interests of Academic Faculty**

- **Marios Avraamides**
  *Lecturer*
  Organization of spatial memory, spatial updating and orientation, ego motion perception, Reasoning in Virtual Environments.

- **Stelios N. Georgiou**
  *Associate Professor*
  Development in context, application of the systems theory, parental involvement, achievement attributions by parents and teachers.
• **Andreas Demetriou**  
*Professor*  
Life-span cognitive development, theory of intelligence relations between cognitive development and personality, relation between cognitive development and emotional intelligence, development of methods for the acceleration of cognitive development.

• **Irene - Anna Diakidou**  
*Associate Professor*  
Comprehension and learning from text, Knowledge acquisition and conceptual change, creativity.

• **Demetris Natsopoulos**  
*Professor*  
Language and communication, Neurobiology of language, animal communication, speech perception, Syntax and semantics, Language development in children.

• **Georgia Panayiotou**  
*Lecturer*  
Emotion and cognition, psychophysiology, self/focused attention, disruptive behavior disorders in children.

• **Timotheos Papadopoulos**  
*Assistant Professor*  
Reading development and acquisition of reading skills, reading difficulties and subtypes, cognitive profiles of poor readers, diagnosis and remediation, attention and planning deficits.

• **Athanasios Raftopoulos**  
*Associate Professor*  
Epistemology, Philosophy and History of Science, Cognitive Science, Philosophy of Mind.

**Contact Persons**

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Tel.: 22892198
Faculty of Social Sciences and Education

Department of Social and Political Sciences
General Information

The Department of Social and Political Sciences promotes research and knowledge in the fields of Sociology and Political Science. It offers undergraduate and postgraduate programmes in these two fields.

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.

Postgraduate Programmes

The postgraduate programmes of the Department are currently being reviewed and admission of new students is expected to take place in September 2007.

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.

- **Marios Constantinou**  
  *Lecturer*  
  Micro-macro linkages between contemporary social theory and constitutionalism under post-colonial conditions in ethnically divided societies; phenomena of polycentric legitimation of power by reference to subsystems; sociology of culture with special interest in the management of post-modern challenges from ethnic diasporas in the European periphery.

- **Kyriakos Demetriou**  
  *Associate 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.

- **Maria Hadzipavlou**  
  *Assistant Professor*  
  Conflict Resolution – ethnic and international conflict with an emphasis on Cyprus. The comparative application of the "Linkage model" at macro and micro levels on multi-ethnic societies which experience stability and others which have not resolved their differences. The role of narrative as a tool in conflict resolution. The role of feminism and gender in understanding politics – a comparative approach in European and non-European societies. Gender and conflict and the exclusion of women from the negotiation process in Cyprus, Israel and Ireland.

- **Joseph S. Joseph**  
  *Associate Professor*  
  Holder of Jean Monnet Chair. International Relations and European Integration with emphasis on issues and aspects related to Cyprus. Focus on the domestic setting and the international implications of the Cyprus Problem and the relations of Cyprus with the European Union. Other research interests in the areas of International Law, Foreign Policy and International Organizations.

- **Savvas Katsikides**  
  *Associate Professor*  
  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.

- **Caesar V. Mavratsas**
  Associate Professor
  The social construction of ethnic and national identity. The comparative-historical analysis of nationalist ideology, with an emphasis on Cyprus and Greece. The distinction between the production and the consumption of ideology. The internal constitution of the Greek Diaspora. The economic culture of ethnic groups in the USA. The formation and intergenerational evolution of Greek-American economic and political culture. Specialized areas in political sociology include civil society and relations of patronage. The sociology of knowledge, with an emphasis on the consciousness of everyday life.

- **Costas Melakopides**
  Associate Professor
  The Role of Middle Powers in International Politics, Theory and Methodology of International Relations, Principles of International Ethics, Canadian Foreign Policy, Greek Foreign Policy, Greek-Turkish Relations and the Cyprus Problem with an emphasis on its legal and ethical dimensions and Cyprus - EU relations.

- **Yiannis Papadakis**
  Associate 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**
  Assistant 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**
  Lecturer
  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 19th and 20th centuries. Other research interests in the areas of theories of the state and of social classes, civil society and social movements.
  e-mail: comel@ucy.ac.cy

**Coordinator of Postgraduate Studies**

Kyriakos Demetriou
Tel.: 22335066, ext. 16
e-mail: k.demetriou@ucy.ac.cy

**Department Administrators**

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Fax: 22342086
Introduction

The science of Economics studies the behaviour of human beings both as individuals and as organised society. As individuals we continuously face economic problems, such as whether and how much to save, what goods and services to purchase, and how to increase and use our income to satisfy the multitude of our economic needs. Every society faces a continuously changing international economic environment and has to take economic decisions such as entering into trade alliances or participating in an economic union, like the European Union. It also faces economic problems at home such as inflation, unemployment, balance-of-payments disequilibrium; and economic challenges such as trade alliances and economic unions. A nation's effective solution to these problems determines its standard of living and consequently it’s ranking in the international community.

Understanding the economic behaviour of the individual and the basic principles that govern the functioning of a modern economy enables the economist to evaluate economic indicators and information correctly and to make rational decisions. With such knowledge the economics graduate can pursue a career in civil service, banking, education, or research and advance to an important position in the public or private sector.

Our Department strives to offer high quality graduate programmes that teach the state of the art in economics in order to allow its graduates to compete effectively with the graduates of the best foreign universities.

Aim of the Department

The aim of the Department is to advance economics at the national and international level. In particular, the objectives of the Department are as follows:

(a) Equip students with qualifications that make them attractive to employers in Cyprus and which are comparable to those of the best universities abroad.

(b) Engage in research with a view to producing results of high academic standards.

(c) Set the standards for the discussion of economic issues and appropriate economy policy decisions in Cyprus.

The Department's teaching philosophy is to encourage students to study economic issues in depth and with independence of mind. For this reason the emphasis in the teaching programme is to help students develop strong analytical skills and acquire the ability to critically assess economic arguments. We pursue these objectives through a rigorous teaching programme covering mainstream subjects based on contemporary methods of economic analysis.

The teaching and research programme of the Department is also concerned with economic issues of interest to Cyprus. The objective is to provide a constructive framework for scientific investigation of such problems. We believe that a high international profile of the Department will contribute to resolving local problems. The Department aims at becoming a centre for thorough study of economic issues concerning Cyprus - a centre that will provide results that may serve the Government and other local institutions to reach appropriate economic policy decisions.

Research at the Department

We believe that research of a high academic standard is necessary to raise the international profile of the Department. Members of staff are strongly encouraged to undertake research both individually and by pooling their resources in teams and through collaborations with academics abroad. In this respect
the Department has created the conditions required for research of the highest academic standard, such as the establishment of adequate research facilities (library, computers, databases etc.), encouraging exchange visits with academic institutions abroad, and the participation in, and organisation of, international conferences. Furthermore the Department facilitates national and international dissemination of research output through a discussion paper series.

All members of the academic staff are actively engaged in research on topics of local and international interest. Emphasis is placed on producing results of high academic standard, publishable in reputable academic journals. Attention is also focused on the investigation of issues pertaining to the Cyprus economy and its relationship with the European Union. The researchers in the Department collaborate with researchers in top universities and research organisations overseas like University College London, Institute for Fiscal Studies, Tilburg University, University of North Carolina, Penn State University, University of Illinois, Tufts University, Vanderbilt University, Carnegie-Mellon University, and others.

The research agenda of Department faculty covers a broad range of topics in theoretical and empirical economics and in econometrics. An important debate in the international literature examines the mechanisms that lead to sustainable economic growth. Members of our faculty contribute to this research programme with the use of sophisticated econometric methods to identify the factors that lead to economic growth. Identifying these factors is crucial in formulating the right policies to lift countries out of poverty and onto a path of sustained economic growth. Other topics in international economics that are being researched in the Department are the rate of convergence of European economics and international differences in prices of consumer goods.

Research in the field of international trade focuses on the following areas: (a) the effects of worker migration on welfare, real wages and public goods production, both in the country of origin and in the destination country; (b) economic aid to developing countries, its effects on welfare and employment, and identifying the most effective ways of providing aid; (c) the functioning of international markets in used goods and their contribution to consumer welfare; and (d) the creation of free trade areas and their impact on international trade flows.

Research on consumer economics includes the theoretical development and empirical application of demand systems for the analysis of consumer behaviour and welfare. These systems are used to evaluate the impact on households and their constituent members of various policies such as taxation and child support schemes. In relation to producer behaviour there is ongoing research aimed at the theoretical and empirical analysis of the effects of infrastructure and publicly financed capital on productivity. Other research in the area of firm behaviour examines strategic pricing and quality choice, competition issues, the determinants of exporting activity and productivity gains from exporting.

Research is also conducted on topics of special interest to Cyprus. Some representative topics include: (a) development of a macroeconomic model of the Cypriot economy for the purpose of analysis and forecasting; (b) productivity analysis of the various sectors of the Cyprus economy and comparison with EU and other countries; (c) the effectiveness of public expenditure; (d) the impact of the mass importation of used cars on the Cyprus market; (e) viability of the social security system; and (f) the competitiveness of the Cyprus tourist product.
The University library has a large collection of books in economics and econometrics and subscribes to a large number of journals. There are also time-series and cross-sectional economic data for Cyprus, European Union countries and the rest of the world. The Department has advanced computer hardware and software to support academic research by academic staff and graduate students. Study and research by undergraduate and graduate students benefits from a modern computer lab, maintained jointly with the department of Public and Business Administration. There are also several research programmes with external or internal funding in which graduate students can be employed during vacation periods for financial gain and work experience. All these create a fertile environment where graduate students can acquire skills and knowledge that enhance their employment prospects.

Master Programmes

Admission Requirements

In addition to the requirements described in the relevant University 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).

Applications to join the graduate programme of economics are considered on the basis of the following criteria:

a) university degree in a related field and academic performance
b) recommendation letters
c) interview, if the Department deems it necessary.

An undergraduate degree in economics is not necessary for these programmes. All programmes have been designed to accommodate students of diverse backgrounds, particularly those from technical fields such as mathematics, statistics and mechanics.

Degrees Offered

The Department offers the following three Master degrees:

1. Master Degree in Economic Analysis (MECA)
This degree is designed for students who plan to continue their studies for a Ph.D. degree.

2. Master Degree in Economics (MECO) and

3. Master Degree in Monetary and Financial Economics (MMFE)
The above two programmes are designed for students who do not intend to continue their studies for a Ph.D. degree.

General Programme 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.

All Master Degrees are awarded upon successful completion of at least 90 credit units (ECTS) in graduate courses. For the Master Degree in Economics and the Master Degree in Monetary and Financial Economics programmes, the completion of eight courses and a Master thesis is required. For the Master Degree in Economic Analysis programme the requirement is 10 courses or 7 courses plus a Master 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 Thesis (ECO 698 – 22.5 ECTS)**
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 Department Board. If work on the thesis extends beyond one semester students can register in ECO 600 Master Thesis (1 unit) in at most two subsequent semesters.

**MASTER IN ECONOMIC ANALYSIS**
The programme aims to prepare students to continue to a Ph.D. degree in Economics.

**Required courses (60 ECTS)**
ECO 601 Microeconomic Analysis I 10 ECTS  
ECO 602 Macroeconomic Analysis I 10 ECTS  
ECO 603 Statistics and Econometrics I 10 ECTS  
ECO 651 Microeconomic Analysis II 10 ECTS  
ECO 652 Macroeconomic Analysis II 10 ECTS  
ECO 653 Statistics and Econometrics II 10 ECTS

If ECO 601/602/603 are not offered they can be replaced with ECO 661/662/663 respectively.

**Electives Courses and/or thesis (30 ECTS)**
Students can choose 4 elective courses or 1 elective course plus Master Thesis.

ECO 604 Analytical Methods in Economics 7.5 ECTS  
ECO 605 International Trade 7.5 ECTS  
ECO 606 International Finance 7.5 ECTS  
ECO 610 Money, Banking and Financial Economics 7.5 ECTS  
ECO 611 Labour Economics 7.5 ECTS  
ECO 612 Industrial Organisation and Policy 7.5 ECTS  
ECO 613 Public Economics 7.5 ECTS  
ECO 641 Consumer Theory and Applications 7.5 ECTS  
ECO 643 Monetary and Financial Analysis 7.5 ECTS  
ECO 644 The Economics of Firm Financing 7.5 ECTS  
ECO 646 Monetary Economics 7.5 ECTS  
ECO 647 Economics of Uncertainty and Risk 7.5 ECTS  
ECO 673 Applied Microeconometrics 7.5 ECTS  
ECO 680 Topics in Financial Econometrics 7.5 ECTS

**Notes:**
1. Students may replace an elective course with a graduate course offered by other University Departments, following approval from the Department Board.
2. Students may replace an elective course with an undergraduate course offered by other University Departments, following approval from the Department Board.

**MASTER IN ECONOMICS**
This programme is designed for students who want to gain a deep understanding of economics in general without specializing in a specific area.

**Required courses (37.5 ECTS)**
ECO 661 Microeconomics 10 ECTS  
ECO 662 Macroeconomics 10 ECTS  
ECO 663 Econometrics 10 ECTS  
ECO 673 Applied Microeconometrics 7.5 ECTS

**Elective Courses (30 ECTS)**
Four courses as follows:

A. **At least three from:**
ECO 605 International Trade 7.5 ECTS  
ECO 611 Labour Economics 7.5 ECTS  
ECO 612 Industrial Organisation and Policy 7.5 ECTS
<table>
<thead>
<tr>
<th>Course</th>
<th>ECTS</th>
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<tr>
<td>ECO 613 Public Economics</td>
<td>7.5</td>
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<tr>
<td>ECO 641 Consumer Theory and Applications</td>
<td>7.5</td>
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<tr>
<td><strong>B. At least one from:</strong></td>
<td></td>
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<tr>
<td>ECO 606 International Finance</td>
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<tr>
<td>ECO 647 Economics of Uncertainty and Risk</td>
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</table>

**Master Thesis (22.5 ECTS)**

The thesis must be related to the specific program and must also satisfy the criteria specified above.

**MASTER IN MONETARY AND FINANCIAL ECONOMICS**

This programme is designed for students who want to gain specialized knowledge with the purpose of seeking employment in the areas of monetary and financial economics, either in the public or in the private sector.

**Required courses (37.5 ECTS)**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>ECO 661 Microeconomics</td>
<td>10</td>
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<tr>
<td>ECO 662 Macroeconomics</td>
<td>10</td>
</tr>
<tr>
<td>ECO 663 Econometrics</td>
<td>10</td>
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<tr>
<td>ECO 680 Topics in Financial Econometrics</td>
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</tbody>
</table>

**Electives Courses (30 ECTS)**

**A. Three courses from:**

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</tbody>
</table>

With Department approval, one of the above courses can be replaced with a course offered by the Department of Public and Business Administration or another University department. If the course corresponds to fewer than 7.5 ECTS students must additionally sign up for ECO 695, Research Workshop in Monetary and Financial Economics (1.5 ECTS).

**B. One course from:**

<table>
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</table>

**Master Thesis (22.5 ECTS)**

The thesis must be related to the specific program and must also satisfy the criteria specified above.

**Doctoral Programme**

**Admission Requirements**

a) Master degree in economics or related discipline

b) Fluency in the English language

**Programme Structure**

1. The Ph.D. programme corresponds to 240 ECTS.

2. Required coursework is 90 ECTS; the research component is 150 ECTS.

3. A student can be credited up to 60 ECTS for Master level courses taken at another university. Consequently, a minimum of three years are needed to complete the programme.

4. Each student must take at least 30 taught ECTS from University of Cyprus courses. These ECTS must be from elective courses (thus, ECO 601/602/603/651/652/653 are excluded).
5. Students who have passed their comprehensive examinations have the following additional responsibilities in each semester of their research and writing stages:

a) They must attend the weekly Departmental seminar series and the workshop in economic research. (At least 80% of these).

b) They must submit a refereed report on a seminar series paper of their choice.

c) They must present their research in the workshop in economic research. (Students who register for the 15 unit research stage are exempt from this requirement.)

The director of graduate studies will be responsible for overseeing doctoral students' completion of these requirements.

Elective Courses

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<thead>
<tr>
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<tbody>
<tr>
<td>ECO 604</td>
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<td>7.5</td>
</tr>
<tr>
<td>ECO 605</td>
<td>International Trade</td>
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</table>

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

Comprehensive Examination in Economic Analysis and Econometrics

The purpose of the comprehensive examination is to test whether the student has acquired the basic knowledge and skills that are expected of every economist. The syllabus for this examination has been designated by the Department and is updated periodically. The comprehensive examination is offered in June and consists of three self-contained parts: Microeconomic Analysis, Macroeconomic Analysis and Econometrics. Each part is graded blindly and independently by a committee designated by the Departmental Board. A grade of 'satisfactory' or 'not satisfactory' is awarded. Students can retake the examination parts in which they have failed in September and must pass the entire comprehensive examination by the 5th semester of their studies. A full explanation is provided in the guidelines for the comprehensive examination of the Department.

Defence of Research Proposal

By the end of the 6th Semester students are required to have prepared and successfully defended their research proposal. The Department Board, following a substantiated recommendation by the student's advisor, can grant extension of this deadline. The committee examining the thesis proposal consists of three members proposed by the student's advisor and appointed by the Departmental Committee of Graduate Studies. The committee is chaired by the student's advisor.
Defence of the Thesis (before a five-person examination committee)

The composition of the committee and the examination procedures are described in the University regulations for postgraduate studies.

1. The Examination Committee’s composition is determined by the Department’s Graduate Studies Committee after a recommendation by the candidate’s advisor. The Examination Committee is chaired by a Department faculty member other than the advisor.

2. The candidate presents the dissertation in an open lecture lasting 30-45 minutes and then responds to questions by Examination Committee members. The candidate must be in a position to defend his/her findings, demonstrate the originality of the research project and explain any deviations from existing findings in related subjects.

3. Upon completion of the defence, the Examination Committee meets privately to determine whether: (i) to accept the thesis as is; (ii) to accept the thesis subject to some revisions to be undertaken by the candidate; or (iii) to reject the thesis. In case (ii), the candidate’s advisor is responsible for overseeing the successful completion of the revisions; the Committee does not meet again. In case of rejection, the Committee may provide a deadline to the candidate for the submission of a significantly improved thesis on the same or a related topic. If the candidate wishes to work on an entirely different topic he/she must obtain permission from the Department and submit a new research proposal.

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, although the department also awards some grants.

Admission and Registration
The academic year consists of two semesters and student registration takes place during the first week of each semester. Attendance is compulsory for all courses. Students are expected to complete their graduate studies in three semesters but this can be extended to a maximum of six semesters for full-time students or eight semesters for part-time students. The total time for the completion of a Ph.D. degree cannot exceed seven years for full-time studies or eight years for part-time studies. Also in exceptional circumstances students can be eligible for temporary leave of absence for a maximum of two semesters. Students applying for leave of absence 'for personal reasons' must consult the Student Welfare Officer of the University.

Each student of the Department has a member of teaching staff as her/his academic advisor. Academic advisors hold meetings with their tutees, advise them on all matters relating to their studies, oversee their academic progress and confirm that their choice of courses is in agreement with the degree requirements. Students are expected to consult their academic advisors regularly throughout their studies and keep her/him informed of their academic progress.

Students are required to complete and submit to the Academic Affairs and Student Welfare Service the course selection form within the first two weeks of the semester. They are responsible for selecting their semester courses and for consulting their advisor to confirm that their selection satisfies the formal degree requirements. Full-time and part-time enrolments are available to master’s students. Part-time students register for a maximum of 27 ECTS per semester until they satisfy the course requirements of their degree. Students can withdraw from a course and/or select more courses during the first three
weeks of the semester. Withdrawal from a course before the seventh week of the semester is also possible; in this case however this will appear in the course transcript.

Description of Courses

**ECO 601 Microeconomic Analysis I (10 ECTS)**
The course will begin with a review of the classic theories of consumer and producer behavior and proceed with 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 602 Macroeconomic Analysis I (10 ECTS)**
This course reviews the traditional “workhorse” models of Macroeconomics and surveys recent developments in this exceptionally active field. Models of income, interest rate, price level, exchange rate, and balance of payments surplus/deficit determination are reviewed. New theoretical developments involving the microeconomic foundations of macro models, inflation and unemployment, growth and real business cycles are considered.

**ECO 603 Statistics and Econometrics I (10 ECTS)**

**ECO 604 Analytical Methods in Economics (7.5 ECTS)**

**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 puzzles in international economics and the theories that attempt to explain these. Review of the properties of the international business cycle and introduction to international real business cycle theory, with the goal of understanding international co-movement of macroeconomic variables and synchronization across national economies. A look at international relative prices, including the study of long-run determinants of real exchange rates and an analysis of the related issues of Purchasing Power Parity and the Law of One Price, with the goal of understanding segmentation of international markets and the evidence for international price convergence.

**ECO 610 Money, Banking and Financial Economic (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 641 Consumer Theory and Applications (7.5 ECTS)
The objective of this course is to provide comprehensive knowledge of consumer theory with emphasis on the use of econometric techniques and data for the empirical analysis of consumer behaviour at the individual and aggregate level. Following a brief review of the fundamental principles of consumer theory (preferences and constraints, optimisation and duality) the course will focus on demand analysis as a tool for studying behavioural and welfare aspects of consumer theory. Separability, aggregation, dynamics and participation will also be examined. The last few lectures of the course will concentrate on topics drawn from applied demand analysis topics including externalities and public goods, cost of living indices and quality, equivalence scales, intrahousehold allocation and the analysis of tax and benefit reforms.

ECO 643 Monetary and Financial Analysis (7.5 ECTS)

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 I (10 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 (10 ECTS)

ECO 653 Statistics and Econometrics II (10 ECTS)

ECO 661 Microeconomic Analysis I (10 ECTS)
The course will begin with a review of the classic theories of consumer and producer behavior and proceed with 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 I (10 ECTS)
This course reviews the traditional “workhorse” models of Macroeconomics and surveys recent developments in this exceptionally active field. Models of income, interest rate, price level, exchange rate, and balance of payments surplus/deficit determination are reviewed. New theoretical developments involving the microeconomic foundations of macro models, inflation and unemployment, growth and real business cycles are considered.

ECO 663 Statistics and Econometrics I (10 ECTS)

ECO 673 Applied Microeconometrics (7,5 ECTS)
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)
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.

Research Interests of the Academic Staff

- **Elena Andreou**
  Assistant Professor
  Financial Econometrics with emphasis on volatility models, change-point tests, high-frequency financial data modeling, empirical asset pricing, market microstructure models, foreign exchange factor models, risk management methods, rank statistics, residual-based tests, sequential analysis, simulation methods, unit roots tests and forecasting.

- **Yannis Bilias**
  Associate Professor
  Econometrics, Statistics.

- **Paris Cleanthous**
  Lecturer
  Industrial Organization, Applied Microeconomics, Health Economics.

- **Sofronis Clerides**
  Assistant Professor
  Industrial organization, applied microeconomics and international trade.

- **Louis Christofides**
  Professor
  Labour Economics, Macroeconomics, Applied Econometrics.

- **Panayiotis – Flori Lyssiotou**
  Associate Professor
  Interhousehold and intrahousehold behavior, empirical consumer demands analysis, static and dynamic demand systems, adult equivalence scales, consumer price indices, welfare measures, indirect tax reform and distributional effects, household consumption and saving behavior.

- **Costas Hadjiyiannis**
  Assistant Professor
  International Trade, Game Theory, Industrial Organization, Microeconomics.

- **Christis Hassapis**
  Associate Professor
  Macroeconomics and International Finance, with special emphasis on portfolio choice and stockholding behaviour. More specifically portfolio choice under liquidity constraints; saving and stockholding behaviour; interest rate determination and forecasting;

- **Ioannis Kasparis**
  Lecturer
  Econometrics, Time series Econometrics.

- **Andros Kourtellos**
  Lecturer
  Econometrics, Economic Growth, Social Interactions, Resampling Methods, Hierarchical Models, Varying
Coefficient Models, Projection Pursuit Regression, Semiparametric Models.

- **Theofanis P. Mamuneas**
  Associate Professor
  Applied Microeconomics and Econometrics and Public Economics; Infrastructures, R&D Spillovers and Productivity; Growth.

- **Michael S. Michael**
  Professor

- **Panos Pashardes**
  Professor

- **Marios A. Zachariadis**
  Assistant Professor

**Contact Persons**

**Department Secretaries**
Anastasia Demetriou
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ECONOMICS RESEARCH CENTRE

Mission

The Economics Research Centre of the University of Cyprus (ERC) is an independent nonprofit research institution dedicated to high quality policy oriented research in economics. While emphasis is placed on subjects concerning the Cyprus economy, research at 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 subjects of wider economic interest and publish articles in international academic journals.

In conclusion, the ERC aims to fill the gap caused by 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 five areas:

Public Sector

Research in the Public Sector examines all aspects of public economics with a focus on fiscal policy and the wider role of government in the economy. Current research interest at ERC focuses on tax reform and fiscal harmonisation with the European Union, the adequacy of the social security system and the productivity of the public sector.

Corporate Sector

The Corporate Sector investigates the behaviour of firms and the role of institutions in enhancing economic efficiency, including corporate taxation, regulation, infrastructure and other links. The current research agenda at ERC includes the international competitiveness of the Cyprus tourist product and the productivity of the banking sector in Cyprus.

Household Sector

The Household Sector studies the behavioural and welfare aspects of household economics. Inequality and poverty, the labour supply decisions of households, the cost of children and the adequacy of state support and public provision (health, education etc.), wage discrimination between men and women and between employees in the public and private sectors are among topics of current research interest.

Model of the Cyprus Economy

A priority of research at ERC is the construction of a model of the Cyprus economy with a view to analysing macroeconomic problems and making short- and medium-term forecasts of main economic
indicators like the growth rate of GDP, unemployment, inflation, fiscal and balance of payments deficits, etc. A further objective is to use the model to develop economic policies on the interest rate, government spending, etc.

**Other Research Projects**
This sector undertakes economic research on specialised topics. At present research in this sector focuses on European economic integration, energy policy and the wage and employment effects of foreign workers.

**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 Advisory Council.

- The Academic Council oversees the organisation and execution of research and consists of the project co-ordinators and the research fellows of ERC.

- The Advisory Council has funding responsibilities and advises the Director of the ERC on selecting research topics of interest to Cyprus. It has an institutional membership representing public and private economic research interests.

**Director**
Professor Panos Pashardes

**Secretariat**
Angela Shekersavva
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Introduction

The modern business environment is being transformed. Markets are becoming global and intensely competitive, organizations are merging, and regulatory barriers are falling. Information technology creates a virtual business environment where services are rendered, transactions take place, and deals are concluded more efficiently. The 1980’s and 1990’s have witnessed the transformation of the industrialized nations from manufacturers of goods to producers of services. Many advanced developing countries are closely following this lead, while other developing countries are gradually filling the gap in the manufacturing processes.

The only constant in today’s environment is change itself. The astute managers who anticipate, comprehend, adapt and even proact in a timely fashion in this dynamic environment will lead their enterprises to success. Those who are unable to cope with change face real threats to the survival of their organization. The adage "lead, follow or get out of the way" becomes particularly relevant for the managers of the 2000’s and beyond.

The Department of Public and Business Administration (PBA) aims to produce managers who will lead their enterprises and organizations through these exciting times. It intends to offer an integrated programme of postgraduate studies that will emphasize both breadth of understanding of the business environment, as well as depth in several functional areas. Based on the latest curricula of prominent European and North American academic institutions, it integrates internationally accepted management principles with sensitivity to the realities and priorities of the local and regional industries. The Master in Finance focuses on the use of powerful analytical and financial tools and the latest information technology for the support of the tactical and strategic goals of an enterprise.

The Master in Business Administration (MBA) is looking to take on board individuals with promising leadership potential and excellent academic credentials, who will share knowledge and ideas, actively contribute to the programme, and shape the future of business practice.

Goals of the Department

The Department’s goal is to provide local and regional leadership in all aspects of Public and Business Administration, and to achieve international recognition as a centre of excellence in business education and research.

Research Mission

The faculty of the Department is committed to state-of-the-art research of local and international impact. The faculty members maintain close contacts with researchers at prominent Universities in Europe and North America. The research interests of the faculty are many and diverse.

Research in Finance covers several diverse aspects of financial management. Models for capital investment analysis and portfolio management in the face of uncertain or volatile market conditions are of central interest to our faculty. Studies range from global asset/liability management using complex interest rate contingent claims models, to stock market volatility, to the pricing of capital investment opportunities with embedded options, and synthetic securities. Information technology is viewed both as an asset used in the context of planning purposes and as a means for achieving the strategic goals of the financial manager.
Research in **Accounting** explores the use of accounting data to support the decision-making processes of managers, investors, bankers and manufacturers alike. Investment decisions of organizations, such as oil and gas companies or public utility services, are greatly affected by the expected cash flows to be generated by the organization from both operating and financing activities. Projections of future cash flows, as well as budgeting, management control and cost analysis can help substantially the planning of future investment decisions. Such information can be obtained from the analysis of accounting data. Current projects in the Department involve the analysis of both local industries and broader industrial sectors in an international setting.

Research in **Marketing / Management** covers various conceptual, methodological, and empirical issues evolving around the internationalization process of the firm, export stimulation and obstruction and organizational and managerial effects on the firm’s export behavior, the exporter-importer working relationship, distribution channels behavior, philosophical and epistemological aspects of organizational theory, post-rationalist approaches to organization design, the management of social reforms, interrelationships among behavioral constructs, environmental management, diffusion of innovations, family enterprises, and human resources development.

Research in **Management Science** has both methodological and problem-oriented goals. On the methodological side, there are ongoing projects 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. Novel computing technologies, such as parallel and supercomputer architectures, are used for the solution of business problems. Research is also conducted in such areas as service quality, efficiency and effectiveness of financial and banking institutions, and applications of neural networks in business problems.

The faculty maintain close contacts with researchers at prominent Universities in Europe, North America, and the region. Formal research collaborations are ongoing with faculties at Harvard University, University of Chicago, Columbia University, UCLA, the Wharton School of the University of Pennsylvania, the University of Southern California, University of Kansas, and the George Washington University in the United States, the Universities of Bocconi, Bergamo, and Calabria in Italy, the University of Vienna in Austria, Erasmus University in the Netherlands, the London Business School and the Imperial College in the United Kingdom, the University of Toronto in Canada, and others. Projects by Department faculty have attracted more than two million U.S. dollars from external sources including Digital Equipment International, the Bank of Cyprus and other Cypriot banks, the Mediterranean Campus Program of the European Union, other European Union Agencies and the Cyprus Research Promotion Foundation.

The goals of the Department include international research on the Cyprus financial and banking system with emphasis on a holistic analysis of the system rather than short-term operational problems of specific organizations. At present, research focuses on issues of risk assessment and management under interest rate uncertainty, financial markets analysis, management of banking information systems, improved accounting methods for debt management according to European Union standards, assessment of functional productivity and profitability of bank
branches, and the use of Artificial Intelligence in the pricing of derivative products.

The HERMES Centre on Computational Finance and Economics was established in 1993 and has been subsidized by the European Commission since 2000 as a Centre of Excellence. The cornerstones of the disciplinary approaches of the Centre’s research are: theoretical modeling, empirical data-driven research and the use of computations to support financial decision making.

Every two years, the Department organizes an academic conference on "Capital Markets Research." It has also organized or coorganized in Cyprus with other prominent Universities international conferences like the Annual Meeting of the Multinational Finance Society, Annual International Conference on Real Options, CRANET Conference on Human Resource Management, Meetings of the Euro Working Group on Financial Modeling, Applied Mathematical Programming and Modeling, Computational Statistics & Data Analysis.

Study and Research Facilities for Students

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

The University library receives all major European and North American journals and business magazines and books and is continually enriched. In addition, the library maintains databases with international financial and accounting information such as Datastream, Compustat, Global Vantage, CRSP, IBES, and the Wall Street Journal Index, which students can use for their research projects.

Postgraduate Programmes

The Department of Public and Business Administration intends to offer a complete range of postgraduate programmes at the Master (M.Sc.) and Doctoral (Ph.D.) level in all major business disciplines. At present, the Department offers the M.Sc. programme in Finance, and other Master, executive and Ph.D. programmes are under way. Students can already be admitted to the Ph.D. programme with a Finance, Accounting, or Management Science concentration.

The Department of Public and Business Administration offers the following two graduate programmes in Business Administration:

- The Master of Business Administration (MBA) Programme
- The Professional Master of Business Administration (PMBA) Programme

The MBA Programme is a one-year full-time programme geared towards individuals who are committed to developing their management skills and decision-making abilities in a fast-changing business environment. The Programme is expected to begin in September 2007.

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

Separate programmes for both the MBA and Professional MBA are offered in Greek and English. When applying to the programme candidates must declare their preference regarding the language of instruction. For more information please visit www.mba.ucy.ac.cy.
Admittance Criteria for the MBA Programmes (full and part time)

- Degree from a recognized academic institution or equivalent.

- The programme accepts students according to selection criteria that focus on work experience and prior academic performance.

- Priority will be given to applicants who have at least 3 years of full-time work experience and superior academic performance. GMAT or GRE exams will be considered as an additional qualification.

- Candidates who apply to the programme in English must demonstrate proficiency in English through one of the following: TOEFL, IELTS, GCE or equivalent, unless they hold a degree from an English speaking institution.

- Two recommendation letters from faculty members of Higher Education Institutions or people who are familiar with the work of the candidate.

- Applicants will be invited for a personal interview to assess their contribution potential to the programme.

Admittance Criteria for the other Postgraduate Programmes

The Department’s Board admits students to the postgraduate programmes after recommendation by the Postgraduate Studies Committee, which is headed by the Director of Postgraduate Programmes. Students must have completed a Bachelor Degree (or should be expecting to complete one by the start of the Master) with a general grade at least B. A Master Degree will be considered as an additional credential, and could lead to a limited number of course waivers. The applicants must know the English language at a satisfactory level. For example, they should have at least a B in the GCE O-Level in English language, or at least 600 in the TOEFL. In addition, it is preferable that they have a minimum of 600 in the GMAT, or 700 in the math section of the GRE.

M.Sc. PROGRAMME IN FINANCE

For the M.Sc. Programme in Finance, at least 90 units (ECTS) must be completed. The analytic programme by semester is shown on the following table.

**First Year**

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Course</th>
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<tbody>
<tr>
<td>2</td>
<td>PBA 515 Basic Accounting</td>
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<tr>
<td>7</td>
<td>PBA 521 Financial Theory</td>
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<tr>
<td>7</td>
<td>PBA 522 Investments</td>
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<tr>
<td>7</td>
<td>PBA 526 Financial Analysis and Capital Market Research</td>
</tr>
<tr>
<td>7</td>
<td>PBA 525 Options and Futures</td>
</tr>
</tbody>
</table>

**Spring Semester (30 ECTS)**

18 ECTS from the following list of courses:
- PBA 523 Advanced Quantitative Business Methods  6
- PBA 528 Advanced Capital Budgeting  6
- PBA 520 Managerial Economics or another suitable depth course  6

At least 12 ECTS from the following list of courses:
- PBA 524 Financial Modeling  6
- PBA 527 Theory and Methodology in Finance and Accounting  6
- PBA 529 Applications of Neural Networks in Business  6
- PBA 530 Seminar on the Cyprus Economy, Banking and Financial Markets  6
- PBA 532 Financial Optimization and Decision Analysis  6
- PBA 533 Bank Financial Management  6
- PBA 535 Seminar on the Theory of Derivatives  6
PBA 537 Theoretical Topics in Finance 6
PBA 538 Applied Topics in Finance 6
Other electives / depth courses**

Second Year

Fall Semester
Other elective/depth course** 6
Thesis 24

Note:
* Maximum waiver of one course may be granted according to the student’s prior experience.
** Elective courses are subject to approval by the Director of Postgraduate Studies. Courses are offered with at least four pre-registered students.

During the third semester of the M.Sc. programme, students must complete a 24 ECTS Thesis. The following rules apply:
a) Students select an Academic Thesis Advisor, who must be approved by the Departmental Board before the end of the first academic year, June 15 the latest.
b) By September 15, the Departmental Board will approve a three-member committee for the evaluation of the Thesis. The committee’s president for the defense of the Thesis cannot be the student’s Academic Advisor. One member of the committee can be an academic outside the Department or the University.
c) The Department expects an extended Thesis Research Proposal (5-10 pages), which will be submitted for approval and signature by the committee, by September 15 at the latest.
d) The Thesis is expected to be submitted to the three-member committee’s head, who will appoint the date when the Thesis will be defended in front of the committee (the latest by March 15). Under special circumstances the Postgraduate Studies Committee may grant an extension.

THE PROFESSIONAL MBA PROGRAMME

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

In order to graduate, students must complete a total of 90 ECTS units. A total of 49 ECTS units 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 20 ECTS units). A list of courses is available from the Department. Finally, the Applied Business Project (21 ECTS units) focuses on a real-life case within a corporate or government environment, and brings together teams of students with sponsor companies.

Structure of the Professional MBA Programme

First Year
Preparation Period (August)
MBA 501 Business Computer Fundamentals
MBA 502 Introduction to Accounting
MBA 503 Business Mathematics and Statistics

September - October
MBA 581 Business Economics 3.5
MBA 561 Leading and Managing Organizations 4

November - December
MBA 511 Financial Accounting and Reporting 4
MBA 546 Business Statistics 3.5

January - February
MBA 551 Marketing Management 4
MBA 541 Methods for Management Decisions 3.5
March - April
MBA 542 Managing Operations 3.5
MBA 521 Financial Management 4

May - June
MBA 522 Capital Markets and Investments 4
MBA 512 Managerial Accounting 3.5

Second Year
September - October
MBA 564 Strategic Management 3.5
MBA 562 Corporate Social Responsibility and Ethics 2
MBA 543 Managing Information Systems 2

November - December
MBA 563 Entrepreneurship 4
Elective Courses 4

January - February
Elective Courses 8

March - April
MBA 590 Applied Business Project I 4
Elective courses 4

May - August
MBA 591 Applied Business Project II 17
Elective Courses 4

Total 90

THE MBA PROGRAMME

The duration of the programme is twelve months and in order to graduate, students must complete a total of at least 90 ECTS units.

Courses equivalent to 49 ECTS units constitute the core curriculum, which 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 20 ECTS from a list of courses available from the Department, which covers all fields of business administration. The elective courses 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 organisation. 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.

The MBA Programme Structure

<table>
<thead>
<tr>
<th>ECTS</th>
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<tbody>
<tr>
<td>Preparation Period (August)</td>
</tr>
<tr>
<td>MBA 501 Business Computer Fundamentals 1</td>
</tr>
<tr>
<td>MBA 502 Introduction to Accounting 1</td>
</tr>
<tr>
<td>MBA 503 Business Mathematics and Statistics 1</td>
</tr>
<tr>
<td>September-October</td>
</tr>
<tr>
<td>MBA 511 Financial Accounting and Reporting 4</td>
</tr>
<tr>
<td>MBA 531 Business Economics 3.5</td>
</tr>
<tr>
<td>MBA 544 Business Statistics 3.5</td>
</tr>
<tr>
<td>MBA 561 Leading and Managing Organisations 4</td>
</tr>
<tr>
<td>November-December</td>
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<tr>
<td>MBA 521 Financial Management 4</td>
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<tr>
<td>MBA 541 Methods for Management Decisions 3.5</td>
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<tr>
<td>MBA 522 Capital Markets and Investments 4</td>
</tr>
</tbody>
</table>
MBA 543 Managing Information Systems 2
MBA 562 Corporate Social Responsibility and Ethics 2
MBA 564 Strategic Management 3.5

**March-April**

MBA 563 Entrepreneurship 4
MBA 590 Applied Business Project I 4
Elective Courses 8

**May-August**

MBA 591 Applied Business Project II 17
Elective Courses 12

**Elective Courses for the MBA and Professional MBA Programmes**

### Accounting

- MBA 513 Financial Analysis and Capital Markets 4
- MBA 514 Business Law 2
- MBA 515 Taxation 2

### Finance

- MBA 523 Options 4
- MBA 524 Bank Financial Management 4
- MBA 525 International Finance 4
- MBA 526 Strategic Capital Budgeting 4
- MBA 527 Risk Management 4

### Operations Management

- MBA 545 Service Management 4
- MBA 546 Supply Chain Management 4
- MBA 547 Quality Management 4
- MBA 548 E-Commerce 4
- MBA 549 Project Management 2

### Marketing

- MBA 552 Marketing Research 4
- MBA 553 Strategic Marketing 4
- MBA 554 International Marketing 4

- MBA 555 Marketing Communications 4
- MBA 556 New Product Development 2
- MBA 557 Sales Management 2
- MBA 558 Consumer Behavior 2

### Management

- MBA 565 Human Resource Management 4
- MBA 566 Leadership 4
- MBA 567 Managing Change 2
- MBA 568 Negotiations 2
- MBA 569 Creativity and Innovation 2
- MBA 570 International Business 2
- MBA 571 Multi-cultural Management 2
- MBA 572 Business Communications 2

**The Doctoral Programmes**

At present, the doctoral programme offers specializations in Finance, Accounting, and Management Science. The following refers primarily to the programme in Finance.

**DOCTORAL PROGRAMME IN FINANCE**

Students are expected to complete at least 90 ECTS of coursework for the completion 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 requirements by the end of the fifth semester at the University of Cyprus. Under special circumstances, the Departmental Board may approve extension to the end of the sixth semester so that the above requirements for Doctoral candidacy are fulfilled, but the comprehensive exams must be successfully

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completed by the end of the fifth semester. The Ph.D. degree is granted after successful completion 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.

Coursework

Doctoral students must take at least 28 ECTS of required coursework, at least 24 ECTS of methodology courses, and at least 38 ECTS of electives. The first two semesters of the doctoral programme are similar to those of the M.Sc. programme, as described earlier.

A. Required Courses (28 ECTS)
PBA 521 Financial Theory
PBA 522 Investments
PBA 525 Futures and Options
PBA 526 Financial Analysis and Capital Markets Research

B. Methodology Courses (at least 24 ECTS)
Two Econometrics Courses:
ECON 603 Statistics and Econometrics I
ECON 653 Statistics and Econometrics II

Probability Theory:
Graduate MAS 650 Probability Theory I or the two undergraduate MAS 151 Probability-Statistics I and MAS 252 Probability-Statistics II (MAS 252 can be replaced by one graduate econometrics course).

Stochastic Processes:
A graduate Stochastic processes course (or the undergraduate MAS 252 Stochastic Processes)

It is also expected that all students will have sufficient knowledge of computer programming (like C/C++, Matlab, SAS, SPSS). Holders of a Masters degree in a field similar to the doctoral programme may waive some coursework with the approval of the Department Council. It is expected that all doctoral students (according to their previous graduate studies) complete a minimum of 30-42 ECTS in 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 appoints the Advisor, according to the student-faculty common research interests. The results should be in the form of a written paper describing the original contributions of the student’s work. The student should complete the project by the third semester of studies and submit it for approval to a three-member faculty committee. The Faculty Advisor will preside on that committee. The Department’s Chairperson in coordination with the Advisor appoints the other two committee members. This project may fulfill requirements of another course, or count as an independent study. A student who has completed a Master thesis may waive this requirement.

Comprehensive Exam

Before entering doctoral candidacy, students should demonstrate their potential to produce knowledge. They must demonstrate adequate knowledge of their main and related fields and the relevant academic literature by successful completion of the comprehensive exam.

This exam (taken at the latest by the end of the fifth semester in the doctoral programme) must cover the areas:
• Major field of study

• 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 the Academic Committee (which must be approved by the Department Council) that administers the written exams. Every topic is graded by two faculty members. No faculty member may grade more than two topics for any student. A student must pass all topics to successfully complete the comprehensive exams. If a student fails in more than one topic, he must retake the exam in all topics. Doctoral students may sit for the exams a maximum of two times. If a student fails on one topic he may take the relevant exam on that topic once more. Exams are graded on a Pass or Fail basis, according to the recommendation of the Academic Committee. Students who (through their comprehensive exams) fail to demonstrate ability for successful doctoral research may be granted a Master degree (MA) following the Department’s recommendation.

Doctoral Candidacy and Dissertation Requirements

After formal entrance in doctoral candidacy, students are expected to concentrate their efforts on their dissertation research, which will initially result in a dissertation proposal in coordination with their Research Advisor. (Students who wish to change Research Advisor after the successful completion of their pre-dissertation research may apply to the Director of Postgraduate Programmes.) Usually doctoral students remain in candidacy for a period of two additional years. At the start of this period they 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. The Department Chairperson in coordination with the Research Advisor appoints this committee. The Research Advisor will be president of the committee. The proposal should contain a complete and detailed definition of the problem under investigation, a comprehensive synopsis of the relevant literature and the unanswered research questions, and should provide the relation between the existing literature and the proposed research as well as the expected new contribution. It should also provide evidence that the proposed project is feasible within a reasonable time frame, which can be demonstrated through partial completion of the proposed research and fulfillment of some intermediate goals.

The Dissertation

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

Doctoral Candidate’s Requirements

Doctoral students must take the Seminar Series (Colloquium) at least twice (PBA 541 and PBA 542).
While a student takes the comprehensive exams, he may register for PBA 890 (15 ECTS). While the doctoral candidate works on the dissertation research, he must complete at least 120 ECTS in four research courses: (PBA 895: 30 ECTS, PBA 896: 30 ECTS, PBA 897: 30 ECTS, and PBA 898: 30 ECTS). There are also the partial research courses PBA 881, PBA 882, PBA 883, PBA 884, PBA 885, PBA 886, PBA 887, and PBA 888 (15 ECTS each) for the student who elects to take courses (beyond those required) during the dissertation stages, or PBA 890 (comprehensive exams) during the first enrollment in a dissertation stage. If after the completion of 120 ECTS of dissertation courses the doctoral dissertation is not completed, the student may enroll in writing courses of 30 ECTS (PBA 791, PBA 792, PBA 793, PBA 794) or 15 ECTS (PBA 781, PBA 782, PBA 783, PBA 784, PBA 785, PBA 786, PBA 787, PBA 788).

**Sample Programme**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>First Year</strong></td>
<td>Same as in the Master</td>
<td>Same as in the Master</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td>Elective/depth and methodology courses (from the department, econometrics, mathematics, etc.)</td>
<td>30</td>
</tr>
<tr>
<td><strong>Third Year</strong></td>
<td>Fall Semester (30 ECTS)</td>
<td>Spring Semester (30 ECTS)</td>
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<tr>
<td></td>
<td>PBA 880 Research stage</td>
<td>PBA 884 Research stage</td>
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<td></td>
<td>PBA 881 Research stage</td>
<td>PBA 885 Research stage</td>
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<tr>
<td><strong>Fourth Year</strong></td>
<td>Fall Semester (30 ECTS)</td>
<td>Spring Semester (30 ECTS)</td>
</tr>
<tr>
<td></td>
<td>PBA 886 Research stage</td>
<td>PBA 887 Research stage</td>
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<td></td>
<td>PBA 888 Research stage</td>
<td>PBA 889 Research stage</td>
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<tr>
<td></td>
<td>PBA 781 Writing stage</td>
<td>PBA 782 Writing stage</td>
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</table>

**Postgraduate Finance Course Descriptions**

**PBA 515 Basic Accounting (2 ECTS)**
The scope of the course is to examine the use 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.

**PBA 516 Use of Software in Finance (3 ECTS)**
Databases and software packages useful to the financial manager/analyst of a private or public enterprise/organization are introduced. The course is directed towards new Master students. It covers databases (like Compustat/GlobalVantage, Datastream, CRSP, IDES), and software (like Matlab). It is graded with Pass/Fail.

**PBA 520 Managerial Economics (6 ECTS)**
The course covers a wide variety of topics to facilitate understanding of the wider economic environment of the corporation, 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.

PBA 521 Financial Theory (7 ECTS)
The course presents the theory of Finance Decisions and Corporate Policy. It covers contemporary methods of Capital Budgeting, Utility Theory, Risk and Uncertainty, Mean-Variance Choice, Capital Asset Pricing Models (like CAPM and Zero Beta CAPM), Roll's Critique, and the Arbitrage Pricing Theory (APT), an introduction to Option Pricing with implications for Corporate Policy, the Efficient Markets Hypothesis, Capital Structure and Dividend Policy, Corporate Restructuring, M&As, etc.

PBA 522 Investments (7 ECTS)
The course covers the basic principles of investment analysis and valuation. That is, how to price Financial Securities (such as Bonds, Stocks, Options, and Futures contracts) and how to determine which are undervalued. The emphasis is on Security Analysis and Portfolio Management in a risk-return framework. Security analysis is the attempt to determine whether an individual security is correctly valued in the market (i.e., it is the search for mispriced securities). Portfolio management is the process of efficiently combining securities into a portfolio tailored to the investor's preferences and needs, monitoring that portfolio, and evaluating its performance. The course covers the theory of investments, and provides knowledge of practical importance to anyone interested in becoming an investment professional or a sophisticated private investor.

PBA 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 practice 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.

PBA 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.

PBA 525 Options and Futures (7 ECTS)
The course studies the pricing and use of Derivative Securities (e.g., Options, Forward/futures contracts, Fixed-income Derivatives and Corporate Liabilities), i.e., financial instruments whose value depends on the price of other basic underlying variables (such as stock prices, indices, foreign currencies, or interest rates). The no-arbitrage pricing principle and its use in pricing forward and futures contracts and in deriving option pricing restrictions are first developed together with the Binomial-tree valuation approach and the Black-Scholes option-pricing model. Then, various extensions of the theoretical option models (adjusted for dividends and early exercise) are presented and various applications are provided, in (1) the pricing of options on Stock Indices, Currencies, and Futures; (2) Risk Management (e.g., hedging stock market, foreign currency and interest-rate risk exposure); (3) the pricing of options embedded in Corporate Securities (e.g., equity as an option on firm value, Callable Bonds, Warrants and Convertible Bonds); (4) the pricing of Fixed-income (interest-rate) derivatives (introduction only); and (5) the valuation of options embedded in real investment decisions.

PBA 526 Financial Analysis and Capital Market Research (7 ECTS)
The major objective of this course is to present a comprehensive analysis of financial information as an aid to decision making. While financial analysis serves many and varied purposes, its major usefulness is in making investing, lending and managerial decisions. Valid and competently assembled data may lead to good decisions; incomplete or distorted data will usually lead to bad decisions. Investing and lending decisions require the application of thorough analysis to carefully evaluated
data. They require, moreover, the ability to forecast, to foresee. Sound information is obtained by an understanding of the data from which it is derived as well as by the application. Foresight, which is essential to the assessment of opportunity and risk, is also rooted in understanding: understanding of the elements comprising the data and of the factors that can change them. The emphasis of this course is on: i) business analysis tools such as business strategy analysis, accounting and financial analysis, prospective analysis, i.e., forecasting and valuation; ii) applications, i.e., credit analysis and bankruptcy prediction, security analysis, corporate financing issues such as dividend policy and capital structure, mergers and acquisitions, and management communication; iii) international financial analysis; iv) contemporary issues in financial analysis. Special emphasis will also be placed on contemporary financial analysis issues that affect the Cyprus Stock Exchange and International Stock Exchanges.

PBA 527 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.

PBA 528 Advanced Methods of Capital Budgeting (6 ECTS)
The course initially covers the traditional methods of Capital Budgeting and their deficiencies. Then it focuses on issues of Investment Valuation with Flexibility and Optimal Exercise of Embedded Options for optimal organizational decisions under uncertainty and constant change. It places emphasis on the use of the Real Options methodology in both tactical and strategic decisions. The Stochastic Processes that describe uncertainty are introduced, and the real options methodology is applied through the use of Monte Carlo Simulation, Lattice methods, and other analytic and numerical solution techniques.

PBA 529 Applications of Neural Networks to Business (6 ECTS)
This course covers 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 practice the theory through a research project in Finance or Accounting.

PBA 530 Seminar on the Economy, the Banking System and the Financial Markets of Cyprus (6 ECTS)
In the seminar a wide range of topics relating 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 into the European Union. These developments prescribe the prospects and challenges of the economy and the financial system of Cyprus.

PBA 531 International Financial Management (6 ECTS)
Managing an international business or a business exposed to global competition requires the understanding of international financial instruments, markets, and institutions. The topics covered include: globalization and the multinational firm; international monetary system, the market for foreign exchange, international parity relationships and forecasting foreign exchange rates; international capital markets, including bond and equity markets; futures, options and swaps on foreign exchange and interest rates; managing and hedging foreign exchange and interest rate risk; international portfolio investments; global mutual funds and hedge funds; emerging market finance; capital market integration and liberalization, and the financial and real effects of market integration; financial crises and contagion.

PBA 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. Special emphasis is given to the solution of problems with the use of computers.

**PBA 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 the study of the existing banking environment, bank structure and problems, the course concentrates on the measurement and management of interest rate, credit, and currency risks. The course also studies the measurement and evaluation of bank performance, basic instruments and techniques, asset/liability management, new financial strategies, and integrated decisions for bank management.

**PBA 534 Financial Risk Management (6 ECTS)**
The aim of this course is to illustrate the use of financial theory and applied statistics in measuring and managing risks that multinational corporations and financial institutions are currently facing. 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.

**PBA 535 Seminar on Derivatives (6 ECTS)**
The course covers advanced topics in financial theory with emphasis on 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.

**PBA 536 Business Valuation (6 ECTS)**
The scope of the course is to cover the foundations of the different approaches and methodologies of business valuation. The material covered will include: the Income Approach; the Market Approach; the Asset-based Approach; the Real Options Approach; the needed research in business and industry data; Financial Statement Analysis & Ratio Analysis; Control and Acquisition Premium; Lack of Control Discounts, Illiquidity and Lack of Marketability Discounts; valuation of Partnerships and Limited Liability Companies; valuation of Intangible Assets.

**PBA 537 Theoretical Topics in Finance (6 ECTS)**
The course covers advanced theoretical topics in financial theory. Contents may differ according to the instructor.

**PBA 538 Applied Topics in Finance (6 ECTS)**
The course covers special and applied topics in finance. Contents may differ according to the instructor.

**PBA 541-546 Seminar Series - Colloquium (3 ECTS)**
The course introduces doctoral students (or advanced Master students) to contemporary research topics, with the attendance and active participation in presentations of original research, and presentation of critique and analysis of selected research. It is graded with Pass/Fail.

**MBA Course Description**

**Preparatory Courses**

**MBA 501 Business Computer Fundamentals (1 ECTS)**
The course teaches basic skills in the use of common software tools for data analysis, electronic communications, presentations, access to information resources (financial and bibliographic databases) on electronic networks. The main focus is on the use of electronic spreadsheets for data analysis to support quantitative decisions.
MBA 502 Introduction to Accounting (1 ECTS)
This course is designed to familiarize students with basic accounting concepts. The course will introduce the basic accounts, the accounting equation and the financial statements. We will then look at the effect of numerous transactions on different accounts, present and discuss the advantages and limitations of the accrual basis of accounting and the resulting year-end adjusting entries. The course will conclude by introducing and applying the above to merchandising companies.

MBA 503 Business Mathematics and Statistics (1 ECTS)
The course reviews fundamental mathematical concepts that are needed in subsequent MBA courses. Topics covered include basic calculus (functions, differentiation, 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.

Core and Elective Courses

MBA 511 Financial Accounting and Reporting (4 ECTS)
The major objective of this course is to provide a framework for understanding the role and usefulness of financial information provided a) by organisations through their annual reports or through other means of communication, b) by other capital market participants, such as financial analysts, credit analysts, or managers, c) by the financial press. This course is designed to enable the student 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 513 Financial Analysis and Capital Markets (4 ECTS)
The major objective of this course is to present a comprehensive analysis of financial and capital market information as an aid to investing, financing and managerial decision making. The emphasis of this course will be i) on the major methods that users need to employ to analyze financial information such as ratio analysis, prospective analysis i.e., forecasting and valuation, ii) on the quality of financial information and business strategy analysis, iii) applications, i.e., credit analysis and bankruptcy prediction, security analysis, management communication, economic value added, role of financial information in dividend policy and mergers & acquisitions, iv) corporate governance and v) international financial analysis and contemporary issues in financial analysis. All the aforementioned issues will be applied extensively to the Cypriot and international capital markets.

MBA 514 Business Law (2 ECTS)
The course examines the law which affects the current business environment. It analyses legal issues which business generally needs to address. The course covers contract law, commercial legal documents, bankruptcy, franchises, partnerships, joint ventures, corporations, labour law, property law and insurance.

MBA 515 Taxation (2 ECTS)
The course examines taxation issues which affect individuals and companies residing in the Republic of Cyprus. Specifically, it assesses the differences between financial reporting and reporting under taxation laws, international transactions, Value Added Taxation, corporation tax and income tax. Emphasis is placed throughout the course on tax planning for companies and groups of companies.

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 is concerned with understanding the functioning of capital markets as well as the pricing of various financial instruments and selecting and evaluating investment strategies whose risk/return characteristics suit investor needs. 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 523 Options (4 ECTS)
The purpose of the course is to provide a broad overview of the field of derivatives imparting the student with the necessary skills to value and employ options, option-like instruments and futures. The course covers the use of derivative securities by firms, traders and portfolio managers in order to speculate, hedge particular kinds of risk or alter the distribution of returns on their portfolios. In order to provide a useful treatment of these topics in an environment that is changing rapidly, it is necessary to stress the fundamentals and to examine particular applications at a more technical level.

MBA 524 Bank Financial Management (4 ECTS)
The course provides an introduction to bank financial management. Topics covered include the measurement and evaluation of bank performance, basic instruments and techniques, asset/liability management, new financial strategies and integrated decisions for bank management. The course also covers the measurement and management of interest rate, credit, and currency risk.

MBA 525 International Finance (4 ECTS)
Managing an international business or one exposed to global competition requires an understanding of international financial instruments, markets, and institutions. This course seeks to provide students with a working knowledge of these issues. The topics covered include: the nature of foreign exchange risk, the determination of exchange rates and interest rates, management of foreign exchange risk, exchange rate forecasting, and emerging market finance issues such as capital market integration, liberalization, and international capital flows.

MBA 526 Strategic Capital Budgeting (4 ECTS)
The course focuses on investment valuation with flexibility in adjusting future decisions and optimal exercise of embedded options in an uncertain competitive environment. The course emphasizes real options methodology and basic game theory principles in analyzing important strategic firm decisions. The course will supplement theoretical knowledge with case studies and use of software.

MBA 527 Risk Management (4 ECTS)
Uncertainty is prevalent in today’s world and risk management emerges as a powerful tool in the arsenal of managers of modern global enterprises. This course will familiarize students with both the external and internal risks in a variety of institutional settings, and will present techniques for mitigating these risks. Enterprise-wide risk management for financial institutions can serve for managing risks in non-financial contexts, while non-financial risks can be hedged with modern financial products and insurance strategies.

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 increase their understanding of economics and learn a variety of techniques that will allow them to solve business problems relating, among others, 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 (3.5 ECTS)
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, with applications to practical problems in resource allocation, production, inventory control, operations planning, finance and marketing.

MBA 542 Managing Operations (3.5 ECTS)
The course examines all activities related to the management of the resources required to produce the goods and services provided by the organisation. 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 (2 ECTS)
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 organisation 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)
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 with the use of statistical analysis software.

MBA 545 Service Management (4 ECTS)
This course provides a detailed look at how services can be effectively managed in today's challenging environment. The service sector represents the largest segment of most economies. The focus is on the service process and its three supporting elements: strategy, design and delivery. A mix of qualitative and quantitative tools is presented to understand and manage the underlying economics of service and e-service operations. Particular emphasis is placed on issues of service quality and process restructuring for increased performance.

MBA 546 Supply Chain Management (4 ECTS)
The course examines the management of the activities associated with the flow and transformation of goods from the raw materials stage through to the end user, as well as the associated information flows in order to achieve a sustainable competitive advantage. Topics covered include: Introduction to supply chain management, strategic fit in supply chains, cycle inventory, safety inventory, postponement and product design, transportation in supply chains, facility decisions, and coordination in the supply chain.

MBA 547 Quality Management (4 ECTS)
This course presents managerial and quantitative approaches for improvement of quality and productivity in service and manufacturing operations. Quality management is viewed as composed of two related systems, the management system, and the technical system. This course integrates these systems by presenting state-of-art approaches in organizing for quality. Concepts and techniques covered include among others: tools for process improvement, six sigma, quality awards, ISO 9000:2000 certifications, SPC, QFD, control charts, process capability assessment; implementation of quality improvement plans.

MBA 548 E-Commerce (4 ECTS)
The course examines technical, organisational and managerial issues associated with the adoption of E-Business and E-Commerce systems including important applications for enterprise resource planning, supply chain management and customer relationship management. The focus is on appropriate strategies to capitalize on the potential of electronic networks for the promotion and delivery of products and services, and the

**MBA 549 Project Management (4 ECTS)**

Project-based management is becoming the new general management in the contemporary business world since nearly all managers are involved in projects. The course presents a systematic approach in managing projects. Topics covered include: project definition, managing time and cost in projects, project organisation, resources in projects, managing quality in projects, project initiation and close-out, risk management, performance and evaluation, and project management software.

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

This course provides an overall view of marketing’s role in contemporary organisations and explores its relationship to the other business functions. It presents the marketing planning process and shows that effective marketing decision making builds on a thorough analysis and understanding of the marketing environment. It emphasizes the determination of the organisation’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 552 Marketing Research (4 ECTS)**

The main objective of this course is to provide a fundamental understanding of marketing research methods. The course emphasizes the critical role of systematic information gathering in providing sound decision guidance. An extensive presentation of the various steps in the marketing research process is provided, including problem definition, research design, data collection, questionnaire design, measurement, sampling and data analysis. Particular attention is placed upon the interpretation and use of research results in making marketing decisions.

**MBA 553 Strategic Marketing (4 ECTS)**

This course focuses on the strategic and managerial issues involved in formulating and implementing marketing strategy, and provides the tools, concepts and theories necessary to make effective strategic marketing decisions. A framework for developing marketing strategies that yield a sustainable competitive advantage based on customer, competitor, industry and environmental analysis is comprehensively analyzed. The course examines the most recent theories and methods, analytical techniques, and current best practices for developing marketing strategies.

**MBA 554 International Marketing (4 ECTS)**

This course addresses the opportunities and challenges associated with the development and implementation of marketing strategy in international markets. The course aims at developing the necessary knowledge and skills that will enable managers to effectively design and implement marketing plans in targeted foreign markets. Topics covered include the analysis of the international marketing environment; foreign market selection, targeting and positioning; foreign market entry modes; international marketing mix strategy; and the organisation and control of international marketing activities.

**MBA 555 Marketing Communications (4 ECTS)**

This course focuses on the key concepts, theories, strategies and tactics associated with marketing communications decisions. Particular attention is placed on the development of advertising campaigns, covering issues relating to the establishment of advertising objectives, the development of the advertising strategy, the advertising creative process, the advertising budget, media planning and the evaluation of advertising effectiveness. However, the importance of coordinating and integrating advertising with other communication tools (e.g., sales promotion, public relations, personal selling, and direct marketing) in order to achieve superior results is also emphasized.

**MBA 556 New Product Development (2 ECTS)**

New products are vital to the success of all companies. Thus, expertise in the developments and marketing of new products is a critical skill for all managers. This course examines the methods and techniques used in analyzing market opportunities, and presents the new product development process, from idea generation to market launch. Topics covered include the generation of new product ideas, mapping customer perceptions, product life cycle, market segmentation, product positioning, forecasting market demand, product design, and new product testing.

**MBA 557 Sales Management (2 ECTS)**

This course focuses on the activities and problems of Sales Management. It examines the role of the sales force
in different kind of organisations, analyzes the key elements of the sales strategy, and shows how an effective sales strategy supports the overall marketing effort. An extensive presentation of the Sales Management process is provided, covering issues relating to the design of sales organisation structure, the recruitment, selection, training, motivation, control and compensation of salespeople, and the assessment of the sales organisation effectiveness and individual salespeople’s performance.

MBA 558 Consumer Behavior (2 ECTS)
Contemporary marketing thought emphasizes the critical importance of adopting a customer-oriented approach to business. A thorough understanding of the buyer decision-making process is critical to successful marketing. This course examines the factors that influence the buying behaviour of consumers and industrial customers and outlines their implications for marketing strategy. The course aims at building the necessary knowledge that will facilitate managers in predicting buyers’ response to marketing actions and in developing effective marketing strategies and tactics.

MBA 561 Leading and Managing Organisations (4 ECTS)
This course is designed to increase the effectiveness of students as managers within any organisational context by introducing them to a framework for understanding the way organisations function and the behavior of individuals and work groups within them. Diversity, continuous application of new technologies and ever-greater interdependence, between individuals, work groups, and organisations, drastically challenge the skills and creativity of modern managers.

MBA 562 Corporate Social Responsibility and Ethics (2 ECTS)
This course examines the foundations of moral reasoning and the analysis of 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)
The purpose of this course is to explore the many dimensions of new venture creation and growth. While most of the examples in class will be drawn from new venture formation, we will also draw on cases from entrepreneurship, social and non-profit entrepreneurship. The class sessions will be devoted to the process of conceptualizing, developing, and managing successful new ventures, ideas or products towards the creation of a business plan.

MBA 564 Strategic Management (3.5 ECTS)
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 upon material from core topics such as economics, organisational processes, operations and marketing.

MBA 565 Human Resource Management (4 ECTS)
The objective of this course is to provide an overview of Human Resource Management (HRM) as an integral function of any organisation. It is focused on the planning and application of all human resource management activities, functional and strategic, with special emphasis on the importance of human resources as a source of organisational competitive advantage.

MBA 566 Leadership (4 ECTS)
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 between the leader, the followers and the situation as a model for studying the leadership process and 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 567 Managing Change (2 ECTS)
The challenges of globalization, new technologies and increased public and stakeholder scrutiny increasingly require change skills throughout the organisation. This course will arm students with practical skills and hands-on tools for planning and guiding systemic change (strategic shifts, business turnarounds, organisational...
transformations) and managing specific change projects (innovations and new ventures).

**MBA 568 Negotiations (2 ECTS)**

In a constantly changing business environment, successful negotiation is a must for business leaders. This course focuses on developing negotiation skills and the ability to critically assess negotiation situations. Conflict management is stressed and special emphasis is placed on understanding difficult cases through real-world cases, exercises, role plays and simulations.

**MBA 569 Creativity and Innovation (2 ECTS)**

The course focuses on the challenges inherent in attempting to take advantage of both incremental or routine innovation and more radical or revolutionary changes in products and processes. It highlights the importance of innovation to both new ventures and large established firms and explores the organisational, economic and strategic problems that must be tackled to ensure innovation is a long term source of competitive advantage.

**MBA 570 International Business (2 ECTS)**

Living with change and uncertainty is an everyday fact of life for many global enterprises, especially for those in knowledge-intensive industries. This course includes topics such as how to succeed by becoming flexible in international markets; how to strategize, organize, and lead in the dynamic world of international business; and how to integrate international mergers and acquisitions, executing major change initiatives with multi-cultural knowledge workers.

**MBA 571 Multi-cultural Management (2 ECTS)**

This course examines the role of culture – both national and organisational – in management. It examines the meaning of culture as it applies to management practices, describes the role of cultural values and their impact on behaviour, identifies the major dimensions of culture relevant to work settings and discusses cross-cultural differences and similarities as they pertain to local and international management. Emphasis is also placed on managing diversity, as it pertains to gender, physical ability, parental status, etc.

**MBA 572 Business Communication (2 ECTS)**

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 in a business setting. Emphasis will be given to developing a business communication plan, to correctly identifying one’s audience and to the importance of communication in regard to company image. The elements of successful internal and within-group communication are also examined.

**MBA 590 Applied Business Project I (4 ECTS)**

The applied business project is considered the epitome of the programme. It attempts to bridge knowledge and tools acquired during the Programme with practice. During the first part of the applied business project, students are expected to develop their research questions identified through an exploratory study. Upon completion of the first part of the project, it is expected that students will have developed a specific course of action to examine the issues of the collaborating organisation that need to be resolved. The applied business project is completed by groups of students under the supervision of a faculty member.

**MBA 591 Applied Business Project II (17 ECTS)**

During the second part of the applied business project, students implement the action plan developed during the initial stage. Teams collect and analyze information from the organisation and propose applicable solutions. During this part, teams complete the writing of their applied business project and present their results to a committee.

**Research Interests of the Academic Staff**

- **Christakis Charalambous**
  
  *Professor*

  Mathematical Programming, Artificial Neural Networks, Large-scale Optimization, and Signal Processing.

- **Andreas Charitou**
  
  *Professor*

• George Hadjinicolas
  Associate Professor
  International Manufacturing, the Marketing-Production Interface, and New Product Development.

• Krini Kafiris
  Visiting Lecturer
  Communications, Media Studies, Cultural and Feminist Studies.

• Irene Karamanou-Makri
  Assistant Professor
  International Accounting, Analyst Forecasts, Earnings Management, International Capital Markets and the Relevance of Accounting Information.

• George Kassinis
  Associate Professor
  Business Policy, Environmental Management, Technology Policy, and Regional Development.

• Erricos John Kontoghiorghes
  Associate Professor

• Leonidas C. Leonidou
  Professor
  International Marketing/Purchasing, Relationship Marketing, Marketing in Emerging Economies, and Strategic Marketing.

• Spiros H. Martzoukos
  Assistant Professor
  Analytic and Numerical Valuation of Derivatives, Theory and Methods of Real Options, Investments with Learning, Optimal Portfolio Construction.

• George Nishiotis
  Assistant Professor

• Alexia Panayiotou
  Lecturer
  Social constructionism and discursive/cultural psychology; language and organizations (linguistic production of organizational identity and the use of metaphors in organizational science); emotions and organizations; decision-making, leadership and culture; and gender issues.

• Eleni Stavrou-Costea
  Assistant Professor

• Andreas Soteriou
  Associate Professor
  Service Management, Quality and Service Quality Improvement, Customer Satisfaction, Service Efficiency and Effectiveness.

• Marios Theodosiou
  Assistant Professor

• Lenos Trigeorgis
  Professor
  Corporate Finance, Capital Structure, Options and Futures, Capital Budgeting, Competition and Strategy.

• Nikos Vafeas
  Associate Professor
  Financial Accounting, Corporate Governance and Executive Compensation.

• Hercules Vladimirou
  Associate Professor
  Stochastic Programming, Large-scale Optimization, Production Management/Planning, Inventory Planning/Control, Parallel and Distributed Computing, Models for Planning under Uncertainty with Applications in Financial Planning.

• Stavros A. Zenios
  Professor
Graduate Studies Committee
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Erricos Kontogiorgis
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INTRODUCTION

The Centre for Banking and Financial Research was established in 1999 as an independent research unit within the Faculty of Economics and Management aiming at high quality research in the fields of finance, economics and their applications. However, the HERMES Centre on Computational Finance and Economics, which was its predecessor and remains its primary pillar, has been in operation since 1994. The Centre gained international recognition as a reputable research institute and in 2000 was awarded the status of a European Centre of Excellence, under the aegis of the EU Fifth Framework Programme.

The Centre involves faculty from the Departments of Public and Business Administration, Economics, and Mathematics and Statistics who engage in projects concerning challenging problems faced by banks, insurance firms, institutional investors, as well as in networking and training activities (conferences, workshops, exchanges of staff with other research centres, etc.)

GOALS

The Centre aims to establish itself as a reputable research institute in the fields of computational finance and economics. The following priorities are set towards this goal:

- Pursuit of basic and applied research on important problems (e.g., risk management, improvement of efficiency and quality in financial services, effective decision support for asset and liability management under uncertainty, utilization of derivatives in portfolios, valuation of complex investment projects, analysis of household portfolios, etc.).
- Scientific and scholarly contributions to challenging practical problems through the development, implementation and empirical validation of advanced quantitative models in the areas of finance, economics, operations research, statistics and econometrics, and exploitation of modern computing capabilities.
- Participation in international networks and pursuit of joint research projects with European institutions. Further broadening and strengthening its network of international collaborations.
- Attraction of research support from international and domestic organizations through competitive proposals.
- Creation of an environment that is conducive to interdisciplinary cooperation and the encouragement of faculty from the Faculty of Economics and Management as well as from other Departments to establish joint research projects.
- Promotion of the Centre’s accomplishments and dissemination of research results to the professional and academic community through publications, organization of conferences, exchanges of staff with other research institutions, participation in training networks, etc.
- Upgrading of its infrastructure with advanced computing hardware, specialized software and financial databases to support empirical studies on important financial planning problems.

The Centre also aims to assist domestic institutions face the challenges from financial liberalization and improve their effectiveness, profitability and competitiveness in the international arena with:

- Technology transfer through training workshops and dissemination of the Centre’s research results.
- Joint pursuit, with local private and public institutions, of applied projects on the development or adaptation of decision support tools for practical problems (e.g., risk measurement, assessment of credit risk exposures, classification of debtors, ...
management of asset and liability portfolios, assessment of efficiency in banking operations, determination of household portfolio compositions, etc.).

- Collection of important databases of domestic economic and financial activities.

We aim to assist domestic institutions incorporate effective decision support tools in their performance-monitoring and decision-making processes. Such tools are necessitated by increasing competitive pressures due to the liberalization of the financial sector, and the need to comply with international standards (e.g., the Basel Accord governing banking operations, especially for risk management).

RESEARCH ACTIVITIES

The Centre pursues a broad research agenda on strategic, tactical and operational financial decision problems for both the supply side (financial institutions) and the demand side (households and investors). Emphasis is placed on the challenges created for both sides by the globalization and innovations of the financial markets, and on the peculiarities of the local economy as it moves towards harmonization with the European Union. Theoretical modeling, empirical data-driven research and the extensive use of computations are the cornerstones of the disciplinary approaches of the Centre’s research, which brings together faculty and graduate students from finance, economics, accounting, management science, mathematics, statistics and computer science. Currently the research activities of the Centre cover the following areas.

Risk Management and Portfolio Management
The research of this sector focuses on the development, implementation and empirical validation of mathematical models for optimal portfolio management and effective control of risk exposures. The models are based on simulations and stochastic optimization programs for planning under uncertainty and require extensive computations. Uncertainty is prevalent in financial applications and needs to be properly considered in financial decision-making. This has become more pressing in order to avoid financial failures and also to comply with increasingly stringent risk management regulations. Many investments are exposed to multiple risk factors that have concerted effects on the value of portfolios. This dictates the use of sophisticated simulation and optimization frameworks that account for the combined effects of multiple risk factors. We develop appropriate simulation and optimization models that account for the joint effects of multiple risk factors on various types of assets and liabilities (e.g., corporate bonds, bank loans, credit sensitive securities, international indices, etc.). Our recent studies concern innovative applications of stochastic programming models for risk management and optimization of performance in:

- portfolios that contain credit sensitive securities (e.g., corporate bonds),
- international investment portfolios that are exposed to market risks as well as currency risks from fluctuations in exchange rates,
- effective incorporation of derivatives in portfolios so as to hedge financial risks,
- asset and liability portfolios of pension funds and of insurance products with guarantees,
- computer-aided design of financial instruments (e.g., callable bonds).

Household Portfolio Analysis
We study the composition of asset and liability portfolios of households in the US, Europe and Cyprus. The structure of household portfolios is analyzed to
determine the main factors that govern financial decisions of households, and to compare the observed choices of households with the composition of portfolios that would optimize objective measures of economic performance. In collaboration with international research networks, we have completed comparative studies that analyze the composition of household portfolios and the attitude towards equity investments in several developed countries. A current major project involves an EU-funded Research Training Network that studies the economic effects of aging populations in Europe. In collaboration with the Central Bank of Cyprus, we have built a household-level database containing extensive information on the financial and real portfolios of Cypriot households, their labor market status and their attitudes towards saving, borrowing, risk taking, liquidity, and other issues pertinent to financial behavior. The database is similar in scope to the United States Survey of Consumer Finances, the Italian Survey of Household Income and Wealth, and the Dutch Centre Data Panel. The studies are of particular interest to central banks, commercial banks and other financial institutions in the design of their products and services; they also play a role in the design of tax, pension fund, and social security systems.

Efficiency, Profitability and Quality of Financial Services

The research of this sector focuses on improving the efficiency of financial institutions, the quality of their services and the effectiveness of their risk management practices. Recent activities involve:

- Identification and empirical assessment of the effects that quality has in planning the delivery of financial services, and the development of methods for measuring such effects.

- Implementation of a "Customer Satisfaction Barometer" for the banking sectors in Greece and Cyprus. This barometer employs a theoretical framework to (a) compile an extensive collection of pertinent data to support empirical studies; (b) determine the primary criteria of quality of financial services in the banking sector; (c) develop a methodology for the systematic application of a customer satisfaction barometer, and investigate the potential of such a barometer towards improving the efficiency, effectiveness and quality of banking services; (d) empirically validate fundamental theoretical relations between quality and profitability measures.

- Study of current risk and quality management practices in the financial sector and investigation of the effects that these practices have on efficiency and effectiveness of financial institutions. Faculty of the Centre have pioneered a pan-European survey on the performance of financial institutions in order to develop an extensive database for use by researchers studying the drivers of performance. Multivariate statistical analyses are applied to investigate the effects of quality and risk management practices on financial performance, so as to guide decisions for performance improvements that are critical for maintaining competitiveness.

Modern Capital Budgeting and Derivatives Pricing

Modern methods are used for capital budgeting decisions under uncertainty, replacing the traditional net present value approach. These methods are based on real options, game theory and stochastic processes, and account for inherent flexibilities in making long-term, multistage decisions, thus providing an improved valuation framework. This sector studies the application of option pricing methods to the valuation of flexibility in multistage decisions, optimal timing of investment implementations, optimal choices of technology, resources and products under incomplete information and competitive actions, etc. These methods provide decision support tools for managerial and strategic investment decisions in research and
development projects, new product developments, major investments in the sectors of pharmaceuticals, oil exploration, electronic commerce, etc. The sector also studies new procedures for the design and valuation of complex derivatives on stocks, bonds, indices, currencies, and credit instruments. The valuation methods are empirically assessed through extensive numerical computations.

**CONFERENCES AND TRAINING PROGRAMMES**

The Centre is particularly active in organizing international conferences. Professor Harry Markowitz (Nobel laureate in Economics, 1990) was the plenary speaker at the Centre’s inaugural conference on "Asset and Liability Management: From Institutions to Households" in May 2001. The Centre organized ten international conferences during the period 2001-2004:

2001: "International Conference on Savings, Portfolios, and Pensions"; "Conference on Asset and Liability Management: From Institutions to Households".


The Centre co-sponsors and co-organizes the Seminar Series on Macroeconomics and Finance that hosts leading academics and international experts every year. Several workshops have also been organized:


**RESEARCH FUNDING**

The Centre has been successful in attracting funds from competitive research programs of the European Union. The EU programs have been a key source of funding for projects and other activities of the Centre. In the context of these programs the Centre participates in exchanges of staff with European universities and research institutes, runs training programs for practitioners and young researchers, and organizes workshops and seminars, in addition to the research projects. Research programs have also been funded by the Cyprus Research Promotion Foundation, the University of Cyprus, the Central Bank of Cyprus, the Cyprus Development Bank, and other financial institutions.

**COLLABORATIONS**

The Centre maintains close collaborative relations with research groups at various universities in Europe and North America. For example, at the University of Cambridge, Imperial College and Brunel University in the UK; at the Universities of Rome, Bergamo, Palermo and Salerno and at the European University Institute in Florence, Italy; at the University of Vienna in Austria; at Erasmus University in The Netherlands; at ETH-Zurich in Switzerland; at Göthe University of Frankfurt in Germany; at the Universities Miguel Hernandez and Autonoma Madrid in Spain; at the Athens University of Economics and Business and the University of Piraeus.
in Greece; as well as at the University of Pennsylvania in the USA. Some of the Centre’s research programmes were carried out in collaboration with research teams from these institutions.

The Centre has collaborations with other international organizations, such as Gamma Foundation, Banca della Svizzera Italiana (Switzerland), Prometeia Calcolo S.r.l. (Italy), Algorithmics Inc. (Canada), GAMS Development Corporation (USA and Germany), Real Options Group, etc. The Centre also collaborates with banks, financial, insurance and consulting firms in Cyprus.

INFRASTRUCTURE – FACILITIES

The Centre has established a high-performance computer laboratory, including the first multiprocessor parallel computer in Cyprus that was acquired with funding from the EU. The lab is equipped with a network of modern workstations and personal computers that provide access to a collection of specialized software and extensive financial and bibliographic databases that support empirical and computational research. The Centre has a modern teleconferencing system that was also acquired with funding from the EU.

ORGANIZATION

The Centre for Banking and Financial Research operates as an autonomous unit in the School of Economics and Management. It is managed by its Director and its Academic Council. The Director is selected from among the senior faculty of the School of Economics and Management and is responsible for coordinating the activities of the research groups, promoting collaborative group projects and managing administrative matters. The Academic Council consists of the principal investigators of research projects; it decides the Centre’s budget and the priorities of its activities, oversees organizational matters and promotes external collaborations. The Centre also has an Advisory Board that includes academics and senior managers at financial institutions. The Board assists in the development of international collaborations and advises on overall strategies and performance assessment.

CONTACT INFORMATION

Information on the personnel, projects, activities and publications of the Centre can be found on the website: http://www.hermes.ucy.ac.cy
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Director
Associate Professor Hercules Vladimirou
Introduction

Civil and environmental engineering plays a significant role in building modern society in a sustainable future. It deals with 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 everyday, society depends on civil and environmental engineers to provide clean water, energy and waste management, and to protect the natural environment.

The Department of Civil and Environmental Engineering 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 continuing to meet society’s needs in a rapidly changing environment. They undertake investigation, research, planning and design in an academic environment that is based on cooperation among faculty, students, industry, research and professional organizations. The students work in a dynamic environment and have the opportunity to study with and learn from research teams at the forefront of knowledge.

The CEE Department will admit graduate students each year at the Master of Science (M.Sc.) and Doctoral (Ph.D.) levels. Specifically, the Department offers the following four graduate degrees:

- Master of Science (M.Sc.) in Civil Engineering
- Master of Science (M.Sc.) in Environmental Engineering
- Doctor of Philosophy (Ph.D.) in Civil Engineering
- Doctor of Philosophy (Ph.D.) in Environmental Engineering

Mission

The mission of the graduate programmes in CEE 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 multidisciplinary and interdisciplinary fields. The graduate programmes will be research oriented in order to support and strengthen the research and educational activities of the Department and the University. The research will focus on areas that will serve the interests of the Cypriot society, by identifying and providing solutions to local issues and by promoting opportunities for local development and 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
- Computer-Aided Civil Engineering
- Geomechanics
- Transportation Systems
- Management of Water Resources
- Treatment and Disposal of Solid and Liquid Waste
- Environmental Pollution (land, water, air)

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 Office of Student Affairs. A number of students can be financially supported through research programmes.
MASTER OF SCIENCE DEGREE (M.Sc.)

A graduate student is awarded the M.Sc. degree by the Department of Civil and Environmental Engineering after successfully completing the required course of study and successfully defending and writing her/his M.Sc. thesis. Depending on the research area of the student’s thesis and the successfully completed graduate courses, the student is awarded either an M.Sc. in Civil Engineering or an M.Sc. in Environmental Engineering.

The minimum duration of the M.Sc. programme for full-time students in Civil and Environmental Engineering is 3 semesters, including the summer between the two academic years. The maximum duration allowed for completion of the M.Sc. degree is set by the University regulations.

Admission to the Master of Science Programme

The applicants to the M.Sc. programme 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 university or programme.

The candidates must submit a formal application to the Department of Civil and Environmental Engineering within the announced time limits. The application to the M.Sc. programme consists of:

- An application which includes comprehensive information about the applicant’s background, past performance and other qualifications;
- A statement of purpose detailing the applicant’s motivation, goals and objectives, plans for an intended focus area and expectations from the graduate studies;
- Letters of recommendation;
- Other supportive documentation as evidence of the applicant’s qualifications.

All applications are evaluated by the Graduate Studies Committee (GSC) of the CEE Department, which makes suggestions to the Council of the Department for final approval of the selected candidates. The applicants to the master 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 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;
- Very good knowledge of the English language is required for graduate studies in the CEE Department.

Academic Advising

The schedule of advising is as follows:

- Temporary advisor – meets with student prior to initial registration to plan first semester of study.
- Thesis advisor – selected by the student prior to registering for subsequent semesters.
- Thesis committee – formed by the student and his thesis advisor prior to submitting a thesis proposal. Consists of thesis advisor, at least one other faculty member of the Department, and at least one other faculty member inside or outside the University.

This schedule ensures that students are well advised and actively engaged in research at the early stages of their programme.
Programme of Study

The programme of studies at the University of Cyprus is based on the European Credit Transfer and Accumulation System (ECTS). The ECTS is a student-centered system based on the student workload required to achieve the objectives of a programme by attaching credits to its components.

The course of study leading to the M.Sc. degree in Civil and Environmental Engineering requires the completion of at least 110 ECTS units in graduate level courses, beyond the Bachelors degree, and research work distributed as follows:

- **Coursework** (a total of 30 ECTS units):
  - Graduate courses in CEE (related to the M.Sc. programme) (18 ECTS units)
  - Graduate courses in/outside CEE (12 ECTS units)
- **Thesis research** (CEE 680) (55 ECTS units)
- **Combination of at least two of the following** (25 ECTS units):
  - Additional coursework
  - Graduate seminar (CEE 610, CEE 611)
  - Independent Studies (CEE 650)

**TOTAL: 110 ECTS units**

Although the student has the flexibility to distribute, in consultation with her/his advisor, the last 25 ECTS units, as shown above, in either case the result of the thesis research (CEE 680) must be a completed M.Sc. thesis.

The CEE graduate courses that can be selected to fulfill the course requirements for civil or environmental engineering are presented in relevant tables in the paragraph that describes the graduate courses.

Students should select, in consultation with their advisors, the courses that will help them in the completion of their M.Sc. thesis, and the course selection must be approved by the GSC of the CEE Department. Coursework eligible for the M.Sc. programme should include graduate courses. However, one undergraduate course outside the CEE can be accepted with prior approval by the CEE Department, following a justified petition by the student, signed by his/her academic advisor. In order to count towards the M.Sc. programme requirements, the GSC of the CEE Department must approve the petition before the student registers for the respective course.

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/her advisor. The student must submit and defend a thesis proposal at least 2 semesters before the intended date of graduation. Upon written approval of the proposal by the advisor, the CEE Department will appoint a thesis committee which will consist of the student’s advisor and two additional faculty members with related research interests. The student’s advisor will be the chairperson and coordinator of the thesis committee.

Midway towards the completion of his/her research the student must submit a progress report to the committee members for feedback. Upon successful completion of his/her research the student must write an appropriate thesis and submit a draft to the committee for feedback. When the thesis is complete, the student must present his/her work in front of an open audience. This audience can be the graduate seminar attendees or a wider attendance. After the presentation, the student must defend his/her work to the thesis committee in a closed door session. If the defense is satisfactory, the thesis committee will sign the thesis and submit two original copies, one for the Department records and one for the Library. An electronic version of the thesis in PDF format will also be submitted for the Department records and for dissemination. If the thesis is rejected, the candidate is entitled to request a repetition of the thesis one more
time. In this case, the timing and terms of the resubmission of the thesis are determined by the thesis committee.

Research
The M.Sc. thesis must address current and valid scientific and/or technical issue(s) with fundamental and/or applied research, leading to the creation of new engineering knowledge and/or prototype(s) previously unavailable to the technical community. Development aspects, leading to an application of this research, may also be included as a secondary component of the thesis. The basic/applied research must be novel and original, and of high scholarly standards, qualifying it as acceptable for publication in recognized academic journals. The intellectual merit of the thesis must be based on the research findings of the M.Sc. candidate, distinguished clearly from the work of others, testifying to the candidate’s personal contribution, and acknowledging support of others in or outside the University. In addition, the broader impacts of the research must also be highlighted in the thesis, in terms of addressing new engineering areas or issues, and generating new technical applications and innovations. Broader impacts also must be indicated in: promoting learning innovation, education at all student levels and training of the workforce; involving underrepresented groups in science and engineering; establishing physical infrastructure (laboratory resources, software programmes, etc., and virtual resources (centers, networks, etc.); setting dissemination plans through 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.

Further details on the requirements, format and the posting procedures of the M.Sc. thesis can be obtained from the CEE Department secretary.

DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)
A graduate student is awarded a doctoral degree by the Department of Civil and Environmental Engineering after completing the required course of study and successfully defending and writing her/his Ph.D. thesis, as described in detail below. Depending on the research area of the student's thesis, the student is awarded either a Ph.D. in Civil Engineering, or a Ph.D. in Environmental Engineering. The maximum duration allowed for completion of the Ph.D. degree is set by the University regulations.

Admission to the Ph.D. Programme
The applicants to the Ph.D. programme must possess the equivalent of a B.Sc. or an M.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 university.

The candidates must submit a formal application to the Department of Civil and Environmental Engineering within the announced time limits. The application to the Ph.D. programme consists of:
- An application including comprehensive information about the applicant’s background, past performance and other qualifications;
- A statement of purpose detailing the applicant’s motivation, goals and objectives, plans for an intended focus area and expectations from the doctoral studies;
- Letters of recommendation;
- Other supportive documentation as evidence of the applicant’s qualifications.

All applications are evaluated by the GSC of the CEE Department, which makes suggestions to the Council of the Department for final approval of the selected candidates. The applicants to the Ph.D. programme are selected according to the criteria applying to the Master degree applicants. The CEE Department reserves
the right to fill only as many announced graduate student positions as the Department considers appropriate.

**Academic Advising**

The schedule of advising is as follows:

- Temporary advisor – meets with student prior to initial registration to plan first semester of study.

- Dissertation advisor – selected by student prior to registering for subsequent semesters.

- Dissertation committee – formed by the student and his advisor prior to submitting a dissertation proposal and consists of three members: the dissertation advisor, at least one other CEE faculty, and at least one other member.

This schedule ensures that students are well advised and actively engaged in research at the early stages of their programme.

**Course of Study**

The programme of studies at the University of Cyprus is based on the European Credit Transfer and Accumulation System (ECTS). The ECTS is a student-centered system based on the student workload required to achieve the objectives of a programme by attaching credits to its components.

The course of study leading to the Ph.D. degree in Civil and Environmental Engineering requires the completion of a minimum of 240 ECTS units beyond the Bachelor degree, or 150 ECTS units beyond the Master degree. For students proceeding directly from B.Sc. to Ph.D., the 240 ECTS units should be distributed as follows:

- **Coursework (total of 48 ECTS units)**
  - Graduate courses in CEE (related to the Ph.D. thesis): 30 ECTS units
  - Graduate courses in/outside of CEE: 18 ECTS units

- **Thesis research (CEE 690) (160 ECTS units)**

- **A combination of at least two of the following (32 ECTS units)**
  - Additional coursework
  - Graduate seminar (CEE 610)
  - Independent Studies (CEE 650)

**TOTAL 240 ECTS units**

Although the student has the flexibility to distribute (in consultation with her/his advisor) the last 32 ECTS units, as shown above, in either case the result of the thesis research (CEE 690) must be a completed Ph.D. thesis.

Students who have joined the doctoral programme after successfully completing a relevant M.Sc. programme can be credited with:

- up to 24 ECTS units from graduate courses to count towards the required 48 ECTS units of the coursework;

- up to 24 ECTS units from graduate research directly related to the Ph.D. dissertation to count towards the required 150 ECTS units of the thesis research; and/or

- up to 12 ECTS units from additional coursework or dissertation research to count towards the required 32 ECTS units of the relevant combination.

ECTS units for previously completed graduate work are credited only after approval by the Graduate Committee of the CEE Department, following a justified petition by the student, signed by his/her academic advisor.

Students should select, in consultation with their advisors, the courses that will help them in the completion of their Ph.D. thesis, and the course selection must be approved by the CEE Department. Coursework eligible for the Ph.D. programme should include graduate courses. However, undergraduate
courses or/and courses outside the CEE (in addition to the 6 ECTS units permitted) can only be accepted with prior approval by the CEE Department, following a justified petition by the student, signed by his/her academic advisor. In order to count towards the Ph.D. programme requirements, the Graduate Committee of the CEE Department must approve the petition before the student registers for the respective courses.

**Ph.D. Thesis**
An original research study and a thesis are required for the Ph.D. degree. The subject of the student's research is chosen in consultation with his/her advisor.

**Qualifying Examination**
Admission to candidacy for the Ph.D. programme is granted when the student has satisfactorily passed a qualifying examination, intended to measure fundamental ability and knowledge in civil or environmental engineering as well as specialized knowledge and understanding of the intended research area. The responses to the examination are evaluated by the departmental graduate committee.

For students in the B.Sc.-to-Ph.D. programme, the qualifying examination must be taken no later than three academic semesters after the student enrolled in the Ph.D. programme. For students in the M.Sc.-to-Ph.D. programme, the qualifying examination must be taken no later than two academic semesters after the student enrolled in the Ph.D. programme. In case of failure, the student is allowed to repeat the entire qualifying examination one more time, in the same or different curriculum areas, at a date mutually agreed between the graduate committee and the student's advisor. The dates and details of the qualifying examination procedure can be obtained from the CEE department secretary.

If a doctoral student is not admitted to candidacy or if a candidate withdraws from the Ph.D. programme, he/she may submit a written petition for admission in one of the M.Sc. programmes of the CEE Department and for transfer of credit received for his/her doctoral course and research work to the M.Sc. programme. This petition must be submitted while the student is still enrolled in the University, and is reviewed by the CEE graduate committee, which decides on its acceptance or rejection, as well as on the amount of doctoral work credit transferable to the M.Sc. programme if appropriate. If accepted to the M.Sc. programme, the student must complete all requirements of this programme in order to be awarded the M.Sc. degree.

**Dissertation Proposal**
Each doctoral student must prepare a brief written proposal of his/her intended doctoral research, and make a comprehensive oral presentation on the proposed work 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 done on the topic by the student to date.

The proposal must be made within a year after admission to candidacy, and at least one year before the intended date of defense. Both the written proposal and oral presentation are presented to the dissertation committee and a representative from the GSC. The written proposal must be handed to the dissertation committee and the graduate committee representative at least one week before the oral presentation. The prepared portion of the oral presentation should not exceed 30 minutes, and 90 minutes should be allowed for discussion. If the dissertation committee and the graduate committee representative have concerns about either the substance of the proposal or the student's understanding of the topic, then the student will have one month to prepare a second presentation that focuses on the areas of concern. This presentation will last 15 minutes with an additional 45 minutes allowed for discussion. Students can continue their research only if the proposal is approved.
Doctoral Dissertation

The doctoral dissertation must address current and valid scientific and/or technical issue(s) primarily with fundamental research, leading to the creation of new scientific and/or engineering knowledge previously unavailable to the scholarly community. 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 fundamental research must be novel, 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 of others in or outside the University. In addition, the broader impacts of the research must also 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 also must be indicated in: promoting learning, innovation, education at all student levels and training of the workforce; involving underrepresented groups in science and engineering; establishing physical infrastructure (laboratory resources, software programmes, etc.) and virtual resources (centers, 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.

Further details on the format requirements and the posting procedures of the doctoral dissertation can be obtained from the CEE department secretary.

Dissertation Defense

Each doctoral candidate is required to defend the originality, independence, and quality of research during an oral dissertation defense that is administered by an Examining Committee. The Examining Committee has five members and consists of the three members of the dissertation committee, a faculty member in any department of the University who has knowledge relevant to the Ph.D. research topic, and a member from another University or research institute. The President of the Examining Committee will be a member of the CEE Department but not the thesis advisor.

The defense is open to public participation and consists of a presentation by the candidate no longer than one hour, followed by a one hour open discussion, including a concluding closed session of the examining committee who will decide on the doctoral work. At least one month prior to the defense, the candidate must provide a copy of the dissertation to each member of the examining committee. At the same time, the candidate must make an additional copy available for members of the university community wishing to read the dissertation prior to the defense, and he/she must also arrange for public notification of the defense to be given by the CEE Graduate Studies Committee.

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 his/her advisor. In this case, the dissertation advisor will determine the successful and timely conformance of the candidate to the modifications suggested by the examining committee. If the defense is satisfactory, the dissertation committee will sign the dissertation, and the candidate must submit two original hard copies, 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 timing and terms of the resubmission of the dissertation must be set out in writing by the examining committee.

Categories of Graduate Courses
The following tables show the two groups of courses that correspond to civil and environmental engineering from which the student can select the relevant courses.

Civil Engineering Courses

Courses Eligible for Civil Engineering Constraint Electives
CEE 500 Engineering Applications with Software Development
CEE 501 Computer-Aided Civil Engineering
CEE 510 Advanced Building Technology
CEE 511 Construction Engineering
CEE 515 Advanced Topics in Construction Management
CEE 520 Advanced Structural Analysis
CEE 521 Structural Dynamics and Earthquake Engineering
CEE 526 Finite Element Analysis
CEE 530 Advanced Topics in Structural Engineering
CEE 531 Rehabilitation and Strengthening of Structures
CEE 532 Advanced Material Technology
CEE 535 Theory of Plasticity
CEE 540 Behavior and Design of Reinforced Concrete Structures
CEE 544 Prestressed Concrete Structures
CEE 545 Behavior and Design of Steel Structures
CEE 550 Advanced Geotechnical Engineering
CEE 553 Engineering Geology and Rock Mechanics
CEE 555 Soil Dynamics and Technical Seismology
CEE 557 Environmental Geotechnics
CEE 560 Advanced Transportation Engineering

Environmental Engineering Courses

Courses Eligible for Environmental Engineering Constraint Electives
CEE 500 Engineering Applications with Software Development
CEE 553 Engineering Geology and Rock Mechanics
CEE 557 Environmental Geotechnics
CEE 570 Water Resources Management
CEE 571 Computational Hydraulics
CEE 572 Groundwater Hydrology
CEE 579 Coastal and Maritime Engineering
CEE 580 Advanced Topics in Environmental Engineering
CEE 581 Environmental Risk Assessment
CEE 582 Solid and Hazardous Waste Management
CEE 584 Air Pollution
CEE 589 Environment and Health

Description of Graduate Courses

After the number, name and description of each course, the number of ECTS units is provided. The ECTS units 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
(6 ECTS: 3-0-8)

CEE 501 Computer-Aided Civil Engineering
(6 ECTS: 3-0-8)
Analysis and design software for civil engineering. Application of advanced computer-aided design and analysis techniques with emphasis on structural engineering. Database models and systems in civil engineering.
Engineering design projects/case studies using selected computerized numerical techniques. Fundamentals of geometric modeling and computer graphics for engineering simulation. Applications using CAD systems. Term project: Utilization of CAD/CAE in a practical application in CEE with emphasis in structural engineering.

**CEE 510 Advanced Building Technology**  
*6 ECTS: 3-0-8*  
Case studies and architectural design analysis derived mainly from structural engineering issues. The students will be introduced to architectural works with emphasis on structural, construction and environmental design aspects. A design project focused on aspects of structural and construction design will be required from each student.

**CEE 511 Construction Engineering**  
*6 ECTS: 3-0-8*  

**CEE 515 Advanced Topics in Construction Project Management**  
*6 ECTS: 3-0-8*  
Advanced and contemporary topics in construction project 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 520 Advanced Structural Analysis**  
*6 ECTS: 3-0-8*  

**CEE 521 Structural Dynamics and Earthquake Engineering**  
*6 ECTS: 3-0-8*  

Characterization of earthquakes for design. Introduction to seismic isolation and energy absorbing mechanisms. Soil-structure interaction. Seismic codes.

**CEE 526 Finite Element Analysis**  
*6 ECTS: 3-0-8*  

**CEE 530 Advanced Topics in Structural Engineering**  
*6 ECTS: 3-0-8*  
Advanced structural engineering topics that may include special topics in earthquake-resistant design and analysis, advanced static and dynamic structural analysis, special topics in reinforced concrete and steel structures design, foundation engineering, materials engineering and special methods of computational mechanics.

**CEE 531 Rehabilitation and Strengthening of Structures**  
*6 ECTS: 3-0-8*  

**CEE 532 Advanced Material Technology**  
*6 ECTS: 3-0-8*  

**CEE 535 Theory of Plasticity**  
*6 ECTS: 3-0-8*  

**CEE 540 Behavior and Design of Reinforced Concrete Structures**  
(6 ECTS: 3-0-8)  

**CEE 544 Prestressed Concrete Structures**  
(6 ECTS: 3-0-8)  
High-strength concretes and steels for prestressed concretes. Behavior and design of prestressed concrete structures under bending moment, shear, torsion and axial load effects. Pre-tensioning and post-tensioning. Design of continuous prestressed concrete beams, frames, slabs, and shells. Continuity in precast, pre-stressed systems and design of connections. Time-dependent effects and deflections of prestressed concrete structures. Applications to the design and construction of bridges and buildings using prestressed concrete.

**CEE 545 Behavior and Design of Steel Structures**  
(6 ECTS: 3-0-8)  

**CEE 553 Engineering Geology and Rock Mechanics**  
(6 ECTS: 3-0-8)  
Composition and properties of rocks and soil, geologic processes, geologic structures and engineering consequences, natural and artificial underground openings. Influence of geologic origin and history on the engineering characteristics of soils and rocks. Application of geology in exploration, design, and construction of engineering works. Strength and deformability of intact and jointed rock, in-situ stresses, lab and field methods. Terrain analysis and site investigation; civil engineering facility citing. Rock slopes; stability and reinforcement; foundation on rocks. Seismic zonation for ground motions and soil liquefaction potential, geotechnical aspects of municipal and hazardous waste disposal.

**CEE 555 Soil Dynamics and Technical Seismology**  
(6 ECTS: 3-0-8)  

**CEE 557 Environmental Geotechnics**  
(6 ECTS: 3-0-8)  

**CEE 560 Advanced Transportation Engineering**  
(6 ECTS: 3-0-8)  
Design of transportation facilities based on operational capacity, site constraints, and safety considerations. Modern planning, economics, and management approaches to transportation activities. Management and control of vehicle flows and fleets. Traffic safety and injury control. Advanced surveillance, navigation,
communication, and computer technology to monitor, analyze, and improve the performance of transportation systems. Operational planning and management of the highway transportation system. Urban transportation systems. Analysis and evaluation of mass transit systems. Application of micro/macro-economic concepts to transportation systems. Integrated treatment of analytical methods and technologies for the management of transportation facilities over their life.

**CEE 570 Water Resources Management**  
(*6 ECTS: 3-0-8*)  
Control of water resources by natural system functions, user actions, and influence of social, economic, and political institutions. Water resource policies. Case studies (e.g., flood/drought management).

**CEE 571 Computational Hydraulics**  
(*6 ECTS: 3-0-8*)  
Computer applications in hydraulic engineering with emphasis on iteration techniques and finite increment methods applied to open channel flow profile analysis; analysis of flow through spillways, bridge waterways, culverts, and similar structures.

**CEE 572 Groundwater Hydrology**  
(*6 ECTS: 3-0-8*)  
Importance and occurrence of ground-water; chemical and physical properties of the groundwater environment; basic principles of ground-water flow; measurement of parameters; pump test design and analysis; transport of contaminants; use of computer models for the simulation of flow and transport problems. Assessment methodologies for dealing with contaminated land and related subjects, e.g., risk assessment.

**CEE 579 Coastal and Maritime Engineering**  
(*6 ECTS: 3-0-8*)  
Tidal theory, hydrographic surveying, maintenance dredging, wave theories, wave refraction, wave diffraction, wave reflection, breakwaters, coastal defense, marine construction, long sea outfalls, estuaries, sediment transport.

**CEE 580 Advanced Topics in Environmental Engineering**  
(*6 ECTS: 3-0-8*)  

**CEE 581 Environmental Risk Assessment**  
(*6 ECTS: 3-0-8*)  
Hazard identification, exposure assessment, risk assessment, and characterization. Risk assessment and management methods. Methodologies for evaluating and managing risks from environmental contaminants and technological hazards. Evaluating scientific data, the techniques involved in analyzing risks, generally accepted principles and terminology used in the field, and limitations of current risk assessment methods.

**CEE 582 Solid and Hazardous Waste Management**  
(*6 ECTS: 3-0-8*)  
Sources and classification of solid and hazardous waste; Composition and pollution load of solid waste; Integrated solid and hazardous waste management; Municipal solid waste management systems; Special waste streams; Properties of hazardous waste; Hazardous waste management; Existing situation in regards to solid waste management in local, national, and European level.

**CEE 584 Air Pollution**  
(*6 ECTS: 3-0-8*)  
The course aims to develop a fundamental understanding of air pollution aspects and enable students to apply principles both in research and operational contexts. The course will cover: sources, sinks and receptors of air pollution, causes and consequences, meteorology and climatology, density-stratified fluid mechanics, internal waves, flow over topography, air quality, atmospheric chemistry, turbulence, turbulent flows including reacting flows, turbulence modelling.

**CEE 586 Sustainable Built Environment**  
(*6 ECTS: 3-0-8*)  
The course aims to introduce aspects of advanced environmental building design combined with an awareness of the challenge of sustainable solutions for the development and operation of such systems in the future. The course will cover the subjects of building physics and bioclimatic building design, perception of human comfort, energy efficient systems and integration of renewable energies, environmentally friendly materials, rational water usage, enhanced natural ventilation, and indoor air quality. The course will also demonstrate examples of both sustainable and unsustainable aspects of current building design practice, and how international policy frameworks can act as both drivers and barriers to sustainable solutions.
CEE 589 Environment and Health  
(6 ECTS: 3-0-8)  
Epidemiology and toxicology; environmental pollution and conditions which may be detrimental to health; health effects associated with the environment; managing the environment to improve health.

CEE 610 Graduate Seminar  
ECTS units assigned by advisor  
Participation in graduate seminars organized by the Faculty of Engineering in fall terms.

CEE 611 Graduate Seminar  
ECTS units assigned by advisor  
Participation in graduate seminars organized by the Faculty of Engineering in spring terms.

CEE 630 Teaching in CEE  
No ECTS units credited  
For teaching assistants to recognize the educational value derived from satisfactory performance of assigned duties.

CEE 650 Independent Studies  
ECTS units assigned by the professor responsible for the research  
Individual study, research, or laboratory investigations under faculty supervision.

CEE 680 M.Sc. Research  
ECTS units assigned by the thesis advisor  
Programme of graduate research leading to the defense and writing of an M.Sc. thesis.

CEE 690 Ph.D. Research  
ECTS units assigned by the thesis advisor  
Graduate research within a Ph.D. programme.

Research Interests of the Academic Faculty

- **Dimos C. Charmpis**  
  Lecturer  
  His research interests lie in the area of Computational Mechanics and aim toward the development and exploitation of computational methods for the analysis and design of structures under static or seismic loading: finite element methods, reliability analysis of structural systems using probabilistic/stochastic methods, parallel and distributed computing and structural design optimization using evolutionary algorithms and artificial intelligence.

- **Symeon Christodoulou**  
  Assistant Professor  
  His principal research interests are in construction engineering and management, fully integrated and automated project processes, information technology, risk analysis and artificial intelligence for civil engineering and construction applications.

- **Despo Fatta**  
  Lecturer  
  Her principal research interests are in the field of Environmental Science, Technology and Management and in particular in the areas of hazardous and nonhazardous solid waste management, wastewater management systems, industrial hazard analysis and risk assessment and environmental impact assessment.

- **Christos Hadjichristos**  
  Lecturer  
  His research interests include architectural theory, the nature of architectural education and knowledge, architectural design, design studio, the nature of architectural culture and practice, domestic architecture, architectural and urban spatial configurations and social praxis, the current and potential relationship between structural and architectural design and the aging of architectural projects. Through his sketches and paintings he examines issues in visual perception, which are central to architectural debates as well. Such is the relationship between figure and form or syntax and semiotics, subtraction or erasure and abstraction.

- **Ioannis Ioannou**  
  Lecturer  
  His research interests lie in the fields of characterization and durability of construction materials. He focuses on studies of liquid movement in porous materials, based on unsaturated flow theory, and associated problems of decay and protection of ancient monuments and historic buildings.

- **Petros Komodromos**  
  Lecturer  
  His research interests include earthquake resistant design, computer-aided engineering and information technology in civil engineering.

- **Marina Neophytou**  
  Lecturer  
  Her principal research interests lie in the area of environmental fluid mechanics, in particular urban
pollution dispersion, environmental turbulence modeling, validation and assessment of urban dispersion models, CFD modeling at the local and urban scales, indoor-outdoor air pollution and their relation, buoyancy-driven flows, building ventilation, tunnel ventilation and fire safety, sustainable energy usage, renewable energy resources, and sustainable building design.

- **Christos Pantelides**
  Professor
  His research interests include the design and strengthening of reinforced concrete structures under seismic loading.

- **Panos Papanastasiou**
  Associate Professor
  His research interests and contributions are in the area of Applied and Computational Mechanics with applications in constitutive modeling of cohesive-frictional materials, micro-mechanics, fracture mechanics, environmental geomechanics, petroleum engineering and finite element analysis.

- **Michael F. Petrou**
  Associate Professor
  His research interests are in the general area of 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 modeling, and repair/strengthening of structures.

- **Marios C. Phocas**
  Assistant Professor
  His teaching and research activities cover the areas of architectural design, building technology and structural design and control. At the University of Stuttgart he initiated and conducted intensive research on modern technologies in earthquake resistant structural building design.

- **Panayiotis Roussis**
  Lecturer
  His principal research interests area in the general area of structural engineering with emphasis in seismic isolation and energy dissipation systems, deterministic and probabilistic structural dynamics, large-scale earthquake-simulator testing, and rigid-body dynamics.

- **Dimitrios Vamvatsikos**
  Lecturer
  His research is focused on the estimation of seismic hazard, the analysis and design of steel structures, the modeling and nonlinear analysis of structures, and the seismic performance of buildings and bridges. The ultimate goal is to integrate elements of such procedures into future codes and current design practice.

**Secretariat**
Tel.: 22892249
Fax: 22892295

**Graduate Studies Committee**
CeeGradStudies@ucy.ac.cy

**Graduate Studies Coordinator**
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e-mail: petrou@ucy.ac.cy
Introduction
The role and significance of Architecture can hardly be overestimated. The field is inherently related to a wide variety of areas with aesthetic, technological, social, cultural, economic and political issues that 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 perform successfully worldwide but who also have the knowledge and sensitivity to respond correctly and influence positively the built environment of Europe. In support of this the Programme 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. The students participate in research, planning and design in an academic environment, in cooperation with the faculty, research and professional organizations.

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

Mission
The graduate programme of Architecture is presently offered within the Department of Civil and Environmental Engineering. The mission of the graduate programme 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, as a way for identifying relevant international architectural issues while promoting opportunities for local architectural development. The thematic contents of individual courses offered each semester are based on the educational and research interests of the faculty.

Research Areas
Research in the Ph.D. Programme of Architecture focuses on the following areas:
- Architectural Theory and History
- Architectural Communication Media
- Architectural Technology
- Urban Planning

Financial Support
The University of Cyprus supports many graduate students through teaching assistantships, the number of which depends on the teaching needs of the programme of studies. There are also additional funding opportunities, information on which is available through the Office of Student Affairs. A number of students can be financially supported through research programmes.

DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)
A graduate student is awarded a doctoral degree by the Programme of Architecture after successfully completing the required course of study and successfully defending and writing his/her Ph.D. thesis, as described in detail below. The minimum duration of the Ph.D. Programme in Architecture for full-time students is 6 semesters. The maximum
duration allowed for completion of the Ph.D. degree is set by the University regulations.

**Admission to the Ph.D. Programme**

Applicants to the Ph.D. Programme must possess the equivalent of a Master (M.A. or M.Sc. in Architecture, or 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 a formal application to the Programme of Architecture within the announced time limits. The application to the Ph.D. Programme consists of the following:

- An application including information about the applicant
- A statement of purpose detailing the applicant’s motivation, goals and objectives, plans for an intended focus area and expectations from the doctoral studies
- Letters of recommendation from academic referees familiar with the applicant’s past work and future promise
- Other supportive documentation as evidence of the applicant’s qualifications.

Applications are evaluated by the graduate admissions committee of the Programme 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.

**Academic Advising**

The schedule of advising is as follows:

- Temporary advisor – meets with the student prior to initial registration to plan first semester of study
- Dissertation advisor – selected by the student prior to registering for subsequent semesters
- Dissertation committee – formed by the student and his advisor prior to submitting a dissertation proposal and consists of three members; the dissertation advisor, a faculty member and at least one other member.

The schedule of advising ensures that students are well advised and actively engaged in research at the early stages of their programme.

**Course of Study**

The course of study leading to the Ph.D. degree in Architecture requires the completion of a minimum of 240 ECTS units in graduate level courses and research work, as follows:
• Graduate courses (a total of 60 ECTS)
  Graduate courses related to the Ph.D. thesis
  (students with a Master degree are credited with 30
  ECTS units of the required 60 ECTS)

• Ph.D. Thesis Research (180 ECTS)
  (students with a Master degree are credited with 30
  ECTS units of the required 180 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 ARH are
acceptable only after prior approval by the graduate
committee of the Programme of Architecture,
following a justified petition by the student, signed
by his/her academic advisor. In order to count
towards the Ph.D. Programme requirements, the
graduate committee of the Programme of
Architecture must approve the petition before the
student registers for the respective course.

Ph.D. Thesis

Qualifying Examination
Admission to candidacy for the Ph.D. programme is
granted when the student has satisfactorily passed a
qualifying examination (written and oral), intended
to measure fundamental ability and knowledge in
Architecture as well as specialized knowledge and
understanding of the intended research area. The
qualifying examination must be taken no later than
two academic semesters after the student has
enrolled in the Ph.D. programme.

The qualifying examination covers three relevant
subject areas from the main areas in Architectural
Theory and History, Architectural Communication
Media, Architectural Technology and Urban Planning,
and will be set by at least three faculty members.
The examination is evaluated by the dissertation
committee of the Programme of Architecture. For the
written examination a grade of at least 50% in all
three areas is required. The oral examination should
take place within six weeks after the written
examination. The oral examination focuses on
questions relevant to the written examination or the
student’s research. The committee assesses the
candidate’s performance. Student must pass both
examination parts. In case of failure, the student is
allowed to repeat the entire qualifying examination
once more at a date mutually agreed between the
graduate committee and the student’s advisor.

Dissertation Proposal
Each doctoral student must prepare a brief written
proposal of his/her intended doctoral research, and
make a comprehensive oral presentation on the
proposed work that demonstrates a sound
understanding of the dissertation topic, the relevant
literature, the methodology to be employed, the
issues to be addressed, and the work done on the
topic by the student to date.

The proposal must be made within a year after
admission to the doctoral Programme, and at least
one year before the intended date of defense. Both
the written proposal and oral presentation are
presented to the dissertation committee and a
representative from the graduate committee of the
Programme of Architecture. The written proposal
must be handed to the dissertation committee at least
one week before the oral presentation. The oral
presentation should not exceed 30 minutes, and 90
minutes should be allowed for discussion. If the
dissertation committee and the graduate committee
representative have concerns about either the
substance of the proposal or the student’s
understanding of the topic, then the student will
have one month to prepare a second presentation
that focuses on the areas of concern. This presentation will last 15 minutes with an additional 45 minutes allowed for discussion. Students can continue their research only if the proposal is approved.

**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.

Further details on the format requirements and the posting procedures of the doctoral dissertation are included in Appendix II of the Regulations of Studies and Study Affairs of the University.

**Dissertation Defense**

Each doctoral candidate is required to defend the research during an oral dissertation defense that is administered by an Examining Committee. The Examining Committee has five members and consists of the three members of the dissertation committee, a UCY faculty member who has relevant knowledge of the Ph.D. research topic, and a member from another University or research institute. The chair of the Examining Committee is a member of the Programme of Architecture but not the thesis advisor.

The defense is open to public participation and consists of a 45 minute presentation by the candidate that could include visual material, followed by a one hour open discussion. A concluding closed session of the examining committee assess the doctoral work. At least one month prior to the defense, the candidate must provide a copy of the dissertation to each member of the examining committee to assess the doctoral work. At the same time, the candidate must make additional copies available for members of the university community who wish to read the dissertation prior to the defense, and he/she must also arrange for public notification of the defense to be given by the Programme of Architecture secretary.

The examining committee will determine the acceptability of the candidate's dissertation and oral performance, propose modifications to the written dissertation if appropriate, and set a timeplan for the candidate to address such changes, in mutual agreement with his/her advisor. In this case, the dissertation advisor will determine the successful and timely conformance of the candidate to the modifications suggested by the examining committee. If the defense is satisfactory, the dissertation committee will sign the dissertation, and the candidate must submit two original hard copies, one to the University Library and one for the Department records, as well as an electronic version of the dissertation in PDF format to the Programme of Architecture 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 timing and terms of the resubmission of the dissertation must be set out in writing by the examining committee.

**Categories of Graduate Courses**

Each student must successfully take a number of courses that are related to his graduate Programme of studies in Architecture that will credit him with the required amount of ECTS credit units according to his Programme requirements as described above. The following list shows the courses, which may be offered from the Programme of graduate studies in Architecture depending on the availability, the educational and research interests of the Faculty.

**List of Courses**

**Constrained Elective Courses**
- ARH 500 Research Methodologies
- ARH 502 Design Based Research
- ARH 504 Independent Studies
- ARH 602-607 Ph.D. Research

**Architectural Theory and History**
- ARH 510 Theories of Architecture
- ARH 512 Architecture in Philosophy
- ARH 514 Design Applications in Architectural History
- ARH 516 Buildings in History
- ARH 518 Theory, History and Criticism
- ARH 519 Advanced Topics in Architectural Theory and History

**Architectural Communication Media**
- 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 Experimental Art and Architecture
- ARH 529 Advanced Topics in Architectural Communication Media

**Architectural Technology**
- 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

**Urban Planning**
- ARH 540 The Mediterranean City
- ARH 542 Space Syntax
- ARH 544 Urbanism in History
- ARH 546 Urban Design and Planning
- ARH 548 Landscape Architecture
- ARH 549 Advanced Topics in Urban Planning

**Description of Courses**

Each course description stipulates any necessary prerequisites and the number of ECTS units. 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.

**ARH 500 Research Methodologies**
*(6 ECTS: 3-0-8)*
Foundation course on the diversity of research paradigms in architecture for graduate students in the Ph.D. programme. Introduction to the philosophy of knowledge with an emphasis on architecture. Critical review and evaluation of diverse research methodologies in current architectural research. The student produces a report that critically reviews selected course readings and discussions.

**ARH 502 Design Based Research**
*(6 ECTS: 3-6-2)*
This course is meant to provide a working environment for the Ph.D. candidate and design ideas relevant to the
Ph.D. subject. The student selects the area of design emphasis depending on his/her interests while working with a member of the faculty.

**ARH 504 Independent Studies**  
*(ECTS units assigned by the thesis advisor)*  
Individual research, laboratory or studio survey under the supervision of the faculty.

**ARH 602-607 Ph.D. Research**  
*(ECTS units assigned by the thesis advisor)*  
Graduate research with intermediate reviews. Conception, development and defense of a Ph.D. dissertation.

**Architectural Theory and History**

**ARH 510 Theories of Architecture**  
*(6 ECTS: 3-0-8)*  
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 512 Architecture in Philosophy**  
*(6 ECTS: 3-0-8)*  
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**  
*(6 ECTS: 3-0-8)*  
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**  
*(6 ECTS: 3-0-8)*  
In-depth research, analysis and documentation of individual buildings or groups of structures and spaces in local and regional contexts. Development of critical observation and interpretative skills in the study of past Architectures.

**ARH 518 Theory, History and Criticism**  
*(6 ECTS: 3-0-8)*  
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 attitude towards the subjective nature of history.

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

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

**ARH 522 Advanced Computer Aided Design Topics**  
*(6 ECTS: 3-0-8)*  
Review of computer aided design and Programming techniques. Modeling, 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).
ARH 524 Virtual Reality and the Built Environment
(6 ECTS: 3-0-8)
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.

ARH 526 Perception and Cognition in Architecture
(6 ECTS: 3-0-8)
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.

ARH 528 Experimental Art and Architecture
(6 ECTS: 3-0-8)
Examination of what lies beyond the generally accepted limits in contemporary art and architecture. Attempt at the redefinition of art and architecture in innovating ways through projects which ask for theoretical and material constructs. Students are free to choose the topic and are expected to formulate their proposal following research of what they see as related precedents in either field.

ARH 529 Advanced Topics in Architectural Communication Media
(6 ECTS: 3-0-8)
Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

ARH 530 Advanced Building Technology
(6 ECTS: 3-0-8)
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.

ARH 532 Construction Design
(6 ECTS: 3-0-8)
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.

ARH 534 Structural Building Design
(6 ECTS: 3-0-8)
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.

ARH 536 Advanced Construction Materials Technology
(6 ECTS: 3-0-8)
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.

ARH 538 Environmental Building Design
(6 ECTS: 3-0-8)
Study of environmental attributes (thermal, luminous, air quality, acoustic) and their physical dimensions for the development of energy and resource-efficient buildings. Design of climatically advanced buildings based on energy conservation and/or renewal mechanisms and improvement of environmental control systems in buildings – heating, ventilation, lighting, glazing and technical control systems.

ARH 539 Advanced Topics in Architectural Technology
(6 ECTS: 3-0-8)
Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

Urban Planning

ARH 540 The Mediterranean City
(6 ECTS: 3-0-8)
Exploration of histories, characteristics, topographies and urban fabrics of selected port-cities along the Mediterranean. Analysis of the role that location played in the formation of past and present urban identities of considered examples. The goal is to examine the character of urban locus at the interface between land and sea, and to comprehend its influence on the development of historic and contemporary culture.
ARH 542 Space Syntax
(6 ECTS: 3-0-8)
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
(6 ECTS: 3-0-8)
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
(6 ECTS: 3-0-8)
Investigation of planning principles necessary for the communication between architects, urban designers and urban planners when dealing with the 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
(6 ECTS: 3-0-8)
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
(6 ECTS: 3-0-8)
Subjects in this course will vary according to emerging student needs or requests and the educational and research interests of the faculty.

Research Interests of the Academic Faculty

- **Marios C. Phocas**
  Assistant Professor
  His teaching and research activities cover the areas of integrated architectural design, building technology and earthquake resistant structural building design, structural control and earthquake isolation.

- **Christos Hadjichristos**
  Lecturer
  His research interests include architectural theory, the nature of architectural education and knowledge, architectural design, design studio, the nature of architectural culture and practice, domestic architecture, architectural and urban spatial configurations and social praxis, the current and potential relationship between structural and architectural design and the aging of architectural projects.

- **Socrates Stratis**
  Lecturer
  His research interests are concentrated on the horizontal approach between architecture and urbanism, and between research and practice:
  - Process and methodology of architectural design in an urban-architectural scale. The relations between analysis and design in a project based action.
  - Documentation of driving forces that allows a horizontal analysis of relations between building and the city, the issue of translocal.
  - Alternative ways of mapping the city: relations between space and time within the everyday life of the city, mobility issues and migration.

Secretariat
Tel.: 22892246
Fax: 22892247

Graduate Studies Coordinator
Marios C. Phocas
Tel.: 22892269
e-mail: mcphocas@ucy.ac.cy
Introduction

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, magnetic and optical devices, and the processing, control, and transmission of information and energy. The scientific disciplines used in electrical and computer engineering include the theory and application of electrical, electromagnetic and optical phenomena, systems theory, control theory, communications theory, information theory, and computational hardware and software.

The Department of Electrical and Computer Engineering (ECE) is one of the four Departments in the newly established Faculty of Engineering at the University of Cyprus. The ECE Department began admitting undergraduate and postgraduate doctoral students in September 2003. The Master programme began in September 2004.

The Department of Electrical and Computer Engineering offers degree programmes 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 organizations. The faculty in the Department of Electrical and Computer Engineering comprises experienced academics, who are leaders in their fields of expertise.

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 Programme Committee which makes suggestions to the Departmental Board for final approval. Upon acceptance to the programme the student must choose one of the faculty members as his/her supervisor, whom he/she should consult on academic and research issues.

Eligible applicants must hold a university degree granted by an institution recognized in the country where it operates. The degree must have been judged as equivalent to a university degree by the Cyprus Council for Recognition of Higher Education Qualifications. Applicants who do not hold their first degree at the time of application but will hold such a degree before the commencement of the postgraduate programme are also eligible to apply but must submit a letter from the university’s registrar verifying that they are indeed eligible to graduate. The decision on their admission will not become official until the degree has been submitted to the Department.

Each application for admission should include:

1. A cover letter clearly stating the programme for which the candidate wishes to apply.
2. A Curriculum Vitae indicating the student’s education, academic and research experience, any publications, awards, etc.
3. A short statement (up to two pages maximum) stating the reason the candidate wishes to join the programme, his experience, future goals, etc.
4. Letters of recommendation (at least three) from academic or professional advisors.
5. Copies of representative publications if any (no more than three).
6. Copies of all degrees and transcripts. If applicable, a letter from the registrar of the student’s current university verifying the expected graduation date should be included.
7. Copies of any other supporting materials such as exams, honours, awards, etc.
The application materials 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 but not required.

**Graduate Degree Programmes**
The Department offers four graduate degrees:
- Master of Science (M.Sc.) in Electrical Engineering
- Master of Science (M.Sc.) in Computer Engineering
- Ph.D. in Electrical Engineering
- Ph.D. in Computer Engineering

**MASTER OF SCIENCE DEGREES (M.Sc.)**
To be awarded the M.Sc. degree, the student must complete at least 90 ECTS of graduate level coursework, distributed as follows:

- At least 56 ECTS of graduate-level courses.
- 4 ECTS of graduate-level seminars.
- At least 30 ECTS of an original research study, documented by an M.Sc. thesis.

The following rules apply:

- At most 16 ECTS, out of the 56 ECTS for courses, can come from directed study courses such as ECE 711-712.

- Students may enroll in graduate courses offered by another department from the University of Cyprus or any other accredited university. Units outside the Department are approved by the Graduate Studies Committee, and are not to exceed 18 ECTS, unless approved by the Department Council.

- For students who completed graduate level courses as a part of other graduate programmes, at most 18 ECTS from these courses can count towards the 56 ECTS for graduate coursework, after approval by the Department Council.

- To satisfy the 4 ECTS requirement for seminars, each student must attend at least 25 departmental graduate seminar presentations, during the time registered in the ECE graduate programme. The graduate seminar coordinator is responsible for assigning the final grade.

The maximum duration allowed for a M.Sc. degree is set by the University regulations and is currently 4 academic years.

Students admitted into the M.Sc. programme of Electrical Engineering who do not have an undergraduate degree in Electrical Engineering must 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. programme of Computer Engineering without an undergraduate degree in Computer Engineering must possess fundamental knowledge of basic concepts in the following areas: Computer Architecture and Organization, Operating Systems and Algorithms. The student’s Academic Advisor is responsible to guide the student in acquiring the missing knowledge. This may required a maximum of 4 additional courses from the above areas (possibly...
from the corresponding undergraduate programme of
the Department).

DOCTOR OF PHILOSOPHY (Ph.D.)
A graduate student becomes a candidate for a Ph.D.
degree after successfully taking the Qualifying
Examination of the Department and with approval by
the Department. 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), seminars (at least
4 units), and research (at least 180 units). Students
with an M.Sc. or equivalent degrees may be
exempt partially or fully exempt from the course
requirements, after a recommendation of the
Graduate Studies Committee, and subject to
approval by the Department.

2. Passing the Qualifying Examination. Students must
pass the Qualifying Examination by the end of the
second semester after completion of the M.Sc.
degree (or equivalent coursework). This is an oral
test exam based on prior graduate level courses that
the student has taken and on his/her research
potential and activity.

3. Thesis Proposal. The candidate must submit a
thesis proposal, outlining the proposed research
project in a comprehensive and structured manner,
at least 12 months before the intended date of
defense. Upon approval of the proposal by the
student’s advisor, a three to five member thesis
committee is formed. It is composed of at least
two members of the Department’s academic staff,
one of whom must be the student’s advisor. The
other members can be faculty from other
departments or other qualified individuals. The
student is required to meet with his/her thesis
committee once per year to keep the committee
informed of his/her progress and obtain feedback.

4. Doctoral Dissertation. The dissertation must
include significant research findings and must
contain elements which testify to the candidate’s
personal contribution. The research must be
original and of such high caliber that it can be
accepted for publication in international academic
journals.

5. Defense of the Dissertation. The defense of the
dissertation takes place before the thesis
committee. The procedure for the defense
comprises three stages:

a. Presentation of the dissertation in an open
lecture for 35-45 minutes with time available
for questions from the public.

b. Closed discussion of the dissertation with the
members of the committee.

c. Meeting of the committee to make its final
decision.

The maximum duration allowed for a Ph.D. degree is
set by the University regulations and is currently 7
academic years for full-time students and 8 academic
years for part-time students.

Areas of Research
Research in the Department of Electrical and
Computer Engineering focuses on the following
areas:
1. Electronic Devices and Smart Materials
2. Biomedical Engineering
3. Computational Intelligence and Robotics
4. Microelectronic Systems
5. High Performance Computing and Architectures
6. Digital Hardware Design and Testing
7. Photonic Systems and Lasers
8. Power and Renewable Energy Systems
10. Decision and Control
11. Telecommunication Systems and Networks
12. Signal and Image Processing
13. Microwaves and Electromagnetics

Financial Support
The University of Cyprus 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 programs of the Cyprus Research Promotion Foundation and the European Union. There are also some additional funding opportunities, information on which is available through the Office of Academic Affairs and Student Welfare.

Courses Offered

**Major Courses**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>ECTS</th>
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<tr>
<td>ECE 621</td>
<td>Random Processes</td>
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<tr>
<td>ECE 622</td>
<td>Information Theory</td>
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<td>ECE 623</td>
<td>Digital Signal Processing</td>
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<tr>
<td>ECE 624</td>
<td>Principles of Digital Communications</td>
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<tr>
<td>ECE 625</td>
<td>Wireless Communication Networks I</td>
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<tr>
<td>ECE 626</td>
<td>Image Processing</td>
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<td>ECE 627</td>
<td>Communication Theory</td>
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<tr>
<td>ECE 628</td>
<td>Fiber Optic Communication Systems and Networks</td>
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<tr>
<td>ECE 629</td>
<td>Foundations of Systems Engineering</td>
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<td>ECE 630</td>
<td>Modern Decision and Control Systems</td>
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<tr>
<td>ECE 631</td>
<td>Introduction to Computational Intelligence</td>
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<td>ECE 632</td>
<td>Optimization Theory and Applications</td>
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**Other Courses**

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ECE 701/704</td>
<td>Graduate Seminar</td>
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<td>ECE 711-712</td>
<td>Directed Study for M.Sc. Students</td>
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<td>ECE 721-722</td>
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<td>ECE 751-752</td>
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<td>ECE 761-768</td>
<td>Research Stages of Ph.D. Dissertation</td>
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<td>ECE 771-772</td>
<td>Writing Stages of Ph.D. Dissertation</td>
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<tr>
<td>ECE 799</td>
<td>Special Topics in Electrical and Computer Engineering</td>
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Description of Courses

ECE 621 Random Processes
Introduction to classical theorems on measure and integration; finite-dimensional distribution functions; mean-square estimation and orthogonal projection theorem; linear stochastic discrete-time systems; Kalman filtering and Weiner filtering, Wold decomposition; stationary stochastic processes, spectral representation theorem; Markov chains, invariant distributions, stochastic dynamic programming; applications to communication and control systems.

ECE 622 Information Theory

ECE 623 Digital Signal Processing
Discrete-time signals and systems; Fourier and Z-transform analysis techniques, the discrete Fourier transform; elements of FIR and IIR filter design, filter structures; FFT techniques for high speed convolution; quantization effects.

ECE 624 Principles of Digital Communications
Elements of communication theory and information theory applied to digital communication systems. Amplitude and angle modulation (AM, FM, FDM). Sampling and quantization (PCM systems, TDM; digital modulation techniques). Maximum-Likelihood receivers. Information sources, source coding and channel capacity.

ECE 625 Wireless Telecommunication Networks
A comprehensive introduction to theory and practice of wireless computer communication networks. Topics include: Aloha protocols, Time Division Multiple Access (TDMA), Frequency Division Multiple Access (FDMA) and Code Division Multiple Access (CDMA). Cellular systems and channel reuse, channel and code assignments. Power control, ad-hoc and sensor networks.

ECE 626 Image Processing
Introduction to the principles of modern image processing; a brief 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 Communications Theory

ECE 629 Fiber Optic Communications Systems and Networks
Optical Fibers, geometrical-optics description, dispersion, fiber loss, nonlinear optical effects, optical transmitters, LED, LASER, optical receivers, photodetectors, receiver noise, receiver sensitivity, optical amplifiers, dispersion compensation, multichannel optical systems, design and performance of optical systems, optical networks, switch fabrics, node architectures, routing and wavelength assignment techniques, grooming, multicasting and fault detection and restoration.

ECE 631 Foundations of Systems Engineering
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
canoncical forms, and minimum realizations; linear quadratic regulator, pole placement, observers and compensators.

ECE 632 Modern Decision and Control Systems
A continuation of a first course in decision and control systems. Frequency response and state space methods for designing feedback control systems will be covered. Other practical control design issues that will be covered include digital control systems, robust control, adaptive control systems and intelligent control. Case studies for modern control systems design will be investigated.

ECE 634 Introduction to Computational Intelligence
Introduction to the tools and methods in the design, analysis, optimization, and control of industrial systems. Topics include neural networks and their application in complex system modeling, fuzzy logic, information fusion methods, and optimization schemes. MATLAB used as the software platform. Topics in more details: Optimization Methods; Gradient Methods, Linear Programming, Constrained Problems and Lagrange Multiplier Method, Search Method, Ordinal Optimization, Genetic Algorithms, Application. Neural Networks: Basic concepts, Backpropagation algorithm, Competitive learning, Data clustering networks, Application in hierarchical modeling for complex systems, application examples. Knowledge representation methods.

ECE 635 Optimization Theory and Applications
Optimization for non-liner systems without constraints: Gradient based and Newton techniques, convex optimization. Optimization with constraints and Lagrange methods. Dynamic programming. Applications in engineering systems.

ECE 643 Radio and Microwave Wireless Systems
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
Introduction to optics, optoelectronics, lasers and fiber-optics; light sources and propagation of light; lenses and imaging; ray tracing and lens aberrations; interference of light waves, coherent and incoherent light beams; modulators and propagation in waveguides and fibers; photons in semiconductors, semiconductor lasers, detectors and noise effects.

ECE 646 Advanced Antenna Theory

ECE 648 Introduction to Photonics
This course will cover the primary components of a fiber optic system, namely, optical fibers, emitters (semiconductor lasers and light emitting diodes), and photodetectors. It will also provide an overview of the
characteristics and underlying physics of guided wave devices and optoelectronic integrated circuits.

**ECE 649 Electromagnetic Waves and Antenna Theory**

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. 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, 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, and horns.

**ECE 653 Advanced Real-Time Systems**

Basic computer architecture and hardware elements relevant to the study of real-time issues; low-level input/output devices, interrupt controllers, and CPU cores; 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.

**ECE 654 Computer Networks**

This course covers advanced fundamental 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 fundamental systems issues in networking and survey a variety of techniques that have recently been used to address them, including queueing theory, optimization, large deviations, Markov decision theory, and game theory.

**ECE 655 Advanced Operating Systems**

Fundamental principles underlying design of distributed and multiprocessor operating systems; foundations of distributed computing systems; shared multiprocessor systems.

**ECE 656 Advanced Computer Architecture**

Design of high-performance uniprocessors. Advanced pipeline design, dynamic instruction scheduling, branch penalty reduction schemes.

**ECE 657 Computer Aided Design for VLSI**

Principles for the automated synthesis, verification, testing and layout of VLSI circuits, concentrating on the CMOS technology. Basic CMOS technology and design rules. Hardware modeling with VHDL. Algorithms and graph theory concepts for design automation. Logic-level synthesis and optimization of combinational and sequential circuits. Simulation. The physical design automation cycle and CMOS technology considerations. Timing analysis and verification. Fault modeling and testing.

Lab component: Usage of existing academic and commercial CAD tools for several of the above problems. Development (in C/C++) of selected CAD algorithms. Good knowledge and experience in programming and digital circuit design are required.

**ECE 658 Computer Systems Performance Measurement and Evaluation**

Tools and techniques for analyzing computer hardware, software, and system performance. Benchmark programmes, measurement tools, performance metrics. Deterministic and probabilistic simulation techniques,
ECE 659 VLSI Design

ECE 660 VLSI Test
Comprehensive and detailed treatment of digital systems testing and testable design. Fundamental concepts as well as the latest advances are considered. Topics include fault modeling and simulation, combinational and sequential circuit test generation, memory and delay test, and design-for-testability methods such as scan and built-in self-test, and testing of embedded cores in systems-on-chip environments.

ECE 661 Logic Synthesis and Optimization
Advanced design of logic circuits. Theoretical foundations. Technology constraints. Computer-aided design tools and algorithms. Topics include two-level and multi-level synthesis and optimization of combinational circuits, sequential logic synthesis and optimization, timing optimization, technology mapping and verification.

ECE 662 Physical Design Automation
In-depth study of different analytical and heuristic techniques to physical design automation and optimization of VLSI circuits. Emphasis on VLSI design issues encountered in deep sub-micron and nanometer technologies. Theory of circuit layout partitioning and placement algorithms. Performance driven layout. Global and detailed routing.

ECE 663 Distributed Systems
This course covers the basic techniques developed to support networked computer applications. Focuses on synchronization issues, such as global state, election, interprocess communication, distributed mutual exclusion, distributed transaction mechanisms. Also covers consistency models and protocols and replication. Fault tolerance and cryptographic security are also critical topics on distributed systems. Hence, fault models, reliable multicast, commit, checkpointing, recovery, access control, key management and cryptography issues are studied too.

ECE 664 Digital Design with Field Programmable Gate Arrays
This course provides students with fundamental FPGAs chip knowledge and its application to rapid digital system implementation using top down design in VHDL. Laboratory assignments give students learning experiences that enable them to accomplish the programme outcomes.

ECE 665 Instrumentation and Sensors
Signals and Noise, sensors and transducers, signal amplification, data acquisition and conversion, signal measurements and analysis, signal sources and practical issues.

ECE 667 Microwave and Radio-Frequency Circuits
The wave equation; Losses in conductors and dielectrics; RF/microwave transmission lines; Transients on transmission lines; 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
Advanced 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 and hands-on experience with stimulating and recording neural signals.
ECE 680 Power Systems Analysis
Basic and advanced concepts of power systems analysis. Students develop 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, symmetrical faults, bus impedance and admittance matrices, power system stability.

ECE 681 Power Systems Operation and Control
Students learn the basics of power system generation, operation, and control; study system operation terms like economic dispatch, optimal power flow, unit commitment, automatic generation control (AGC), and learn how to apply these ideas to power systems. Dynamic and linear programming will be introduced and applied to solve power system problems. Production costing and fuel scheduling. State estimation in power engineering. Deregulation of the power industry, restructuring, and auctions.

ECE 682 Renewable Sources of Energy: Photovoltaics
Solar insulation. 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.

ECE 701/704 Graduate Seminar
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 711-712 Directed Study for M.Sc. students
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. Requires submission of a final report describing the material examined and the work performed.

ECE 721-722 M.Sc. Thesis
Graduate work leading to the completion of research and writing of a Diploma Thesis. To be arranged by the student and his/her Research Supervisor. Refer to the M.Sc. Diploma Thesis section of the graduate guide for additional information.

ECE 751-752 Directed Study for Ph.D. Students
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. Requires submission of a final report describing the material examined and the work performed.

ECE 761-768 Research Stage of Ph.D. Dissertation
Graduate research leading to a doctoral dissertation. To be arranged by the student and his/her Research Supervisor. Refer to the Doctor of Philosophy Degrees section of the graduate guide for additional information.

ECE 771-772 Writing Stage of Ph.D. Dissertation
Programme of graduate work leading to the written doctoral dissertation. To be arranged by the student and
his/her Research Supervisor. Refer to the Doctor of Philosophy Degrees section of the graduate guide for additional information.

**ECE 799 Special Topics in Electrical and Computer Engineering**
A seminar-type presentation and discussion of special topics in electrical and computer engineering. Opportunity for graduate students and instructors to investigate a topic of common interest. Topic and responsible faculty announced each term, as subjects of interest are identified. These subjects are given independently or sequentially, as circumstances require.

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**Research Interests of the Academic Faculty**

- **Charalambos Charalambous**  
  *Associate Professor*  
  Stochastic Systems, information theory, large deviations and optimization, with applications in robust control, estimation, decision, telecommunications, sensor networks and teleoperation.

- **Georgios Ellinas**  
  *Assistant Professor*  

- **George E. Georghiou**  
  *Assistant Professor*  
  Electromagnetic Field Measurements and Compatibility Testing; Utilisation of Electromagnetic Fields in Emerging Technologies (Transcranial Magnetic Stimulation, DNA Microchip Electrophoresis, Electronic Manipulation of Nanoparticles, Microwaves and RF for Heating and Food Processing); Plasma Processes and Gas Discharges (Plasma Sources at Atmospheric Pressure for Biomedical Applications, Utilisation of Gas Discharges for Plasma Production); Wireless Power Applications; Numerical Modeling of Multiphysics Problems (Development of Serial and Parallel Algorithms, Computational Electromagnetics Calculations); Renewable Sources of Energy.

- **Julio Georgiou**  
  *Lecturer*  
  Low-power analog and asynchronous-digital application specific integrated circuits (ASICs), implantable biomedical devices, bio-inspired electronic systems, silicon-on-insulator design, sub-threshold circuits and systems, sensors and related systems.

- **Stavros Iezekiel**  
  *Associate Professor*  
  Microwave photonics: high-speed laser diodes, photodiodes and modulators, mm-wave fibre radio systems, microwave-photonic packaging, lightwave measurements, all-optical microwave filters.

- **Elias Kyriakides**  
  *Lecturer*  
  Research interests include the modeling and parameter estimation of synchronous machines, electric load forecasting, renewable energy sources, the security and reliability of the power system network, and the optimization of the teaching methods in power engineering using the Internet and modern learning techniques.

- **Maria Michael**  
  *Lecturer*  
  Computer-Aided Design (CAD) for the design and testing of VLSI/ULSI circuits, with focus on the design and analysis of algorithmic methodologies for automated testing, timing analysis and verification, and design of testable logic (such as Built-In Self-Test). Synthesis/re-synthesis aspects for improved testability and verification.

- **Christos Panayiotou**  
  *Assistant Professor*  
  Optimization and control of discrete-event systems with applications to computer communication networks, manufacturing systems and transportation networks.
• Constantinos Pitris

Assistant 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.

• Stavros Toumpis

Lecturer

Research is in the field of wireless communications, with a special emphasis on various types of wireless communication networks, such as 3rd and future generation cellular networks, wireless ad hoc networks, sensor networks, hybrid topologies, etc.

Contact Person

Department Secretary
Tel.: 22892240
Fax: 22892260

Department's webpage:
http://www.ece.ucy.ac.cy
Faculty of Engineering

Department of Mechanical and Manufacturing Engineering
Introduction
Since the early days 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 making an enormous variety of novel useful products such as airplanes and spacecraft, robots and computer chips, sporting goods and medical instruments, while 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 everyday, 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.

The Department of Mechanical and Manufacturing Engineering (MME) provides modern, high quality degree programmes at both undergraduate and postgraduate levels. These programmes emphasize fundamental principles and laboratory practice that prepare young engineers concerned with the challenges of continuing to meet society’s needs in a rapidly changing environment. They undertake conceptualization, design, analysis, and investigation in an academic environment that is based on cooperation between faculty, students, industry, research, and professional organizations. 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 MME Department each year admits graduate students at the Masters (M.Sc.) and Doctoral (Ph.D.) levels. Specifically, the Department offers the following four graduate degrees:

- Master of Science (M.Sc.) in Mechanical and Manufacturing Engineering
- Doctor of Philosophy (Ph.D.) in Mechanical and Manufacturing Engineering

Mission
The mission of the graduate programmes in the MME Department is to promote scholarly research leading to discovery, learning and innovation according to international standards of excellence, in the broader discipline of MME, as well as in related multidisciplinary and interdisciplinary fields. The 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 improvement of life in Cyprus.

Research Areas
Research in the MME Department is focused on many areas such as:

- Thermofluid mechanics and energy systems
- Materials engineering
- Mechanical systems modeling and controls
- Design, manufacturing, automation and robotics
- Micro- and nanotechnology
- Biomedical and biotechnology engineering
- Information and cognitive engineering

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 Service of Academic Affairs and Student Welfare. A number of students can also be financially supported through research programmes.

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

A graduate student is awarded the M.Sc. degree by the Department of Mechanical and Manufacturing Engineering after successfully completing the required course of study and successfully defending and writing her/his M.Sc. thesis, as described in detail below. Depending on the research area of the student’s thesis and the successfully completed graduate courses, the student is awarded a M.Sc. in Mechanical Engineering and Manufacturing Engineering.

The minimum duration of the M.Sc. programme for full-time students in Mechanical and Manufacturing Engineering is 3 semesters, including the summer between the two academic years. The maximum duration allowed for completion of the M.Sc. degree is set by the University regulations.

**Admission to the Master of Science Programme**

The 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.

The candidates must submit a formal application to the Department of Mechanical and Manufacturing Engineering within the announced time limits. All applications are evaluated by the Graduate Studies Committee of the MME 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 MME 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

**Academic Advising**

The schedule of advising is as follows:

- **Academic advisor** – meets with student prior to first registration to plan first semester of study.
- **Research advisor** – selected by the student prior to registering for the second semester.
- **Thesis Committee** – formed by the student and his advisor prior to submitting a thesis proposal. It consists of the research advisor, one member of the faculty of the MME Department, and one more faculty member of the University of Cyprus or the Department.

This schedule ensures that students are well advised and actively engaged in research at the early stages of their programme.

**Course of Study**

The course 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:
• Coursework related to the M.Sc. programme 40 ECTS
  - Graduate courses in MME (24 ECTS)
  - Graduate courses in/outside MME (16 ECTS)

• Thesis Research (MME 701-704) 60 ECTS

• Graduate Seminar I-IV (MME 501-4) 4 ECTS

• Selection of at least one of the following 16 ECTS
  - Additional coursework
  - Independent Study (MME 505-6)

TOTAL 120 ECTS

Students should select, in consultation with their advisors, the courses that will help them in the completion of their M.Sc. thesis, and the course selection must be approved by the MME Department. Most coursework eligible for the M.Sc. programme must be graduate-level courses. However, one undergraduate course outside the MME can be accepted after prior approval by the Department, following a justified petition by the student, signed by his/her academic advisor. In order to count towards the M.Sc. programme requirements, the Graduate Studies Committee of the MME department must approve the petition before the student registers for the respective course. An M.Sc. student is considered full-time if he/she is enrolled in 27 or more ECTS units each semester.

Transfer of Credit and Student Exchanges
A student admitted to the M.Sc. Programme in Mechanical and Manufacturing Engineering from an accredited undergraduate or graduate programme may, upon approval of his/her petition to the MME Graduate Studies Committee, transfer ECTS units for graduate coursework he/she has successfully completed towards the requirements of the M.Sc. degree, according to the General Graduate Studies Regulations.

In the context of inter-university student exchange programs, an M.Sc. student may, in agreement with his/her advisor and approval of his/her petition to the MME 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/her advisor. The student must submit a thesis proposal at least 2 semesters before the intended date of graduation. Upon written approval of the proposal by the advisor, the MME Department will appoint a Thesis Committee, which will consist of the student’s advisor and two additional members with related research interests. The student’s advisor will be the chairperson and coordinator of the Thesis Committee. Midway towards the completion of his/her research the student must submit a progress report to the Committee members for feedback.

Upon successful completion of his/her research, the student must write an appropriate thesis and submit a draft to the Committee for feedback. When the thesis is complete, the student must present his/her work in front of an open audience. After the presentation, the student must defend his/her work to the Thesis Committee. If the defence is satisfactory, the Thesis Committee will sign the thesis and submit two original copies, one for the Department records, and one for the Library. An electronic version of the thesis in PDF format will also be submitted for the Department records and for dissemination. If the thesis is rejected, the candidate is entitled to request a repetition of the thesis once more. In this case, the timing and terms of the resubmission of the thesis are determined by the Thesis Committee.
M.Sc. Programme

1st semester
Course π 8
Course ππ 8
Course πππ 8
Postgraduate Seminar π 1
Thesis Research π 5
TOTAL 30

2nd semester
Course IV 8
Course V 8
Course VI or Independent Study 8
Postgraduate Seminar IV 1
Thesis Research IV 5
TOTAL 30

3rd semester
Course VII or Independent Study 8
Postgraduate Seminar VII 1
Thesis Research VII 20
TOTAL 29

4th semester
Postgraduate Seminar IV 1
Thesis Research IV 30
TOTAL 31

DOCTOR OF PHILOSOPHY DEGREE (Ph.D.)
A graduate student is awarded a doctoral degree by the Department of Mechanical and Manufacturing Engineering upon completing the required course of study and successfully writing and defending her/his Ph.D. thesis, as described in detail below. The student is awarded a Ph.D. in Mechanical and Manufacturing Engineering. The maximum duration allowed for completion of the Ph.D. degree is set by the University regulations.

Admission to the Ph.D. Programme
Applicants to the Ph.D. programme must hold the equivalent of a B.Sc. or a 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 a formal application to the Department of Mechanical and Manufacturing Engineering within the announced time limits. All applications are evaluated by the Graduate Studies Committee of the MME Department, which makes suggestions to the Council of the Department for final approval of the selected candidates. The applicants to the Ph.D. programme are selected according to the following criteria, while the MME 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
- 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 the society
- Availability of graduate positions in the doctoral program and the necessary infrastructure and resources to support the proposed doctoral work

Familiarity with the English language is required for admission to the doctoral programme.

Academic Advising
The schedule of advising is as follows:
- Academic advisor – meets with student prior to registration to plan first semester of study;
• Research advisor – selected by student prior to registering for the second semester;

• Dissertation Committee – formed by the student and his advisor prior to submitting a dissertation proposal and consists of at least three members: the research advisor, one MME faculty member, and one other member (Ph.D. degree holder or equivalent) from inside or outside the University of Cyprus. Furthermore, the Graduate Studies Committee should be represented in the dissertation committee by one member.

• Examining Committee – consists of the members of the Dissertation Committee, one member from another Department of the University of Cyprus or another University or Research Centre and one member from another University or Research Centre. All members must hold a Ph.D. degree or equivalent.

This schedule ensures that students are well advised and actively engaged in research from the early stages of their programme.

Course of Study
The course of study leading to the Ph.D. degree in Mechanical and Manufacturing Engineering requires the completion of a minimum of 240 ECTS units beyond the Bachelors degree. For students proceeding directly from B.Sc. to Ph.D., the 240 ECTS units should be distributed as follows:

• Coursework related to the Ph.D. thesis 56 ECTS
  - Graduate courses in MME (40 ECTS)
  - Graduate course in/outside MME (16 ECTS)

• Thesis research (MME 801-816) 160 ECTS

• Graduate Seminar (MME 601-4) 8 ECTS

• Selection of at least one of the following 16 ECTS
  - Additional coursework
  - Independent Study (MME 605-6)

TOTAL 240 ECTS

Students should select, in consultation with their advisors, the courses that will fulfill the requirements for their Ph.D. thesis. The course selection must be approved by the MME Department. Most coursework eligible for the Ph.D. programme must be graduate-level courses. However, undergraduate courses or and courses outside MME can be accepted with prior approval by the MME Department, following a justified petition by the student, signed by his/her academic advisor. In order to count towards the Ph.D. programme requirements, the Graduate Studies Committee of the MME Department must approve the petition before the student registers for the respective courses. A Ph.D. student is considered full-time if he/she is enrolled in 27 or more ECTS units each semester.

Transfer of Credit and Student Exchanges
A student admitted to the Ph.D. programme in Mechanical and Manufacturing Engineering from an accredited undergraduate programme may, upon approval of his/her petition to the MME Graduate Studies Committee, transfer ECTS units for graduate coursework he/she has successfully completed towards the requirements of the M.Sc. degree, according to the General Graduate Studies Regulations.

Students who have joined the doctoral programme after successfully completing a relevant M.Sc. programme can be credited with up to 60 ECTS units. ECTS units for previously completed graduate work are credited only after approval by the Graduate Studies Committee of the MME Department, following a justified petition by the student.

In the context of inter-university student exchange programmes, a Ph.D. student may, upon agreement with his/her advisor and approval of his/her petition to the MME Graduate Studies Committee, attend courses and conduct research at an accredited university abroad.
Qualifying Examination
Admission to candidacy for the Ph.D. programme is granted when the student has satisfactorily passed a qualifying examination intended to measure fundamental ability and knowledge in Mechanical and Manufacturing Engineering. The examination is evaluated by the departmental Graduate Studies Committee, as well as other faculty members of the MME Department.

For students with a B.Sc. degree, the qualifying examination must be taken no later than three academic semesters after the student enrolled in the Ph.D. programme. For students with an M.Sc degree, the qualifying examination must be taken no later than two academic semesters after the student enrolled in the Ph.D. programme. In case of failure, the student is allowed to repeat the entire qualifying examination once more, in the same or different curriculum areas, at a date mutually agreed between the graduate committee and the student's advisor. The dates and details of the qualifying examination procedure can be obtained from the MME Department secretariat.

In case of second failure in the qualifying examination, the student may submit a written petition for admission to the M.Sc. programme in Mechanical and Manufacturing Engineering. This petition must be submitted while the student is still enrolled in the University, and is reviewed by the MME Graduate Studies Committee, who decides on its acceptance or rejection, as well as on the amount of doctoral work credit transferable to the M.Sc. programme if appropriate. If accepted to the M.Sc. programme, the student must complete all requirements of this programme in order to be awarded the M.Sc. degree. In case the student after a second failure in the qualifying examinations does not submit a written petition for admission in the M.Sc. programme of the MME department, he/she will automatically be expelled from the graduate programme of the MME department.

Ph.D. Thesis
An original research study and a thesis are required for the Ph.D. degree. The subject of the student's research is chosen in consultation with his/her advisor.

Dissertation Proposal
Each doctoral student must prepare a brief written proposal (no more than 20 pages) of his/her intended doctoral research, and make a comprehensive oral presentation on the proposed work 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 done on the topic by the student to date.

The proposal must be made within a year after admission to candidacy (after passing the Qualifying Examination) and at least one year before the intended date of defense. Both the written proposal and oral presentation are presented to the Dissertation Committee and a representative from the MME Graduate Studies Committee. The written proposal must be submitted at least one week before the oral presentation. The prepared portion of the oral presentation should not exceed 30 minutes, and 90 minutes should be allowed for discussion. If the dissertation committee and/or the external members of the Examining Committee and the Graduate Studies Committee representative have concerns about either the substance of the proposal or the student's understanding of the topic, then the student will have one month to prepare a second presentation that focuses on the areas of concern. This presentation will last 15 minutes with an additional 45 allowed for discussion. Students can continue their research only if the proposal is approved.
**Doctoral Dissertation**

The doctoral dissertation must address current and valid scientific and/or technical issue(s) primarily by fundamental research, leading to the creation of new scientific and/or engineering knowledge previously unavailable to the scholarly community. 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 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 underrepresented groups in science and engineering; establishing physical infrastructure (laboratory resources, software programs, etc.) and virtual resources (centers, 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.

Further details on the format requirements and the posting procedures of the doctoral dissertation can be obtained from the MME Department secretariat.

**Dissertation Defence**

Each doctoral candidate is required to defend the originality, independence, and quality of his/her research during an oral dissertation defence that is administered by an Examining Committee. The Examining Committee has five members and consists of the three members of the Dissertation Committee, a member from another department of the University of Cyprus or another University or Research Institute who has relevant knowledge to the Ph.D. research topic, and a member from another accredited University or Research Institute (both members must hold a Ph.D. degree or equivalent). Head of the Examining Committee is a member of the MME Graduate Studies Committee but not the research advisor.

The defense is open to the public and consists of a presentation by the candidate no longer than one hour, followed by a one-hour open discussion, including a concluding closed session of the examining committee, who will then assess the doctoral work. At least one week prior to the defense, the candidate must provide a copy of the dissertation to each member of the examining committee. At the same time, the candidate must make additional copies available to members of the university community, who wish to read the dissertation prior to the defense, and he/she must also arrange for public notification of the defense by the MME Graduate Studies Committee.

The Examining Committee will determine the acceptability of the candidate’s dissertation and oral performance and propose both modifications to the written dissertation if appropriate and a timeframe plan for the candidate to address such changes, in mutual agreement with his/her advisor. In this case, the dissertation advisor will determine the successful and timely conformance of the candidate to the modifications suggested by the examining committee. If the defense is satisfactory, the dissertation committee will sign the dissertation, and the candidate must submit two original hard copies, one to the University Library and one for the MME Department records, as well as an electronic version of the dissertation to the MME Department for
If the dissertation is rejected, the candidate is entitled to request a repetition of the defense once more. In this case, the timing and terms of the resubmission of the dissertation must be set out in writing by the Examining Committee.

**Graduate Level Courses**

A student must successfully take a number of courses related to his/her graduate programme of studies, i.e., Mechanical and Manufacturing Engineering, which will credit him with the necessary ECTS according to his programme requirements. Graduate courses at the 500-level are also open as electives to advanced undergraduate students, while graduate courses at the 600-level are reserved for graduate students only (M.Sc. and Ph.D. programmes).

**Ph.D. Programme**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st semester</td>
<td>Course π</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Course ππ</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Course πππ</td>
<td>8</td>
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<tr>
<td></td>
<td>Postgraduate Seminar π</td>
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<td>Thesis Research π</td>
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<tr>
<td>2nd semester</td>
<td>Course IV</td>
<td>8</td>
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<tr>
<td></td>
<td>Course V</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Course VI</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Postgraduate Seminar ππ</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Thesis Research πI</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>30</td>
</tr>
<tr>
<td>3rd semester</td>
<td>Course VII</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Course VIIπ or Independent Study</td>
<td>8</td>
</tr>
<tr>
<td>4th semester</td>
<td>Course IX or Independent Study</td>
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<tr>
<td></td>
<td>Postgraduate Seminar IV</td>
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<tr>
<td></td>
<td>Thesis Research πII</td>
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<td>TOTAL</td>
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<tr>
<td>6th semester</td>
<td>Thesis Research VI</td>
<td>30</td>
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<td></td>
<td>TOTAL</td>
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<tr>
<td>7th semester</td>
<td>Thesis Research VIII</td>
<td>20</td>
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<tr>
<td></td>
<td>Thesis Writing I</td>
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</tr>
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<td>30</td>
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<tr>
<td>8th semester</td>
<td>Thesis Research VIII</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Thesis Writing I</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>30</td>
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**Mechanical and Manufacturing Engineering Graduate Courses**

<table>
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<tr>
<th>Course</th>
<th>Description</th>
<th>ECTS</th>
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<td>MME 501-4</td>
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<td>MME 601-4</td>
<td>Graduate Seminar I-IV</td>
<td>may vary</td>
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<td>MME 505-6</td>
<td>Independent Study</td>
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<tr>
<td>MME 605-6</td>
<td>Independent Study</td>
<td>8</td>
</tr>
<tr>
<td>MME 701-704</td>
<td>Thesis Research I-IV (M.Sc.)</td>
<td>may vary</td>
</tr>
<tr>
<td>MME 801-808</td>
<td>Thesis Research I-VIII (Ph.D.)</td>
<td>may vary</td>
</tr>
<tr>
<td>MME 809-816</td>
<td>Thesis Writing (Ph.D.)</td>
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**Description of Graduate Courses**

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 MME curriculum. After the number, name and description of each course, there is an indication of any necessary prerequisites.

**MME 501-4 Graduate Seminar I-IV (1 ECTS)**

*Course must be continued over multiple semesters*

Obligatory participation of the students enrolled in the M.Sc. graduate programme of the Department of Mechanical and Manufacturing Engineering in all graduate seminars, organized by the MME department for four semesters. Open to M.Sc. students and advanced undergraduates as an elective.

**MME 505-6 Independent Study (8 ECTS)**

*Course may be continued over multiple semesters*

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 at the MME Department. May be carried out by teams, with the contribution of each student clearly defined. Open to M.Sc. students and advanced undergraduate students as an elective.

**MME 601-4 Graduate Seminar I-IV (1 ECTS)**

*Course must be continued over multiple semesters*

Obligatory participation of the students enrolled in the Ph.D. graduate program of the Department of Mechanical and Manufacturing Engineering in all graduate seminars,
organized by the MME department for four semesters. Open to Ph.D. students only.
In MME 604, besides the compulsory participation in all seminars given in the MME department during the 4th semester, the student must submit written documentation (no more than 20 pages) followed by presentation on a topic relevant to those presented in the MME department. The topic chosen by the student need not be directly related to his/her research interests.

**MME 605-6 Independent Study (8 ECTS)**

*Course may be continued over multiple semesters.*

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 at the MME Department. May be carried out by teams, with the contribution of each student clearly defined. Open to Ph.D. students only.

**MME 701-704 Thesis Research I-IV (M.Sc) (ECTS vary)**

Programme of graduate research leading to the defence and writing of M.Sc. thesis. Open to M.Sc. students only.

**MME 800 Qualifying Examination (See page 225).**

**MME 801-808 Thesis Research I-VIII (Ph.D) (ECTS vary)**

Programme of graduate research leading to the defence and writing of Ph.D. thesis. Open to Ph.D. students only.

**MME 809-816 Thesis writing (Ph.D) (10 ECTS)**

**MMK 511 Transport Phenomena (8 ECTS)**

Conservation laws, with an emphasis on the similarities between the different mechanisms for the transport of heat, mass and momentum. Theory of molecular transport. Diffusion phenomena in stationary, flowing and unsteady processes. Mass diffusion in chemically reacting, multiphase and multi-component systems. Computational techniques. Selected special topics and applications may include turbulent convective flows, combustion and materials processing.

(Prerequisites: instructor's consent)

**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 reacting systems. Modern computational equations of state. Thermodynamics of condensed phases, including solutions. Thermodynamics of biological systems.

(Prerequisites: instructor's consent)

**MME 513 Computational Fluid Mechanics (8 ECTS)**

This course is devoted to the numerical solution of partial differential equations encountered in engineering sciences. Finite difference and finite element methods are introduced and developed in a logical progression of complexity. These numerical strategies are used to solve actual problems in a number of actual engineering problems. Computer exercises are required to illustrate the concepts discussed in class.

(Prerequisites: knowledge of a computer language and advanced level courses in transport phenomena and continuum mechanics).

**MME 514 Incompressible Fluid Dynamics (8 ECTS)**

An introduction to graduate level fluid dynamics including dimensional analysis, Eulerian and Lagrangian descriptions, flowlines, conservation equations, governing equations of viscous fluid motion, exact solutions of Navier-Stokes and Euler equations, unsteady flows, laminar boundary layer theory, turbulence, separation, Stokes flow, vorticity dynamics, potential flow and surface flows.

(Prerequisites: fundamentals of thermodynamics and mechanics, knowledge of advanced mathematics, undergraduate courses in fluid mechanics).

**MME 515 Introduction to Parallel Computing for Engineers: Architectures, Algorithms, and Applications (8 ECTS)**

Parallel architectures design, examples of parallel computers, fundamental communication operations, performance metrics, parallel algorithms for sorting, matrix problems, graph problems, fast Fourier transforms, dynamic load balancing, types of parallelisms, parallel programming paradigms, message passing programming in MPI, shared-address space programming in threads. Focus areas may cover unstructured mesh applications, turbulence and combustion, nanofluids and molecular dynamics, industrial applications, climate modeling, atmospheric and oceanic global simulation, and interdisciplinary applications.

(Prerequisites: instructor's consent)

**MME 521 Computer-Controlled Systems (8 ECTS)**

Focus on design and control of mechanical systems, employing digital computers as real-time controllers. Mathematical difference models, Z-transforms, and sampled control techniques in the frequency and time domain.
Design of discrete-time controllers by conversion from continuous-time or directly. Students use graphical programming (Matlab/Simulink) and instrumentation software (LabVIEW) to programme their control strategies developed in simulation, and to interface with hardware sensors and actuators in laboratory exercises: monitoring and control of meteorological signal station, computerized electrocardiograph monitor, controlled separation vessel in a chemical plant, and illumination control system for machine vision.

(Prerequisites: MMK 321 or consent).

MME 522 Multivariable Feedback Control (8 ECTS)
This course extends basic undergraduate courses on control to multi-input multi-output linear systems. Concepts such as state space representation, controllability, observability, multivariable frequency response functions, zeros and poles are introduced. Design of controllers by pole and zero placement. Robustness as a means of dealing with uncertainty. Matlab course projects for modeling and controlling real case multivariable processes.

MME 523 Signal Processing (8 ECTS)
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.

MME 524 Modeling and Analysis of Dynamic Systems (8 ECTS)
The idea behind this course is to use a unified approach to 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 the mechanics of deriving equations but rather on understanding how the engineering task defines the modeling objectives that determine what modeling assumptions are appropriate. The bond graph language, which is a graphical power topology of a dynamic system, is taught to help students easily represent models of multi-energy domain systems. This then allows causality, as well as system analysis tools, to be used to determine the correctness of the modeling assumptions. Project-like problem sets are required to reinforce the theoretical concepts presented in the lecture. A final project on a topic of the student's research area will reinforce the concepts taught in this course.

(Prerequisites: Undergraduate-level technical mathematics and dynamics, English language or instructor's consent).

MME 531 Continuum Mechanics (8 ECTS)
Emphasis on the distinction between general principles that apply to all deforming materials and the specific constitutive assumptions that are made when modeling material behaviour. The course includes a brief review of the necessary mathematics and then proceeds to the kinematics of deformable media, the concepts of stress and strain transformations, and the general balance laws. The remainder of the course examines general constitutive theory and constitutive relations for selected materials that relate to structural, fluid dynamics, materials processing and materials handling. Also covered are exact solutions for bending and torsion: thick-walled pressure vessels, rotating disks, stress functions for two- and three-dimensional problems and bending and torsion of non-symmetric beams. (Prerequisites: instructor's consent).

MME 532 Advanced Mechanics of Vibration (8 ECTS)
Engineering structures, in response to impact, wind, imbalance and any other load of time-varying nature, vibrate. This course aims to familiarise students with techniques of modeling and analysing both theoretically and experimentally vibrating structures. Topics offered: simple harmonic motion and forced vibration of single degree of freedom systems, derivation of equations of motion of systems with coupled coordinates using generalized coordinates and Langrange’s equations, forced vibration analysis of multi-degree of freedom systems, theoretical and experimental determination of mode shapes, vibration analysis of continuous systems and introduction to structural modification as a means of controlling vibration levels. A combined experimental and computational course project.

MME 533 Fundamentals of Engineering Acoustics (8 ECTS)
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, sonar, and sound propagation in gasses and fluids. 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.

(Prerequisites: MME 331 or instructor’s consent)
MME 534 Topics in Biomedical Ultrasound (8 ECTS)
This course covers a variety of concepts and applications in biomedical ultrasound for engineering and science majors. Topics covered are: acoustic wave equations and ultrasonic absorption, directional radiation, vibrating piston, and focusing; medical ultrasonic arrays and medical equipment output measurements; wave distortion, harmonic generation and shock formation; medical imaging, nonlinear imaging techniques and bubble dynamics for ultrasound contrast agents; thermal and mechanical effects of ultrasound in medicine.
(Prerequisites: MME 533)

MME 535 Medical Diagnostic Imaging (8 ECTS)
This course is an introduction to the physics and engineering principles associated with ultrasound, magnetic resonance, computed tomography, and nuclear imaging. It covers a review of Fourier transformations, basic concepts in human physiology and anatomy, and image formation. In ultrasound it covers wave propagation and scattering of sound, beam formation and focusing, medical arrays, Doppler, and tumor imaging with contrast agents. It also covers the fundamentals of magnetic resonance and spectroscopy, pulse sequences and MR contrast. In X-ray and computer tomography absorption and scattering as well as contrast is covered. In nuclear imaging the course covers radioactivity and type of radioactive decay, positron emission and single photon computer tomography (PET/SPECT).
(Prerequisites: MME 103, MAS031, ENG 104 or instructor’s consent)

MME 536 Introduction in Magnetic Resonance (8 ECTS)
This course is designed for graduate students and senior undergraduates who seek an in-depth knowledge in Magnetic Resonance Imaging. It focuses on the principles and physics of nuclear magnetic resonance, imaging processing and reconstruction, hardware systems and instrumentation. It requires prior knowledge of simple and advanced mathematics, linear systems and image processing, as well as basic knowledge of electrical circuits. Integral to understanding such a diagnostic modality is some basic knowledge of radiography and physiology of major organ systems such as the cardiovascular and neurovascular, for which reference is made. The course will introduce students to some advanced imaging techniques and novel methods of MRI. The course covers the fundamentals of Magnetic Resonance, pulse sequences and image contrast, signal, noise and resolution, hardware and spectroscopy, the molecular environment and relaxation and spectroscopy and spectroscopic/multinuclear imaging. Advanced topics discussed include cardiac imaging, parallel imaging, frequency selective techniques, flow encoding, angiography, diffusion, elastography and MRI.
(Prerequisites: MME 103, MAS 031, MAS 033, ENG 104 or instructor’s consent).

MME 541 Manufacturing Process Automation (8 ECTS)
In-depth study of the physical dynamics in the wider spectrum of manufacturing processes, assessing their potential for automation. Review of classical background in thermodynamics, fluids and mechanics together with dynamic systems and controls, in the context of analysis and design for automation of individual manufacturing processes. Modeling and control issues examined in comparative studies of metal cutting, forming, bulk deformation, joining, welding, casting, and sintering in processing of ceramic, semiconductor and composite material processing. 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 (Matlab/Simulink) 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 part inspection station, automated bottle labeling robotic cell, thermal control of welding with infrared feedback, or automated assembly with machine vision. They also undertake the complete, real-world design of an automated plant such as a bakery.
(Prerequisites: MME 321, MME 341 or instructor’s consent)

MME 542 Introduction to Robotics (8 ECTS)
Broad review of theoretical and practical aspects of robotic manipulators and locomotion automata. Historical introduction to robotics through the arts and primitive technology, and anatomical and physiological analogies to the human body providing the context for principal concepts. Arm/leg configurations, statics, kinematics, dynamics, trajectory planning, control and navigation are examined together with hardware technology (end effectors, sensors, and machine vision), programming and applications. Current research directions in robotics are identified, as well as applications in modern industry, reinforced by illustrative videos. Emphasis on hands-on programming of a tabletop assembly robot with a vision system and walking robot prototypes in the laboratory. Robot demonstration projects in applications of the students’ interest: building structures with block elements, navigating mazes and assembling puzzles, searching for
parts with a variety of sensors, playing table games, checkers, pool and mini-golf against the robot, and graphically simulating the motion of an arm or mobile robot platform on the computer.

(Prerequisites: MME 221, E 341 or instructor’s consent)

MME 551 Characterization Methods of Polymers and Colloids (8 ECTS)
This course outlines different methods used in the characterization of “soft materials”. Introduction to Polymers and Colloids. The techniques discussed are the following: Liquid adsorption chromatography (LAC) and size exclusion chromatography (SEC); osmometry and viscometry; analytical ultracentrifugation (AUC), field flow fractionation (FFF) and capillary hydrodynamic fractionation (CHDF); dynamic mechanical analysis (DMA); scattering techniques: dynamic (DLS) and static (SLS) light scattering, X-ray and neutron scattering (SAXS, WAXS, SANS); microscopy techniques: transmission electron microscopy (TEM), scanning electron microscopy (SEM) and atomic force microscopy (AFM); methods used in determining glass transitions of polymers and mass spectrometry techniques used in polymer characterization. The course includes demonstrations and/or lab experiments.
(Prerequisites: instructor’s consent)

MME 552 Semiconductor Materials: Properties and Applications (8 ECTS)

MME 553 Surface Engineering (8 ECTS)
Surface Engineering is an enabling technology encompassing surface treatment and thin film and coating deposition. Engineering a surface can substantially improve the wear and corrosion resistance of structural components to give enhanced component lifetime and material protection. The substrates involved may be metallic, ceramic or polymeric and the coating or treatment layers employed equally diverse. The processes involved range from traditional, well-established techniques (e.g. painting, electroplating and galvanizing), to more technologically demanding coating technologies and surface treatments (e.g. physical and chemical vapor deposition, ion implantation and laser treatment) which have benefited from recent innovations. Thus the mechanical/materials engineer is faced with a multitude of options when selecting a treatment to engineer the surface of a component or structure. This course will introduce and explore these options.
(Prerequisites: instructor’s consent)

MME 554 Materials Characterization Techniques (8 ECTS)
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.
(Prerequisites: instructor’s consent)

MME 555 Polymer Properties and Polymers in Medical Applications (8 ECTS)
The course is divided into two parts. The first part deals with the mechanical and rheological properties of polymers as well as the structure-properties interrelation in polymers. In the second part, topics related to polymeric biomaterials and their medical applications are discussed: Biodegradable polymers, biopolymers, polymers as drug-delivery systems, use of polymers in dental applications, immobilization of enzymes on polymers, polymer hydrogels and their medical and pharmaceutical applications, polymeric membranes. Polymer-bound antibodies and antigens. Polymeric templates in tissue engineering.
(Prerequisites: instructor’s consent)

MME 556 Fundamentals of Ceramics (8 ECTS)
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 – Sintering and grain growth – Phase equilibria – Mechanical, thermal, dielectric and optical properties.
(Prerequisites: instructor's consent)
MME 561 Lasers and their Applications (8 ECTS)
In science fiction movies of the 1950s, there were often monsters who could emit lethal rays of light from their eyes, but until the invention of the laser, such concentrated and powerful energy beams were only fantasy. Today it is possible to modify, probe or destroy matter using the highly focused radiation from energy sources known as lasers. Lasers are part of everyday tasks, such as reading grocery prices, measuring the size of a room, playing music on compact disks and printing or copying paper documents. Lasers also play a key role in modern production processes; they can contribute to improving products, conserving raw materials and opening up new opportunities. Laser welding is used by the automotive industry and lasers are used in computer chip manufacturing. They are used and developed just as successfully in other application areas such as medicine. This course offers an introduction to lasers and their wide range of applications.
(Prerequisites: instructor’s consent)

MME 562 Semiconductor Processing Technology (8 ECTS)
(Prerequisites: instructor’s consent)

MME 563 Materials Physics (8 ECTS)
(Prerequisites: instructor’s consent)

MME 564 Nano-Scale Mechanics and Thermodynamics (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. This course aims to:
(1) introduce students to nanotechnology and emphasize its great potential and applications by providing different examples.
(2) provide the basic classical, statistical and quantum mechanics and thermodynamics required to characterize nano-mechanical devices.
(3) explain the function of different equipment used in visualization of nano-devices. Students will be given the opportunity to have practical contact with an Atomic Force Microscope.
(Prerequisites: ENG 100, 104, MAS 031, MAS 032, MAS 033, MAS 034, MME ALL or instructor’s consent)

MME 565 Physical Principles, Design and Fabrication of MEMs (8 ECTS)
This course is intended to provide in depth knowledge of micro-electro-mechanical systems (MEMs) by giving emphasis to the relevant physical principles, design and fabrication. A historical overview is given to begin with, followed by a discussion of the relevant length scales, market analysis and motivation. Simple MEMs devices are described, e.g. switches, comb drives, pressure sensors with emphasis on the transduction principles i.e. mechanical, electrostatic, thermal, piezoelectric in order to gain in depth understanding of device operation and issues pertaining to design and fabrication.
Detailed attention is then given to the fabrication of MEMs using standard integrated circuit (IC) processing technology. In particular the various types of lithography i.e. photolithography, electron beam lithography, soft
lithography etc are covered along with thin film deposition, wet and dry etching methods. Surface and bulk micromachining are also explained together with hot embossing and micro-molding. Finally issues pertaining to assembly, packaging and reliability are covered for completeness. Having developed an understanding of basics, Intellisuite is introduced in the context of MEMs CAD with the aim of using it in the remainder of the course which is strongly focused on advanced MEMs. These include: RF MEMs, Piezo MEMs, MOEMs, BioMEMs, μ-Fuel Cell MEMs. Laboratory practice involves the design, analysis and simulation of MEMs devices using Intellisuite and the fabrication of one MEMs device using the clean room facility i.e. mask aligner, electron beam lithography, wet bench for chemical etching, sputtering etc.

(Prerequisites: ENG100 or instructor's consent)

MME 611 Statistical Theory and Modeling of Turbulent Flow (8 ECTS)
Averaging and correlations, vorticity and vortex stretching, and the energy cascade. Reynolds stresses; introduction to transport equations. Length scales and spectra; "universal" scaling of small eddies. Introduction to computational methods; DNS, LES, RANS. Introduction to modeling methods; local equilibrium, stress-transport, eddy-viscosity and structure-based. Topics on complex flows; strongly rotated turbulence, magnetohydrodynamic turbulence; astrophysical turbulence.

(Prerequisites: intermediate dynamics and vibrations, English).

MME 621 Advanced Engineering Controls (8 ECTS)
Comprehensive overview of advanced control algorithms and tools essential to mechanical engineering and manufacturing research: Formal energy-based modeling methods (linear and bond graphs), multivariable optimal control and observation, nonlinear systems and control algorithms, in-process parameter identification and adaptive control, time-varying systems and robust control, and distributed-parameter systems and controls. The course is based on case studies of theoretical methods with practical applications, and includes analysis by computer simulation and design projects applied to the students' own research.

(Prerequisites: MME 521 or instructor's consent)

MME 622 Non-Linear Dynamics (8 ECTS)
The course introduces the basic theory of non-linear dynamics and emphasizing its applicability to mechanical and biological systems. Topics studied include simple non-linear models, fixed points, their characterization, and stability. Dynamical system reduction: the centre manifold and normal forms. Bifurcation as a means to chaotic behaviour. Frequency response function of the Duffing oscillator and its use in modeling the non linear vibrations of a buckled beam, memory recall and mood switches. Reconstruction of non-linear dynamics from experimental observations using delay coordinates.

(Prerequisites: simple undergraduate engineering mathematics; familiarity with linear ordinary differential equations and linear algebra).

MME 623 Advanced Multi-Body Dynamics (8 ECTS)
This course will study the motion of rigid bodies in three-dimensional space. The kinematics and dynamics of rigid bodies will be examined. Modern analytical rigid body dynamics equation formulation and computational solution techniques applied to mechanical multibody systems. More specifically the following topics will be covered. Kinematics of motion generalized coordinates and speeds, analytical and computational determination of inertia properties, generalized forces, Kanes's equations, Hamilton's principle, Lagrange's equations, holonomic and nonholonomic constraints, constraint processing, and computational simulation.

(Prerequisites: instructor's consent)

MME 631 Non-Linear Acoustics (8 ECTS)
This course will introduce nonlinear acoustics, the study of intense sound waves for which linear acoustics is not applicable. Nonlinear acoustics is pertinent in many areas including biomedical ultrasound, underwater acoustics, noise control, and enhancement of industrial processes. The course covers: distortion and shock formation in finite amplitude waves; harmonic generation and spectral interactions; absorption and dispersion; radiation pressure; acoustic streaming; weak shock theory; numerical modeling; diffraction of intense sound beams; parametric arrays; bubble dynamics; nonlinear imaging techniques.

(Prerequisites: MME 533, MME 534).

MMK 641 Thermal Manufacturing Processes (8 ECTS)
In-depth analysis and design of advanced thermal manufacturing processes, with emphasis on departmental research activities. Review of the related literature, as well as the state of the art in hardware and software for thermal modeling and control of traditional and non-traditional manufacturing techniques. Background in thermal sciences is applied to manufacturing processes, invariably involving dynamic heat and/or mass transfer phenomena. Principles, implementation, simulation and control of thermal processes such as arc, plasma, Laser, ultrasonics, and spray for cutting, joining, rapid prototyping and rapid thermal processing of materials. Topics include thermal modeling,
covering analytical, numerical and experimental methods, as well as control techniques, including multivariable, distributed-parameter and adaptive algorithms. Hands-on projects in the Hephaistos Manufacturing Laboratory. (Prerequisites: MMK 521 or instructor’s consent)

**MME 651 Electronic and Magnetic Oxides (8 ECTS)**
(Prerequisites: instructor’s consent)

**Research Interests of the Academic Faculty**

- **Andreas Alexandrou**
  **Professor**
  His research interests and contributions are in basic fluid flows with applications in the environment, processing of materials, and in wake flows.

- **Michalis A. Averkiou**
  **Assistant Professor**
  His research interests are in the area of diagnostic ultrasound imaging, therapeutic applications of ultrasound, drug-targeted delivery, ultrasound-mediated gene transfection, and sonothermolysis. He is particularly interested in microbubble ultrasound contrast agents and their applications including imaging and quantification of the perfusion bed of various organs and cancers.

- **Christakis Constantinides**
  **Assistant Professor**
  The goal of his research endeavors is the complete characterization of the electromechanical function of the heart in small animals and humans, aiming to facilitate the understanding of human disease that is predominantly underlined by genetic causes. His broad research interests lie in the areas of physiology, cardiac mechanical function and molecular biomedical imaging. Specifically, his particular interests are on hardware design, non-linear reconstruction algorithms, tissue structure modeling and simulations, implanted devices, interventional catheterization techniques, and cellular tracking methods, using novel diagnostic micro-imaging techniques with emphasis on Magnetic Resonance Imaging. Other interests involve the implementation of safety and quality assurance programs in diagnostic imaging.

- **Haralabos Doumanidis**
  **Professor**
  His research interests include nanomanufacturing, thermal manufacturing, material deposition and joining processes, rapid prototyping, rapid thermal processing and laser annealing of semiconductors, distributed parameter system modeling and control, robotics and mechatronics, and biomedical instrumentation.

- **Ioannis Giapintzakis**
  **Associate Professor**
  His research interests lie in the area of experimental materials science and technology: thermoelectric oxides, low-dimensional quantum magnets with high thermal conductivity, half-metallic ferromagnets, spintronic devices, giant magnetoresistive oxides, magnetic properties of carbon-based nanostructures, and high-temperature superconductors.

- **Stavros Kassinos**
  **Assistant Professor**
  His research interests include modeling and simulation of complex turbulent flows, modeling and simulation of magnetohydrodynamic and magnetogasdynamic flows, biomedical flows, computational methods for multiscale phenomena as they apply to nanotechnology issues, thermodynamics, and renewable energy sources.

- **Theodora Krasia-Christoforou**
  **Lecturer**
  Her research interests are focused on the areas of polymer synthesis, characterization and applications of synthetic polymeric materials. She is particularly interested in novel polymers of different architectures and chemical compositions comprising various functionalities capable of responding to external stimuli (such as temperature or pH changes), binding onto inorganic matter (catalytic and optoelectronic applications), adsorbing and releasing solutes (drug-release systems), binding onto biological molecules etc. She is also interested in the preparation of polymeric systems with the ability for microphase separation, leading in the formation of well-organized nanomorphologies in solution and in the solid state.

- **Andreas Kyprianou**
  **Lecturer**
  His research interests include non-linear systems, dynamic modifications and robustness, modern signal processing techniques, statistical mechanics and their application to nanomechanics.
• **Theodora V. Kyratsi**
   
   Lecturer
   
   Her teaching interests include Material Science and Engineering, Material Characterization Techniques, Advanced Materials in Engineering, Materials for Energy Generation and Storage. Her research interests lie in the areas of material science (material optimization, doping techniques and solid solutions, annealing, sintering, intercalation), material characterization, X-rays techniques, thermal analysis, charge-transport - Thermal - Optical properties, thermoelectric materials for cooling applications and power generation.

• **Loucas S. Louca**
   
   Lecturer
   
   His research interests lie in the areas of system dynamics and control, bond graph theory, physical system modeling and model reduction of large-scale systems, modeling of automotive systems, multi-body dynamics, computer aided modeling and simulation. He is particularly interested in automating the process of generating efficient dynamic models for use in the system and control design process. He is the author of CAMBAS (Computer Aided Model Building Automation System) an automated modeling software that enables the rapid development of efficient models for linear systems and its use in teaching courses in modeling of dynamic systems.

• **Claus G. Rebholz**
   
   Assistant Professor
   
   His research interests and contributions are in the area of Materials and Surface Engineering, especially in the development characterization of nano-composite/-structured hard and wear-resistant thin films, produced by various vacuum coating and surface modification techniques.

• **Matthew Zervos**
   
   Lecturer
   
   His research interests include semiconductor device fabrication, characterization and modeling with particular emphasis on photovoltaic solar cells which are based on III-V semiconductors like GaAs, InP, GaN etc but also Si. In addition he is interested in nanotechnology and in particular nanowires and nanodots, their fundamental properties and aspects of their integration into functional devices via bottom-up methods for a diverse range of applications (e.g. nanosensors). Finally his interests include fabrication of micro electro mechanical systems (MEMs) for biological applications.

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**Conduct Persons**

**Graduate Programme Coordinator**

Theodora Krasia-Christoforou

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Tel: 22892288

**Department Secretariat**

Maria Markou

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Tel: 22892250 - 22892280

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Faculty of Letters

Department of Byzantine and Modern Greek Studies
Introduction

The Department of Byzantine and Modern Greek Studies includes the fields of Byzantine Philology, Modern Greek Studies, Comparative Literature, Theory of Literature and Linguistics.

The Department offers

(a) a postgraduate programme in Modern Greek Studies, and

(b) a postgraduate programme in Byzantine Studies (in collaboration with the Department of History and Archaeology).

Both postgraduate programmes are offered at two levels: a Master Degree and a Ph.D. Degree. The postgraduate programme in Modern Greek Studies also includes 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 interdepartmental programme in Byzantine Studies at the level of Master Degree will start 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 the postgraduate programmes of other departments of the University of Cyprus, as well as with other European Universities. For this purpose and to promote interdisciplinary research in the frame of the postgraduate programmes, the Department holds exchange programmes with other Universities, with the National Institute of Oriental Languages and Cultures of the University of Paris (Paris IV), the Institute of Greek and Latin Philology (Division of Byzantine and Modern Greek Philology) of the University of Hamburg, the Department of Greek Philology of the University of Athens and the Department of History of Art of the University of Granada.

INTERDEPARTMENTAL POSTGRADUATE PROGRAMME IN BYZANTINE STUDIES

(See page 259)

Programme Coordinator for the Department

Martin Hinterberger
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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, archive studies, 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 organization 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.).

Master Degree

Number of Students

Twelve (12), including Ph.D. students

Admission of new students

Every September
Admission Requirements

1. B.A. in Modern Greek Literature or related subject (upper second class minimum) and detailed list of courses taken during undergraduate studies.
2. Brief C.V. and a report on academic and research interests.
3. Two reference letters.
4. Written exam in: a) Modern Greek Literature, b) one foreign language.
5. Interview by the academic staff of the Programme.

Course Duration

Full time programme (i.e., four semesters). With the approval of the supervisor the course duration may extend for four more semesters.

Academic Requirements

1. Completion of 120 ECTS, of which:
   - 80 ECTS are obtained through successful attendance of the postgraduate seminars (10 ECTS correspond to each seminar)
   - 10 ECTS for the research carried out in relation to topic of the dissertation
   - 30 ECTS for the completion of the dissertation.

Analytical Programme of Studies

First Semester
Completion of three postgraduate seminars (30 ECTS).

Second Semester
Completion of two postgraduate seminars (30 ECTS).

Third Semester
- Assignment of a research topic, which will lead to the M.A. dissertation (10 ECTS).
- Completion of two postgraduate seminars (20 ECTS).

Fourth Semester
Writing of the M.A. dissertation under supervision, and submission of the dissertation, which must first be presented at the colloquium (30 ECTS). On the Colloquium see point 4 in the Structure of the Programme below.

Structure of the Programme

1. Postgraduate seminars cover five periods:
   A. 11th- 14th centuries (code nos. BMG 641-650)
   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 11th – 12th c. (Digenis Akritas, Ptochoprodromos); allegoric poetry (Logos Parigoritikos, Istoria ton Tetrapodon Zoon); the romances (Kallimachos & Chrysooroi, Imperios & Margarona) and other historical narratives (Istoria Velissarioi, Diegesis Achilleos). Special attention is given to the early period of Cretan literature, and to poets such as Stephanos Sachlikis and Marinos Falieros.
   B. 15th – 17th centuries (code nos. 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 literary production of Crete from the early Renaissance period (Bergadis’ Apokopos) to the period of the ‘Cretan bloom’ (Erotokritos, Thysia tou Avraam, Erofili, etc.), and the medieval-renaissance literature of Cyprus (from the Chronicle of Leontios Machairas up to Rimes Agapis).
   C. 18th – 19th centuries (code nos. 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. Moisiodax, D. Katartzis, A. Koraes, and
the poetic production of I. Vilaras and A. Christopoulos. This unit also includes Folk Poetry, the School of the Ionian Islands (1800s-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, Vyzénos, Karkavítas).

**D. 20th century (code nos. 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.), Modern Greek modernism (C.P. Cavafy, Seferis, Elytis, Ritsos), Modern Greek surrealism (N. Kalas, A. Empeirikos, N. Engonopoulos), the ‘Novel of the 1930s’, and post-war poetry (T. Sinopoulos, M. Anagnostakis, M. Sachtouris, K. Montis).

**E. Methodology (code nos. 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.

2. Students may attend seminars in each period depending on the offered seminars; however no more than four seminars in a single unit may be selected.

3. In consultation with their supervisor students may attend seminars offered in other postgraduate programmes within the Department or within the School of Philosophy.

4. 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. M.A. students are required by the Programme to present part of their dissertation in the Colloquium.

5. The M.A. dissertation in Modern Greek Studies carries the course code number BMG 695.

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**Ph.D. in Modern Greek Studies**

**Admission of New Students**

Every September.

**Course 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**

1. Postgraduate Degree (M.A./D.E.A./etc.) in Modern Greek Studies.


3. Detailed C.V. including a report on academic and research interests.

4. Two reference letters.

5. Examination in one foreign language (where this is deemed necessary).

6. Interview by the academic staff of the Department.
Academic Requirements

1. A comprehensive examination by three members of the academic staff. The examiners are assigned by the chairperson of the department. The proposal is submitted by the candidate’s supervisor. This is an oral exam, which lasts two hours and takes place during the first semester. It tests the methodological and grammatological knowledge of the candidates. Specifically, the candidates are examined in one of the three grammatological areas listed below. This area is determined by their thesis proposal. The three grammatological areas are the following:
   (a) Poetry
   (b) Prose
   (c) Essay Criticism.

2. Approval of the detailed thesis proposal. During the first semester of the Ph.D. Programme students engage in preliminary research on their topic, which will lead to a detailed thesis proposal. The proposal is submitted to a three-member committee at the end of the semester, in agreement with the thesis supervisor. If the proposal is rejected, the student has the right to submit a new proposal on the same or a different topic (in the course of the following semester). After the approval of their proposal the students start working on their thesis.

3. Attendance at the Departmental Colloquia.

4. Submission and approval of the Ph.D. dissertation.

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 (SOCRATES) 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

- **Panagiotis Agapitos**
  Professor
  Byzantine erotic verse romances, rhetoric and poetry in Byzantium, imperial ideology, cultural history of the Middle Ages, Byzantine music, the history of manuscripts, textual criticism.

- **Yoryia Agouraki**
  Assistant Professor
  Syntactic Theory, Comparative Syntax as well as the interfaces between Syntax and the other branches of Theoretical Linguistics, namely Phonology, Morphology and Semantics.

- **Dimitris Angelatos**
  Professor
  Theory of Literature (Intertextuality, Parody, Literary genres, Polyphonic novel), Comparative Literature (Methodological questions of Comparative Poetics), Modern Greek Literature of the 19th and 20th centuries in the context of European Literature; in particular Romanticism, the work of D. Solomos, satirical poetry of the 19th century, poetry of the ‘20s (K.G. Kariotakis), modern prose.

- **Julia Chatzipanagioti-Sangmeister**
  Assistant 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**
  Lecturer
  Her research interests include 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**
  Lecturer
  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**
  Assistant 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.

- **Tassos A. Kaplanis**
  Lecturer
  Early modern Greek (vernacular) language and literature of the period 12th to early 19th centuries, theory of literature and comparative studies. More specifically, Cypriot and Cretan literary and historiographical production of the 16th and 17th centuries; periodization and origins of early modern Greek literature; editorial techniques applied to early modern Greek texts; poetics and, in particular, generic classifications from the Renaissance to the present; ‘pop’ and ‘pulp’ fiction in the same period; iconological studies; interrelation of history and literature.

- **Marilena Karyolemou**
  Assistant Professor
  Language policy and language planning, Language attitudes, Sociolinguistics, Dialectology.

- **Marianne Katsoyannou**
  Assistant 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
  Modern Greek Literature and, especially, Modern Greek Literary Criticism, Cypriot literature and Modern Greek Prose of 1880 and 1920.

- **Michalis Pieris**
  Professor
  Modern Greek Language and Literature, especially Medieval Cypriot Literature (Leontios Machaeras), contemporary poetry (in particular Cavafy, Seferis, Montis, Sinopoulus) and prose (especially the novel of adolescence of the so-called 30’s generation).

- **Alexandra Samuel**
  Assistant Professor
  European Modernism and Literary Avant-garde, Modern Greek Literature of the 19th and 20th cc in relation to the European Literature of the same period, History of Modern Greek Criticism.

- **Pantelis Voutouris**
  Associate Professor
  Modern Greek Literature of the 19th and 20th centuries, in particular Greek prose writing 1830-1930 and Greek Surrealism.

**Contact Persons**

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Website of the Programme in Byzantine Studies:
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POSTGRADUATE PROGRAMME IN CLASSICAL STUDIES

Introduction
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 3 years.

General Principles and Characteristics of the Programme

The Department offers postgraduate programmes at the M.A. and Ph.D. levels. The programmes are founded on the general principle of the unity of Classical Studies and have been designed to offer a well-grounded specialization in Ancient Greek Studies, Latin Studies, or the Comparative Study of Classical Literature. In the context of great and significant developments in Classical Studies in the international academic community, which makes the offer of high level specialization courses more than imperative, 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 organization 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

Basic Requirements
Applicants for entrance in the Postgraduate Programme must hold a First or Upper Second Class Honours Degree (or equivalent), from the University of Cyprus or any other accredited university, in Classical Studies or a related subject. They must also submit two letters of recommendation from professors of Classics or a related field. Additional qualifications such as other degrees may, upon assessment, be considered as an advantage.

Interview and Examinations
Admission is granted to a candidate who has conducted an interview before a three-member committee, and who has successfully taken a written examination as well as an examination in two of the following languages, English, French, German or Italian.

Level of Studies
The applicant who fulfills all entry requirements will be admitted as a postgraduate student and an Academic Advisor will be appointed for her/him by the Department. During the required four semesters and depending on their performance, students will be admitted to one of the two levels of the Postgraduate Programme, i.e., M.A. (Magister Artium) level or Ph.D. level and a Research Advisor will be appointed from among the Programme’s teaching staff.

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 credit units (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 presentation of achieved results in a scholarly fashion.

Programme of Studies
The graduate programme in Classical Philology of the Department has, from its inception, included eight courses with the following structure: Two courses in Ancient Greek (AGP 600-699 in accordance with the thematic units of the undergraduate programme), two courses in Latin (LAT 600-699 in accordance with the thematic units of the undergraduate programme), two courses in Historical Linguistics and/or Epigraphy (AGL 600-699 in accordance with the thematic units of the undergraduate programme), one course in Papyrology (AGP 601) and one course in Paleography (HIS 661).

Courses in Classical Philology are offered as an alternative to the courses in Ancient Greek and Latin.

Postgraduate Seminars
The Postgraduate Seminars of the Programme will be structured around the following areas of Classical Studies:

- Ancient Greek Literature
- Latin Literature
- Comparative Study of Classical Literature
- Ancient Text Criticism and Editorial Technique
- Auxiliary Disciplines of Classical Studies (Greek and Latin Palaeography, Papyrology, Epigraphy)
- Ancient Greek Language and Dialects
- History of the Latin Language
- Political Thought of the Ancient Greeks and the Romans
- Interpretative Approaches to Classical Texts
- Translation Issues in Classical Texts
- Classical Survivals in Modern Literatures
- History of Classical Scholarship

Three courses are offered in the first and second semester, and two courses in the third semester. The courses in Ancient Greek (code AGP) and Latin (code LAT) must cover different fields which can be defined either on the basis of the periods being studied, e.g. Poetry and Prose of the Classical Period, or, on the basis of genre, e.g. Poetry of the Archaic and Classical Period. This curriculum ensures that, during a two year programme all postgraduate students receive a comprehensive knowledge of ancient Greek literature.

It is recommended that one of the two courses in Historical Linguistics (AGL) covers the area of Greek or Latin Epigraphy.

Depending on the orientation of their research, postgraduate students will be able to select and attend those Postgraduate Seminars that are of interest to them and that will assist them in building a scholarly profile and writing the required essays.

Courses Offered

First Semester
(3 courses x 9 ECTS = 27 ECTS)
AGP I 600 - 699
LAT I 600 - 699
AGL I 600 – 699

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 601 Papyrology
AGP II 6...
LAT II 6...
AGP 690 M.A. Research I (6 ECTS)

Third Semester
(2 courses x 9 ECTS = 18 ECTS and continuation of the writing of the M.A. Thesis =12 ECTS, Total: 30 ECTS)
AGL II 645 - 670
HIS 661 Latin Paleography
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 according to University regulations.

The successful completion of the comprehensive exam by – at the latest – end of the fifth semester is a prerequisite for the defence 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 organized 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 defense of the thesis before a five-member board, consisting of internal and external examiners, according to the Postgraduate studies regulations of the University.

Research Interests of the Academic Staff

• Demokritos Kaltsas
  Lecturer
  Papyrology, ancient epistolography, lexicography, Atticism.

• Anna Panayotou - Triantaphyllopoulou
  Associate 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).

• Ioannis Taifacos
  Professor
  Textual criticism and editorial techniques in Greek and Roman classics, Roman historiography, Greco-Roman political thought, Latin grammarians and scholarship, Latin funeral orations, Roman poetry and influences on modern poetry.

• Antonios Tsakmakis
  Associate Professor
  Archaic Lyric Philosophy and Political Theory of the 5th and 4th centuries B.C., Aristophanes, Greek Historiography, the History of Classical Scholarship, computer applications in Classical Studies.

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Objectives

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.

Research Activity

The Department has inaugurated research programmes and projects in which postgraduate research assistants and postgraduate students participate. Their goal is original research, with special emphasis on Cyprus in relation to the rest of the Greek world and the Eastern Mediterranean.

Apart from the archaeological research programmes and projects that are being carried out through the Archaeological Research Unit (see below), the following programmes are in progress:

- Post-Byzantine Art in Cyprus: To be published in collaboration with the Foundation of Archbishop Makarios III, Cyprus (D. Triantaphyllopoulos).
- Documents of the Latin Church of Cyprus 1195-1378: With funding from the Cyprus Research Centre (C. Schabel).
- The Opera Theologica of Petrus Aureoli: In collaboration with the University of Copenhagen (C. Schabel).
- Bullarium Hellenicum (Papal Letters to Frankish Greece and Constantinople): Funded by the University of Cyprus (C. Schabel).
- Diplomacy and Cultural Connections between Byzantium and the Arab World (867-1200) (A. Beihammer).
- COOP 2002. Research focused on the collection of facts related to the History of Cooperation in Cyprus, found in the National Archives, the Archives of the Press, the Historical Archives of the Ministry of Foreign Affairs of Greece, the Public Record Office of the U.K. (P.R.O.), private archives and oral evidence.

The programme is sponsored by the Cyprus Cooperation Confederation. Eight postgraduate partners and fifty undergraduate students have participated in the programme since its inception. Research into the cooperation of the Cypriot Press has provided a wealth of historical, political, economic and other information for the period 1878-1959 (G. Georgis).

- Neocles Kyriazis. A bibliography programme to research and record the Greek publications from 1878-2000 which refer to the Cyprus issue and the contemporary history of Cyprus. This programme functions under the auspices of the Cyprus Foundation for the Promotion of Research (G. Georgis – A. Hamatsou).
- The Dormant Memory. This research programme functions with the voluntary participation of undergraduate and postgraduate students. The programme’s objectives are to locate, photograph and list statues and busts that are situated in
Nicosia and other Cypriot cities, as well as to record, list and describe old cemeteries. The programme’s aim is the preservation of memory through collection of information on the political, social and economic history of Cyprus and on related monuments and honorary sculptures. The research has thus far focused on the old cemetery of Saint Spyridon in Nicosia which houses the tombs of archbishops, national benefactors and important political and economic figures during the period of the English occupation of Cyprus. The programme is not funded (G. Georgis).

• Cyprus in 1821. The programme aims to collect information concerning the participation of Cypriots in the Greek War for Independence and the movement of Cypriots from and to Greece during the years 1828-1850. The information is found in memoranda, the Press, books and articles referring to that period and by researching the Archives in Cyprus and abroad. The project is carried out by the Department of History and Archaeology of the University of Cyprus and the Cyprus Research Centre (G. Georgis).

• Britain and Cyprus, 1964-1967 (G. Kazamias)

• The Turkish invasion of 1974 in the District of Kyrenia, through the oral testimonies located in the Oral History Archive of the Cyprus Research Centre (G. Kazamias).

• Creation of the Historical and Folk Culture Archive and Museum of the Municipality of Dhali. The programme aims to create a model for the study of local history, through the collection and analysis of local material (printed archival material, oral testimonies, archive films, etc.), the press and published sources. Part of the material collected is being digitised by the Library of the University of Cyprus. The programme, which began in January 2005, has a duration of 24 months and is part of the Republic of Cyprus Research Promotion Foundation (Idryma Proothisis Ereynas - I.P.E.) Framework for the support of New Researchers in Cyprus (Programma Enisxisis Neon Erevnitou Kyprou - PENEK). The main funding body is the Republic of Cyprus Research Promotion Foundation (IPE); additional funding is provided by the Municipality of Dhali (G. Kazamias – A. Hamatsou / Research associates: E. Rizopoulou-Egoumenidou [HIS], I. Theocharides [TUR]).

• External Research Programme “Lito Papachristoforou”. The programme is funded by the Lito Papachristoforou Foundation and its purpose is to create an information bank of the History of Pre-elementary Education in Cyprus. It functions as a joint research programme of the Department of History and Archaeology and the Department of Education. The Programme started in November 2004 and its duration is three years (G. Kazamias).

• “Theodoulos Constantinides”. The programme, financed by the University of Cyprus, is named after the founder and publisher of the first printing house and the first newspaper in Cyprus. The programme aims to create a data bank on the history of Cyprus, based on articles of the period 1878-1931 (P. Papapolyviou).

• “Detection, Record and Registration of the Cypriot Volunteers (1914-1945)”. This is a research programme funded by the Cyprus Research Promotion Foundation, in cooperation with the Department of History and Archaeology of the University of Cyprus. Its primary target is to find, record and register the Cypriot volunteers who participated in World War I (1914-1918), the Ukraine campaign (1919), the Asia Minor campaign (1919-1922) and the World War II (1939-1945). The final catalogues will be presented in a database on the Internet and they will be accessible to the public (P. Papapolyviou, K. Konstantinou, C. Kyriakides).

• Les victimes de la damnatio memoriae. Database of the persons who suffered from damnatio memoriae during the Roman period - UMF 8585: Centre G. Glotz and Paris I-Panthéon-Sorbonne (M. Kantirea).
Postgraduate Programmes

- Postgraduate programme in Mediterranean Archaeology: from Prehistory to Late Antiquity
- Postgraduate programme in Modern and Contemporary History (19th-20th centuries) (Ph.D. level)
- Interdepartmental postgraduate programme in Byzantine Studies in association with the Department of Byzantine and Modern Greek Studies.

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 Academic Staff members 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

Programme Structure

For the postgraduate programme leading to the acquisition of a Master of Arts Degree in Mediterranean Archaeology from Prehistory to Late Antiquity, 120 units of the European Credit Transfer and Accumulation System (ECTS) must be completed, as follows: Course work, equal to 80 ECTS, and a Master 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 thesis I" (10 ECTS). In the fourth semester postgraduate students continue and complete the Master thesis (ARC 811 "Preparation and writing of a Master 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 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 may be:
   (a) Graduates of the Department of History and Archaeology of the University of Cyprus or the
Departments of History and Archaeology of Greek universities.

(b) Graduates of the Department of Classical Studies and Philosophy of the University of Cyprus or equivalent departments of Greek universities.

(c) Graduates of Departments of Archaeology and/or Classical Studies of recognized universities.

(d) 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.

(e) 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 two 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 of the Master’s Thesis.

Submission of Application

Applications must be submitted to the Department’s postgraduate programme coordinator within the announced deadlines and must include the following:

(a) Photocopy of University undergraduate or first degree and transcript of grades, or confirmation of forthcoming graduation

(b) Short Curriculum Vitae

(c) Two undergraduate essays on archaeological themes or, in the case of applicants who belong to categories 1(a), 1(b), 1(c), two undergraduate essays on related themes

(d) Proof of good knowledge of two foreign languages

(e) Reference letters from two university professors

(f) Short statement of personal goals and research interests

Admission Date

September

Programme Leading to a 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, and must include the following:

(a) Analytical transcript of first degree
(b) Photocopy of Master of Arts degree or confirmation of imminent completion
(c) Short Curriculum Vitae
(d) Copy of Master of Arts thesis and copies of published articles, if any
(e) Proof of good knowledge of two foreign languages
(f) Reference letters from two university professors
(g) Statement regarding the research topic for the Doctoral Dissertation

Admission Date
September

Contact Persons
Programme Coordinator for GSP
Associate Professor Maria Iacovou
e-mail: mariai@ucy.ac.cy
Tel.: 22674658
Fax: 22674101

Secretary of the Department
Tel: 22892180, 22674658, 22674702
Fax: 22892181, 22674101

POSTGRADUATE PROGRAMME IN MODERN AND CONTEMPORARY HISTORY (19th-20th century)

Criteria for admission to the PhD Programme:

1. The candidates must hold an MA degree in History from a recognized University. Candidates whose MA degree is in other fields such as Political Science, European Studies or Turkish Studies, and who fulfill all the criteria of the programme, may also apply.

Candidates whose MA degree is in other fields can also apply for a PhD 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 relevant departments.

2. Good knowledge of the English language is required. The knowledge of a second European language will be considered an added desirable qualification.

3. Admission to the programme is decided by a special committee comprised of the permanent academic staff teaching in the programme who will be responsible for the evaluation of the candidates. This committee may require that the candidate come for an interview and/or take a written examination.

4. The number of places is determined each year.

Requirements and Organization of the Ph.D. Programme

Course attendance: Students with an MA degree or equivalent in Modern and/or Contemporary History or any other MA degree, and who satisfy all the requirements of the programme, are exempted from the obligation of attending courses. Candidates may be required to enroll in MA 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. MA 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.

Programme Coordinator for GSP
Assistant Professor George Kazamias
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Tel.: 22892184
Fax: 22892181
INTERDEPARTMENTAL POSTGRADUATE PROGRAMME IN BYZANTINE STUDIES
(see page 259)

Programme Coordinator for the Department of History and Archaeology
Alexander Beihammer
e-mail: abeihamm@ucy.ac.cy
Tel.: 22892177
Fax: 22892181

Research Interests of the Academic Staff

- **Alexander Beihammer**
  Assistant Professor
  Analysis and edition of documents of Byzantine diplomatics. Diplomacy in the Byzantine State, especially diplomatic and cultural relations with the Arab world. The institutions and society of the Middle Byzantine period.

- **Euphrosyne Rizopoulou-Egoumenidou**
  Associate Professor
  Folk art and architecture, pre-industrial technology, material life of the recent past and the folk culture of Cyprus and the wider Mediterranean area in general. Study of 18th/19th cent. ethnographic material through the written sources.

- **Giorgos Georgis**
  Associate Professor
  Diplomatic History, History of Greek-Turkish Relations in the 19th century, History of Cypriot and Greek political parties, Modern Cyprus History, especially the National Movement (1878-1959).

- **Maria Iacovou**
  Associate 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.

- **Maria Kantirea**
  Lecturer
  Greek and Latin Epigraphy. Ancient religion, cult of Hellenistic rulers and Roman emperors. Roman history: institutions of Greek cities and Roman colonies of the eastern provinces of the Roman Empire, prosopography of the Imperial period.

- **Vassiliki Kassianidou**
  Assistant Professor
  Extractive metallurgy, ancient technology, conservation of metals, production and trade of Cypriot copper in Antiquity.

- **George Kazamias**
  Assistant 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.

- **Ourania Kouka**
  Lecturer

- **Theodoros Mavrogiannis**
  Associate 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.

- **Demetrios Michaelides**
  Professor
  Hellenistic and Roman mosaics and frescoes; the ancient trade in marble, amphoras and worked seashells; the topography of Hellenistic and Roman Cyprus; the topography of Nicosia.
• Petros Papapolyviou
  Assistant Professor

• George Papasavvas
  Assistant 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
  Lecturer
  Formation processes of Byzantine art, representation of realia, 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.

• Chris Schabel
  Assistant Professor
  Medieval and Renaissance intellectual history (philosophy, theology, science and educational institutions), History of Cyprus 1191-1571, textual criticism, Medieval Latin Palaeography.

• Demetrios D. Triantaphyllopoulos
  Professor
  Historical geography/monumental topography as well as Byzantine and Post-Byzantine monuments and works of art in Cyprus and Greece; methodological problems in the field of Byzantine and Post-Byzantine Art; Iconography and Iconology; relation of Byzantine art to Western and Islamic art; reception of Byzantium by the West and modern Greece; history and development of studies on Byzantine Archaeology and Art.
THE ARCHAEOLOGICAL RESEARCH UNIT

The A.R.U. collaborates with scholarly organizations in Cyprus and abroad to realize its research objectives. In Cyprus this cooperation involves various governmental services (i.e., the Department of Antiquities and the Geological Survey Department) and other departments of our own University. Abroad, the A.R.U. works with scholars from various European and American universities and research centres.

The range of research foci is determined in accordance with the areas of specialization of the members of the A.R.U. and in view of the need to investigate sectors of Cypriot archaeology that have not yet been studied in depth.

The following are the primary research programmes and projects of the A.R.U:


- Various programmes that concern the artifacts (mainly pottery) from the Excavations of the House of Orpheus in Paphos, whose objective is the study and preparation of the material for publication (D. Michaelides, John W. Hayes).

- Study and publication of the ancient glass objects in the Pierides Collection, Larnaca (D. Michaelides).

- Common Educational and Research projects between Greece and Cyprus in the History and Archaeology of Medicine, Palaiopathology and Palaioradiology, EU Community Initiative Programme INTERREG III A GREECE - CYPRUS 2000-2006, University of Crete (C. Trompoukes) - University of Cyprus (D. Michailides).

- Excavation and study of the Early Christian remains at the locality “Ayioi Pente” of Yeroskipou, in collaboration with the Municipality of Yeroskipou (D. Michaelides).

- Study and publication of the Cypriot Ethnographic Collection in the Benaki Museum, Athens (E. Rizopoulou-Egoumenidou).

- “Recording, study, and publication of the corn-grinding watermills in Cyprus (18th - 20th c.)”. A three-year programme (2005-2007) funded by the University of Cyprus, in collaboration with six architects, one geologist, the Director of the Museum of the Holy Monastery of Kykkos, Theodoros Papadopoulos (Cultural Foundation of Archbishop Makarios III), the Department of Antiquities, Cyprus, and the Department of Information Technology, University of Cyprus (Coordinator: E. Rizopoulou – Egoumenidou).

- Study of a private collection of traditional Turkish Cypriot costumes and relevant old photographs for a monograph on “Turkish Cypriot Traditional Dress during the period of British Rule,” to be published by the Cultural Services of the Ministry of Education and Culture, Cyprus (E. Rizopoulou – Egoumenidou).

- Research for a monograph on “Tanning in Cyprus from the 16th to the 20th Century. From Traditional Tanneries to Modern Industries,” to be published by the Cyprus Research Centre (E. Rizopoulou – Egoumenidou).

- Digitized Archaeological Atlas of Palaipaphos: Advanced Technologies in Archaeological Research, Department of History and Archaeology / Archaeological Research Unit (M. Iacovou, V. Kassianidou, G. Papanassavas), Institute of Mediterranean Studies-Foundation of Research and Technology, Greece (Dr A. Sarris).


- Programme of excavation, “Phournia, an inland Chalcolithic site” (2006-2007). University of La
Trobe, Melbourne (D. Frankel and J. Webb) and University of Cyprus (M. Iacovou).

- Programme of excavation, “Palaipaphos: Exploration of the urban environment” (2006-2009). Archaeological Research Unit, University of Cyprus (Director: M. Iacovou).

- Excavation of the Late Bronze Age smelting workshop of Politico-Phorades, in collaboration with the University of Glasgow (Directors: A.B. Knapp, V. Kassianidou and M. Donelly).

- Troodos Archaeological and Environmental Survey Project: Multidisciplinary archaeological and environmental survey in the area between the villages of Xylliatos and Phlasou, in collaboration with the University of Glasgow and the University of Oregon (Directors: M. Given, V. Kassianidou, A.B. Knapp and S. Noller).

- Elaborating Early Neolithic Cyprus: The project aims to document the existence and define the nature of the occupation of Cyprus between c.10,000 and 8,000 BC; a joint project of the University of Toronto, the University of Cyprus and Cornell University (Project Directors: V. Kassianidou, C. McCartney, S. Manning and S. Stewart).

- Excavation and publication of the Sanctuary of Hermes and Aphrodite at Syme Viannou, Crete, in collaboration with the Archaeological Society of Athens (Director: A. Lebessi, excavators P. Muhly and G. Papasavvas).

- Izmir Region Excavations and Research Project (IRERP): Excavation and publication of the Chalcolithic and Early Bronze Age settlement at Liman Tepe/Klazomenae (Collaboration of O. Kouka with Prof. H. Erkanal, Ankara University).

- Heraion of Samos: Excavation and publication of the Bronze Age settlement in collaboration with the German Archaeological Institute (O. Kouka).

- Miletus – Early Bronze Age: Publication of the settlement (German Archaeological Institute, O. Kouka).

- “Kastri Group Pottery: The Transmission of Style and Technology in the Early Bronze Aegean II”: Coordination of the interdisciplinary project in collaboration with: Archaeological Society of Athens (Chr. G. Doumas), NRCNS ‘Demokritos’ – Laboratory for Archaeometry (V. Kilikoglou), Ankara University (H. Erkanal, V. Sahoglu), Sheffield University (P. Day) and University of Western Ontario (D.E. Wilson) (O. Kouka).

- “Byzantine Heritage Network: Rehabilitation, highlighting and management in the Eastern Mediterranean Basin”, an EU Community Initiative Programme, INTERREG III B ARCHIMED, in association with the Dipartimento Attività Produttive, Regione Basilicata (Italy), the Consiglio nazionale delle ricerche, Istituto per i beni archeologici e monumentali (Italy), the Provincia di Lecce (Italy), the Prefecture of Rethymnon and the Faculty of Geology and Geoenvironment of the University of Athens. (M. Parani)

In addition, members of the academic faculty and students of the Department participate in and conduct archaeological excavations in Cyprus.

**Director**

Professor Demetrios Michaelides

**Secretary of the Archaeological Research Unit**

Tel: 22674702, 22674658  
Fax: 22674101
Faculty of Letters

Interdepartmental Postgraduate Programme in Byzantine Studies
Preface

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.

Aim

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.

The programme is run by members of the two Departments in the following fields of specialisation: Byzantine Language and Literature, Byzantine History, Medieval History, Byzantine and Post-Byzantine Art and Archaeology. Moreover, seminars may be offered by members of the University’s academic staff in related fields (e.g. Ancient History, Classical Philology, Ottoman and Islamic Studies, Theory of Literature, Historical Linguistics) or by visiting professors.

In order to ensure that the students become acquainted with the full range of the three fields and the various methodological approaches involved, the seminars offered in the programme are organised in five thematic modules. These are not only related to different aspects of Byzantine culture, but they also allow for the combination of all the fields and methods mentioned above: (A) Editorial Techniques and Auxiliary Disciplines; (B) Theory and Aesthetics; (C) State and Society; (D) Culture and Ideology; (E) Byzantine and Medieval Cyprus.

A. MASTER OF ARTS (M.A.) IN BYZANTINE STUDIES

Admission Requirements

1. A completed application form, which can be obtained online.

2. Documentary evidence of academic performance, including official degree transcripts and a detailed list of the courses taken at the undergraduate level. B.A. in Byzantine Philology, History, Archaeology, History of Art, Classical Studies or another related field required (First or Upper second class).

3. Brief résumé and statement of academic and research interests.

4. Sample of written work, namely an essay on a topic of the candidate’s choice in Byzantine Literature, History, Archaeology, History of Art, Classical Studies or another related field.

5. Two letters of recommendation from specialists, preferably university faculty or other established scholars.

6. In addition to Greek, satisfactory knowledge of two other languages from the remaining five international languages of Byzantine Studies (English, French, German, Italian and Russian). The submission of the related certificates (e.g. GCE A level or TOEFL for English, Delf 2–4 for French, Mittelstufe for German, etc.) is required.

7. If deemed necessary by the faculty of the M.A. programme, the candidate may be invited to an interview.

Admission and Course Duration

The programme starts every September and lasts four semesters (full-time).
Academic Requirements

1. The programme comprises 120 ECTS (1 ECTS = 25 working hours).

2a. Of these, 90 ECTS are acquired via the successful completion of 9 postgraduate seminars (9x9 ECTS = 81) and participation in the “Workshop of Byzantine Studies” for the duration of three semesters (3x3 ECTS = 9). For the “Workshop” see below (§ A4c).

2b. The 225 hours corresponding to the 9 ECTS per seminar are allocated as follows:
- 39 hours: contact hours in the seminar
- 117 hours: research and preparation of the essay
- 69 hours: writing the essay

2c. The 75 hours corresponding to the 3 ECTS for participation in the “Workshop on Byzantine Studies” per semester include:
- 30 hours: contact hours in the “Workshop on Byzantine Studies”
- 45 hours: preparation of presentations in the “Workshop on Byzantine Studies”

3a. The remaining 30 ECTS are acquired via the successful completion of the M.A. thesis.

3b. The 30 ECTS corresponding to the M.A. thesis are allocated as follows:
- 20 ECTS: research and writing the M.A. thesis
- 6 ECTS: regular attendance at the “Workshop on Byzantine Studies” (3 hours per week)
- 4 ECTS: preparation for the defence of the M.A. thesis (see below, § A4d)

3c. The extent of the M.A. thesis should be around 12,000–15,000 words, not including bibliography. It should not exceed 50 pages in total.

4a. The students are required to attend 9 seminars in total, from at least four different thematic modules.

It is also obligatory to attend at least two seminars from each of the three fields of Byzantine Studies.

4b. At least four seminars from the listed thematic modules will be offered each semester.

4c. In addition to the seminars, there will be a “Workshop on Byzantine Studies” in which members of the faculty of the University, invited researchers and Ph.D. candidates will present their research. M.A. students are required to participate with their own contributions.

4d. During the fourth semester of their studies the students present their M.A. theses at the “Workshop.” This presentation is part of their final evaluation for the degree. Each academic year, the presentation of the theses by the M.A. candidates will take the form of a short conference open to the public. The “Workshop” as well as the conference may be organised by Ph.D. candidates in cooperation with a member of the faculty.

4e. An M.A. thesis in Byzantine Philology bears the standard code number BMG 590, in Byzantine and Medieval History HIS 590, and in Byzantine and Post–Byzantine Art and Archaeology ARC 590.

Programme of Studies

First Semester
Participation in three postgraduate seminars (3x9 ECTS) and in the “Workshop on Byzantine Studies” (3 ECTS).

Second Semester
Participation in three postgraduate seminars (3x9 ECTS) and in the “Workshop on Byzantine Studies” (3 ECTS).

Third Semester
Participation in three postgraduate seminars (3x9 ECTS) and in the “Workshop on Byzantine Studies” (3 ECTS).
Fourth Semester
Preparation and composition of the M.A. thesis under the academic supervisor (30 ECTS).
Oral presentation and submission of the M.A. thesis (see above, § A4d).

Programme Structure

1. Fields and Thematic Modules
The postgraduate programme combines two teaching systems: (a) a vertical system defined by the three main fields of humanist studies (Philology, History, Art and Archaeology), and (b) a horizontal system covering the five thematic modules mentioned above. The vertical system ensures the in-depth study of more specialised research problems, while the horizontal system supports the broader interdisciplinary approach.

The vertical system is revealed by the three letters of a seminar's code number (BMG: Byzantine Philology, HIS: Byzantine and Medieval History, ARC: Byzantine Art and Archaeology). The horizontal system is reflected in the relevant grouping of the three digits of the code number. More specifically, the postgraduate seminars are allotted to the five thematic modules as follows:

2. Thematic Modules and Postgraduate Seminars

2.1. Editorial Techniques and Auxiliary Disciplines (code nos. 500–514)

The seminars of this module focus on editorial theory and practice for medieval texts in the broadest sense of the term (Greek, Latin, French, Italian, Arabic, Ottoman), the study of palaeography, codicology and diplomatics, as well as other auxiliary disciplines, such as epigraphy, sigillography and numismatics. Through a theoretical approach various practical issues are examined, such as the following: the nature of medieval texts and their relation to their respective “carriers”; the nature of the “carriers” as archaeological objects; the editorial problems of texts preserved in only one or in multiple manuscripts; questions of medieval orthography, punctuation and metre; the place of manuscripts, coins and seals in Byzantine society; the specific interpretative problems of these textual and visual objects.

BMG 500 Editorial Theory and Practice
BMG 501 Greek Palaeography and Codicology
HIS 502 Latin Palaeography and Diplomatics
HIS 503 Byzantine Diplomatics
ARC 504 Epigraphy
ARC 505 Sigillography and Numismatics
BMG 509 Editorial Problems of Ecclesiastical Poetry
BMG 510 Michaelis Pselli Orationes Funebres
BMG 511 Patriarchal Documents of Constantinople

2.2. Theory and Aesthetics (code nos. 515–529)

Seminars belonging to this thematic unit deal with issues concerning theory and aesthetics in the Byzantine world. The term “theory” in this case has a twofold meaning: it refers both to the literary and artistic theories formed by the Byzantines themselves and to the application of modern critical theories to the interpretation of the artistic and literary products of Byzantine civilisation. Thus, in the framework of this unit seminars examine, for instance, ancient rhetorical theories and their use in literary criticism by Byzantine authors, and philosophical and theological theories about icons. The seminars also investigate other more general issues, such as taxonomical problems and narrative approaches, as well as more specific topics concerning the various literary genres or modes of artistic expression.
BMG 515 Theory and Criticism of Literature in Byzantium
ARC 516 Byzantine Icon Theory
BMG 517 Byzantine Literature: Problems of Categorisation
BMG 518 Genre Issues
BMG 519 Byzantine Narratives
BMG 520 Language and Literature
BMG 521 Performance and Literature
HIS 522 Historiography and Historical Thought in Byzantium
BMG 523 Hagiographical Genres
BMG 524 Religious Poetry and Hymnography
BMG 525 Byzantine Autobiographical Discourse
ARC 526 Facets of Reality in Byzantine Art
ARC 527 Byzantine Architecture: Principles for the Formation and Use of Space
BMG 528 Theory and Aesthetics of Byzantine Music
BMG 531 Byzantine Law
HIS 532 The Economy in the Medieval World
HIS 533 The Crusades
HIS 534 Latin Rule in Greek Lands
BMG 535 Byzantine Masculinities and Femininities
BMG 536 Private and Public Space in Daily Life
ARC 537 “The Social Life of Things” in Byzantium
BMG 539 Monastic Organisation
HIS 540 Latins and Greeks in the First Crusade (1073–1111)
HIS 541 The Latin Empire of Constantinople
BMG 542 The Image of the Other in Byzantine Literature
ARC 543 Dress: The Mirror of Byzantine Society
BMG 544 Byzantine Outsiders

2.3. State and Society (code nos. 530–549)
This unit focuses on issues of political, social, and economic history, such as continuity and change in the transition from Late Antiquity to Early Byzantium, the clash between Christianity and paganism, the relationship between Church and State, contacts with other cultural and political environments, and the passage from Byzantium to Modern Greece. The unit also includes the internal history of institutions (State bureaucracy, law courts, dependent peasantry, Church, monasticism), social history (gender roles, dress, patronage), economic history (agriculture and commerce), as well as topics concerning the influence of external factors on Byzantium (the rise of Islam, the Crusades, the Italian trading cities).

HIS 530 State and Society

2.4. Culture and Ideology (code nos. 550–569)
In the framework of the seminars of this unit some of the most important aspects of Byzantine culture and ideology are investigated. Through the examination of both culture and ideology the unit aims at a better understanding of cultural attitudes and mentalities, the Byzantines’ relation to both themselves and their world, and also the ideas that determined the intercultural relations between Byzantium and its geographical neighbours in both East and West.

HIS 550 Byzantium and Islam: Conflicts and Exchanges
HIS 551 Oriens et Occidens
HIS 552 Imperial Ideology
BMG 553 The Rhetor and His Audience
BMG 554 Emotions and Mentalities
ARC 555 Personal Piety
2.5. Byzantine and Frankish Cyprus
   (code nos. 570–585)

In this unit Cyprus is examined within the wider social, historical, and cultural context of the Mediterranean. Combining the hermeneutical approaches of the three scholarly fields of the postgraduate programme, special methodological emphasis is devoted to the investigation of the connection between the centre and the periphery as well as the understanding of the unique nature of a place at the crossroads whose history and culture were shaped by a variety of influences.

HIS 570 Byzantine Cyprus
HIS 571 Frankish Cyprus
HIS 572 The Ecclesiastical History of Cyprus
ARC 573 Relations between Centre and Periphery: Byzantine Art in Cyprus
BMG 575 Epiphanios of Salamis
HIS 576 Byzantine Cyprus in the Dark Ages (600–965)
BMG 577 Cypriot Hagiographical Texts
BMG 578 Neophytos the Recluse
HIS 579 Greeks and the Byzantine Tradition in Frankish Cyprus

HIS 580 The Ecclesiastical History of Cyprus 1191–1374
HIS 581 Historiography of Cyprus
BMG 582 Cypriot Scholars of the 13th and 14th Centuries

Seminar Descriptions

1. Editorial Techniques and Auxiliary Disciplines (code nos. 500–514)

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, students are asked to edit passages from prose and poetry in the learned and the vernacular idioms.

BMG 501 Greek Palaeography and Codicology
By focusing on specific areas of manuscript production, this seminar examines specialised issues in the history of scripts and books in the Byzantine world. For example, students have to study in detail such issues as the minuscule of the 9th century, the role of intellectuals in the production of books during the Palaeologan era, scribes and manuscripts in Cyprus (11th–15th centuries), and the manuscript as an archaeological object.

HIS 502 Latin Palaeography and Diplomatics
After an historical survey of the Latin scripts from Late Antiquity to the invention of movable print in the 15th 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 503 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.

**ARC 504 Epigraphy**

The Byzantines left us texts inscribed on stone, metal and ivory or painted on wood and mortar. The objective of this seminar is to familiarise students with Byzantine epigraphic material and to cultivate their skills in reading and dating Byzantine inscriptions based on their formal characteristics.

**ARC 505 Sigillography and Numismatics**

This seminar examines Byzantine seals (sigillography) and coins (numismatics). Through their inscriptions and iconography, the surviving gold and lead seals are witnesses to the bureaucratic structure and functions of the imperial and ecclesiastical establishments and provide invaluable information on the prosopography of the Byzantine Empire. The seminar also investigates the typology of Byzantine coins, the financial and other factors that governed their issue and circulation, and the role of coinage as a vehicle of the official imperial political and religious ideology.

**BMG 509 Editorial Problems of Ecclesiastical Poetry**

In comparison to other Byzantine literary genres, ecclesiastical (liturgical) poetry was used more extensively and hence it was copied more frequently. Therefore, the determination of the archetype of a liturgical hymn is a difficult and sometimes unreachable goal. This seminar familiarises students with the process of the textual criticism of ecclesiastical hymns and with the pertinent editorial techniques. Multiple problems are studied, such as the detection of the manuscript tradition of poetic texts, the determination of the stemmatic relation of their known manuscripts and, where possible, the establishment of the archetype. At the same time, the seminar examines the morphology of hymns, their metric structure and their relation to biblical and patristic texts in prose or in verse.

**BMG 510 Michaelis Pselli Orationes Funebres**

This seminar focuses on editorial issues relating to the nineteen preserved funeral orations of Michael Psellos (1018–1079). In the first stage, the palaeographical and codicological problems of the manuscripts preserving these works are examined, and the problems inherent in the available editions, but also the linguistic and literary characteristics of this highly artful funerary corpus, are discussed. In the second stage, students are asked to prepare a full critical edition of one of the lengthier orations.

**BMG 511 Patriarchal Documents of Constantinople**

This seminar comprises the perusal (from the original), edition and interpretation of the only preserved part of the hieron kodikion (covering the period 1315–1402) in which the decisions of the Synodos endemousa of Constantinople were written down. Special emphasis is placed on the social, historical and intellectual context of the documents.

2. **Theory and Aesthetics (code nos. 515–529)**

**BMG 515 Theory and Criticism of Literature in Byzantium**

This seminar examines Byzantine attitudes to literature through the study of theoretical works (e.g. rhetorical handbooks, commentaries on ancient and medieval texts) and of critical essays on specific texts or authors by Byzantine intellectuals (e.g. Photios, Michael Psellos, Theodore Metochites). At the same time, the seminar examines the Byzantines’ notions of poetics as these take shape in the texts themselves and through their authors’ own poetological statements.

**ARC 516 Byzantine Icon Theory**

The Byzantines' perception of the role of religious art dictated, to a large 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.
BMG 517 Byzantine Literature: Problems of Categorisation
This seminar investigates certain pairs of concepts (literature vs. non-literary texts, vernacular vs. learned language, secular vs. theological literature, prose vs. verse and historiography vs. chronography) and examines their multiple interrelations. The questions whether and how modern models of categorisation can be applied to Byzantine literature are given special emphasis.

BMG 518 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 519 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 such texts as historiographical works, lives of saints, romances and epic narratives. The seminar includes comparisons of Byzantine narratives with respective Western and Eastern medieval works (e.g. French vernacular historiography and hagiography, French and German romance, Arab prose epics and oral story-telling, Persian romances).

BMG 520 Language and Literature
This seminar examines the diachronic changes in medieval Greek 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 and the ambitions of conservative education and literature based on antique models. Special emphasis is placed on the analysis of a wide range of different linguistic and stylistic levels of the written language.

BMG 521 Performance and Literature
In contrast to other ancient literary genres, drama was not produced in Byzantium. Theatrical elements can be detected in many Byzantine genres, however, such as historiography, chronography, saints’ lives, miracle stories and hymnography. In this seminar, the theatrical and performative dimensions of Byzantine literature are examined.

HIS 522 Historiography and Historical Thought in Byzantium
In this seminar we investigate, on the one hand, the theories of the Byzantines about their past and the ideological principles that governed the composition of historiographical texts in Byzantine society. On the other hand, we examine how the Byzantines’ own conceptions of their past might have influenced even modern research with regard to the choice of research topics and hermeneutical models. More generally, we intend to question the limits of our knowledge on issues concerning the political, social, and economic history of Byzantium.

BMG 523 Hagiographical Genres
Hagiographical genres were very popular in Byzantium. The study of these genres not only provides us with valuable information concerning their production, their audiences and literary tastes in Byzantium, but also helps bring to the fore some very interesting texts of high literary value.

BMG 524 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 special forms, as well as the hymnographical production, innovative choices and particularities of well-known poets and melodists.

BMG 525 Byzantine Autobiographical Discourse
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. To understand Byzantine autobiographical writing, an investigation into contemporary conventions that define one’s self-image are indispensable.
ARC 526 Facets of Reality in Byzantine Art
The Divine Liturgy and public cult, historical events and social problems, daily life and material culture are all aspects of contemporary reality that are reflected in Byzantine art. Their exploration not only reveals the multi-layered symbolism of this art, but also enhances our understanding of its formation.

ARC 527 Byzantine Architecture: Principles for the Formation and Use of Space
Byzantine architecture shaped spaces, whether interior or exterior, public or private, secular or religious. This seminar examines their formal characteristics not only in relation to the practical needs they were meant to satisfy or the technical expertise available for their creation, but also in association with the world-view, the religious beliefs, the social structures and the political ideology of the Byzantine State and society.

BMG 528 Theory and Aesthetics of Byzantine Music
This seminar introduces students to one of the most inaccessible areas of Byzantine culture. Initially, the various ancient Greek mathematical and philosophical theories on music and harmony are presented as they were received and reformulated by the Byzantines. Next, the theoretical treatises on the art of ecclesiastical chant in Byzantium and the Byzantines' aesthetic notions about music are discussed. Finally, through the examination of Byzantine musical manuscripts, various testimonies in textual sources (e.g. information about instruments and musicians), as well as visual and ethnomusicological material, music in Byzantium inside and outside of liturgical practice are studied.

3. State and Society (code nos. 530-549)

HIS 530 State and Society
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.

BMG 531 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 highlight the stained relations between legal theory and social reality.

HIS 532 The Economy in the Medieval World
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 the question to what extent the economic history of a region can be written when statistical data are completely lacking.

HIS 533 The Crusades
This seminar focuses on various themes concerning the "Holy Wars" between Western Christendom and Islam in Sicily, Spain, and especially the Middle East, from the 11th to the 15th century. Emphasis is placed on the role of the Greeks and relations between Greeks and Latins during the preparation and conducting of the campaigns.

HIS 534 Latin Rule in Greek Lands
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.
**BMG 535 Byzantine Masculinities and Femininities**

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 536 Private and Public Space in Daily Life**

Through the examination of a broad spectrum of texts, this seminar approaches various problems in the study of everyday life and the investigation of Byzantine perceptions concerning the complementary but also contradictory meanings of “public” and “private” space. We discuss topics such as diet and culinary practice, oenology, objects of everyday use, the place of baths in society and in economy, sexual activities and practical medicine. Parallel to this, we look into a number of methodological issues, such as the depiction of daily life in literature and the problems that arise for a satisfactory historical and archaeological interpretation of public and private space.

**ARC 537 “The Social Life of Things” in Byzantium**

Artifacts played a significant role in various aspects of the public, religious and private life of the Byzantines, a role that was rarely exclusively utilitarian, since objects often functioned as symbols of social status and wealth, and as vehicles of cultural values. This complex role may be deciphered and become better understood through the combined examination of the available archaeological, artistic and written evidence.

**BMG 539 Monastic Organisation**

This seminar investigates the organisation of daily monastic life and its economic and intellectual foundations mainly as reflected in monastic foundation rules, but also in saints’ lives and other texts. We examine the rhythm of everyday life (canonical hours, sleep, work, the distribution of tasks) in addition to the management of the material supports of monastic life – mainly immovable property – and the tension between the ideal life devoted to God and the requirements of interaction with the outside world.

**HIS 540 Latins and Greeks in the First Crusade (1073–1111)**

This seminar focuses on the controversial issue of the participation of Greeks and Latins in the planning of and preparation for the First Crusade, as well as the relations between Greeks and Latins (or the emperor and the crusaders) during the campaign and afterwards, with the foundation of the Crusader States in the East.

**HIS 541 The Latin Empire of Constantinople**

This seminar examines the history of Constantinople and Frankish Greece from the conquest of the city by the Latins during the Fourth Crusade in 1204 until its reconquest by Michael VIII Palaiologos in 1261. This is an era of great interest but unfortunately there are very few sources and, therefore, many interpretive problems.

**BMG 542 The Image of the Other in Byzantine Literature**

The image of the Other, who comes into conflict with the Self, is one of the motifs that appears in almost every Byzantine literary genre. The literary construction of the Other constitutes an especially significant characteristic of Byzantine texts and assumes many shapes. The subject of this seminar is the examination of the various appearances of the Other and their importance in the construction of Byzantine mentalities and ideologies.

**ARC 543 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.

**BMG 544 Byzantine Outsiders**

Pagans, magicians, gays, whores, and invalids were some of the fringe groups of Byzantine society. In the context of this seminar we examine the portrayal of the world on the edges in Byzantine literature.
4. Culture and Ideology (code nos. 550–569)

**HIS 550 Byzantium and Islam: Conflicts and Exchanges**
This seminar examines certain aspects of 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 551 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. The seminar focuses on the question 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 552 Imperial Ideology**
After the Christianization 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.

**BMG 553 The Rhetor and His Audience**
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 style employed in connection with his education, his aims, and the public that he was addressing.

**BMG 554 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 both these emotions and themselves. The variability of apparent constants of human life and problems of interpretation connected to this variability are emphasised.

**ARC 555 Personal Piety**
The need for the expression of personal piety constituted one of the most vital motivating forces behind the creation of Byzantine art. The objective of this seminar is the investigation of the ways in which the Byzantines expressed their religiosity and faith through the adoption of certain, socially acceptable, modes of behaviour and the commission and usage of works of art.

**BMG 556 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 Byzantines had with their bodies and the meanings they attributed to them are subjects that have not been studied at all. In the framework of this seminar, the meanings that the body had in Byzantium and its representations in art and literature are examined.

**BMG 557 Representations of Death**
This seminar looks at the ways of representing death in Byzantine literature and at the various ideological parameters of such representation in different periods of Byzantine history. In connection with the religious beliefs of the Byzantines, theology, liturgical practice, but also the depiction of death in Byzantine art, a series of texts from a broad spectrum of genres are read, for example, works of funerary literature (funeral orations, tombstone epigrams, laments), hymnographic works, historiographical and hagiographical texts, testaments, novelistic and epic-like narratives.

**BMG 561 The Image of Women in Byzantine Literature**
Byzantine literature could be described as androcentric, since it was written by men and is mainly about men. As a result, the women depicted in Byzantine literature constitute literary constructions of male fantasy, which is often misogynistic. In this seminar, the literary
constructions of various women in texts belonging to many genres and different centuries are approached.

**ARC 562 Portraits of Women in Byzantine Art**
From the Virgin Mary to Eve, from holy women to female sinners in the composition of the Last Judgment, from empresses to simple women working in the fields, Byzantine art offers a wide spectrum of female portrayals. Their examination reveals Byzantine attitudes and views concerning the position and the role of women in Byzantine society.

**BMG 563 The Ruler in Byzantine Literature**
The figure of the emperor plays a rather important role in Byzantium’s political ideology. Yet, in most cases, this figure is presented through literary representations that idealise or denigrate the ruler. This seminar examines the literary mechanisms and the ideological framework of this construction of the ideal ruler through rhetorical, historiographical, and legal texts, but also through works of “political theory” (e.g. the Imperial Statue of Nikephoros Blemmydes or the De administrando Imperio of Constantine Porphyrogennetos).

**ARC 564 The Art of Propaganda and Diplomacy**
It is often claimed that the survival of the Byzantine Empire for over a millennium is due, to a large extent, to the efficiency of Byzantine diplomacy. This seminar explores the use of art by the State and the Church as a powerful means of self-promotion and as an effective vehicle for the dissemination of political and religious messages both within the borders of the Empire and abroad.

**BMG 565 Education in Byzantium**
Intellectual flourishing in Byzantium depended on the learning of certain scholars and on the organisation of education. In order to evaluate Byzantine culture, it is necessary to understand its literary tradition and therefore to study the role of education. This seminar focuses on the coexistence of the Ancient Greek tradition and Christian doctrine in education as well as on the institutions of education in various periods of Byzantine history.

**HIS 566 Contra errores Graecorum**
The Latin image of the theological “errors” of the Greeks from Charlemagne to the Fall of Constantinople has not been fully investigated. This seminar examines various texts that were written Contra errores Graecorum, for example, in the context of the coronation of Charlemagne (800), the Photian Schism (860), the mutual excommunications of 1054, the Crusades, and the Councils of Lyons II (1274) and Florence (1438–39).

**BMG 567 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 Thessaloniki and Constantinople.

5. **Byzantine and Frankish Cyprus** (code nos. 570–585)

**HIS 570 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 571 Frankish Cyprus**
This seminar studies topics in Cypriot history during Frankish and Venetian rule, 1191–1571, such as the conquest, feudalism, the civil wars of 1228–1233 and 1456–1460, the coup d'états of 1306–1310 and 1369, the Genoese invasion, the war with the Mamlukes, the transfer of authority to the Venetians, language and nationality, law, administration, foreign relations, education, agriculture, slavery, and trade.

**HIS 572 The Ecclesiastical History of Cyprus**
This seminar examines various topics of the Church history of Cyprus from the First Ecumenical Synod of
Nicaea in 325 until the Turkish Conquest of 1571. These include the period of Epiphanios, the Autocephaly, Iconoclasm, and the subjugation of the Greek clergy to the Roman pope in the Frankish period.

ARC 573 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.

BMG 575 Epiphanios of Salamis

This seminar focuses on Epiphanios of Judaea, founder and abbot of a monastery for thirty years and bishop of Salamis (Constantia) from 367. On the basis of his writings, we examine his theological opinions and his activities as bishop, as well as the ecclesiastical history of his period. He represents a combination of an uncompromising zealot, a devoted defender of Christian doctrine, an intolerant opponent of paganism and the veneration of idols, and a rigid adversary of the teachings of Origen.

HIS 576 Byzantine Cyprus in the Dark Ages (600–965)

The first Arab raids in Cyprus (649, 653), together with the ensuing developments, created a particular regime on the island that is usually characterised as the “Byzantine-Arab Condominium”. This period, which lasted approximately 300 years until the reconquest of Cyprus by Nicephoros II Phocas (965), gives us the opportunity to examine a section of the Byzantine-Arabic border region from two different vantage points, the Byzantine and the Arabic, in the light of wider political and social developments in the Eastern Mediterranean basin.

BMG 577 Cypriot Hagiographical Texts

We possess a relatively large number of hagiographical texts composed in Cyprus, many of which are devoted to Cypriot saints. In the context of this seminar, we discuss Cypriot hagiographical texts from a literary perspective, as well as the social conditions of their production.

BMG 578 Neophytos the Recluse

The goal of this seminar is a comprehensive examination of the personality and the œuvre of Neophytos the Recluse in the historical, political, and social environment of Byzantine Cyprus from the mid-12th century until the beginning of the 13th. Special emphasis is placed on education in the periphery, manuscripts, libraries, monastic life and art, and the spiritual and literary contribution of Neophytos.

HIS 579 Greeks and the Byzantine Tradition in Frankish Cyprus

While the establishment of the Frankish Kingdom of Cyprus certainly put an end to the political sovereignty of Byzantium, it did not sever the spiritual and cultural bonds of the Greek-speaking population with the Byzantine world. This seminar investigates the institutions, mentalities, and traditions of the Byzantine past that, beneath the surface of the feudal system, continued to exist and to influence the historical development of the island.

HIS 580 The Ecclesiastical History of Cyprus 1191–1374

This seminar concentrates on the analysis of the Church history of the island from the Frankish conquest until the Genoese invasion, the consequences of the conquest for the Greek clergy, the establishment and the internal history of the Latin ecclesiastical hierarchy, monasticism, the relations between the Latin and Greek clergies, and noteworthy events, such as the martyrdom of the thirteen monks of Kantara.

HIS 581 Historiography of Cyprus

This seminar examines the most significant chronicles relating to the Frankish period in Cyprus and focuses on the first two phases of Cypriot historiography: from 1425 to 1571 (Makhairas, Amadi, Florio Boustron, George Boustronios) and from 1571 to 1788 (Etienne Lusignan, Loredano, Archimandrite Kyprianos). The aim of the seminar is to establish the genealogical “stemma” of the chronicles as well as the methodology and originality of each chronicler.

BMG 582 Cypriot Scholars of the 13th and 14th Centuries

This seminar investigates the œuvre of Cypriot men of letters, such as George of Cyprus and George Lapithes in the broader literary and cultural context of their times. Importance is placed on the question if and how the
relationship between the cultural centre and the periphery is reflected in the works of specific authors.

B. DOCTOR OF PHILOSOPHY (Ph.D.) IN BYZANTINE STUDIES

Admission Requirements
1. A completed application form which can be obtained online.

2. Postgraduate degree (M.A., Mastère, etc.) in Byzantine Studies or other related fields. Submission of official degree transcripts required.

3. Detailed résumé and research proposal.

4. Sample of written work, namely the candidate’s M.A. thesis on a topic in Byzantine Studies or a related field.

5. Two letters of recommendation by specialists, preferably university faculty or other established scholars.

6. In addition to Greek, satisfactory knowledge of two other languages from the remaining five international languages of Byzantine Studies (English, French, German, Italian and Russian). The submission of the related certificates (e.g. GCE A level or TOEFL for English, Delf 2–4 for French, Mittelstufe for German, etc.) is required.

7. If deemed necessary by the faculty of the Ph.D. programme, the candidate may be invited to an interview.

Academic Requirements
1. Comprehensive examination. By the fifth 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 two Departments involved (BMG and HIS), following the recommendation of the academic supervisor. The examination is oral and its duration lasts three hours. It comprises three subjects selected by the candidate from a list of topics representative of all the academic fields of the postgraduate programme. The list of topics is announced at the beginning of each academic year.

2. Approval of detailed thesis proposal. Following the comprehensive examination, within a period of four 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 two Departments involved (BMG and HIS), following the recommendation of the academic supervisor. Only after the proposal’s approval is the candidate eligible to begin thesis work.

3. Attendance of and active participation in the “Workshop of the Byzantine Studies” (see above, § A4c-4d).

4. Submission and defence of the Ph.D. dissertation according to the Postgraduate Studies Regulations of the University of Cyprus.

Admission and Course Duration
The programme starts every September. The time frame for the successful completion of the Ph.D. Programme cannot exceed eight (8) academic years after admission.
Appendices

- Academic Calendar
- Regulations
- Organogrammes and Maps
- Telephone/Fax Directory
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A. Programme Categories
1. The University of Cyprus offers postgraduate programmes at the Master (M.A., M.Sc.) and Doctorate (Ph.D.) level. These programmes can be offered:
   1.1 By each University Department individually.
   1.2 By two or more University Departments with the consent of the Departments involved and the related Faculties.
   1.3 In cooperation with other Universities. The special provisions for Inter-University Programmes are stated in separate regulations.
2. A Master degree programme can be completed:
   2.1 With coursework alone
   2.2 With a combination of coursework and a dissertation.

B. Student Categories
3. Full-time status requires a course load of 27 ECTS per semester. Students carrying fewer credits are considered part-time.

C. Postgraduate Programmes Committee
4. The Postgraduate Programmes of each Department are supervised by a three-member Postgraduate Programmes Committee, which is appointed for a two-year period.
5. The Committee is chaired by a Postgraduate Programmes Coordinator. The Coordinator and the other members of the Committee are appointed by the Departmental Board.
6. Interdepartmental Postgraduate Programmes are supervised by all the members of the Committees of the relevant Departments. Students admitted in Interdepartmental Programmes are assigned to one department.

D. Admission to Postgraduate Programmes
7. Postgraduate vacancies for specific Master or Doctoral programmes are announced, separately.
8. Students will not be formally accepted to a Postgraduate Programme (Master or Doctorate level) until the approved number of places has been announced.
9. 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 or Higher Education Qualifications (KY.S.A.T.S). Individuals who will be awarded a University degree or Graduation certificate fulfilling the criteria of this present article by the end of the week that precedes the registration week, will also be eligible to submit an application form.
10. The procedure for admission to the postgraduate programmes is as follows.
   10.1 The application form is submitted to the relevant Department and examined by the Postgraduate Programmes Committee. The Departmental Board must then approve the Committee’s recommendations.
   10.2 The criterial for assessment and assignment are the following:
      i. Academic background in the appropriate discipline and grade in related Bachelor degrees.
      ii. A minimum of two or more letters of recommendation, depending on departmental regulations.
      iii. Interview (if stipulated in the Department’s internal regulations).
10.3 All Departments have the right to adopt additional criteria.

E. Academic and Research Advisor
11. For every newly admitted postgraduate student the Department appoints an Academic Advisor. For the Ph.D. a Research Advisor is appointed. The Departmental Board appoints the Research Advisor following the Postgraduate Programmes Committee’s proposal and in agreement with the student and the proposed Advisors. The Research Advisor monitors the student’s research or other work and provides necessary guidance.

F. Postgraduate Degrees
12. The postgraduate programmes of study at the Master level lead to a Master Degree award (M.A., M.Sc.).
13. The postgraduate programmes at Doctoral level lead to a Doctoral Degree (Ph.D.).
14. The final grade of the postgraduate degree is not written on the postgraduate diploma.
15. The award of a Master degree is subject to approval by the Departmental Board.
16. The award of a Doctoral degree is subject to approval by the Senate.

G. Requirements for a Master Degree Programme
17. To obtain a Master Degree a student must fulfill the following requirements:
   17.1 Full-time attendance for a minimum of three semesters. Completion of the programme within maximum eight semesters.
   17.2 The successful completion of minimum 90-120 ECTS. If the Programme includes completion of a dissertation then the dissertation’s workload must not be
more than half the total workload. A minimum of one course may be at the undergraduate level in another department. The course must be at an advanced level and will count towards completion of the postgraduate programme’s credits.

17.3 A maximum 20 ECTS (2 courses) in another Postgraduate Programme are allowed. Please note that postgraduate courses taken for the undergraduate degree and counted towards this degree are not recognized.

17.4 Students with a Master dissertation from another Postgraduate Programme are not exempted from the requirement to submit a Master dissertation for the current Programme.

17.5 Fulfillment of any additional criteria required by the Department.

18. Each Department sets special internal regulations for the completion and assessment of Master degree dissertations. Master dissertations must be independently assessed by a minimum of two evaluators. Master dissertations are evaluated qualitatively as: Excellent, Very Good, Good and Failure.

19. If a dissertation is rejected the student is allowed to resubmit the dissertation once more. Each Department is responsible for defining resubmission procedures.

20. In the context of the exchange student programme, postgraduate students at the Master level may fulfill a maximum one-third of their programme of studies at a foreign university.

H. Doctoral Programme Requirements

21. To obtain a Doctorate of Philosophy (Ph.D.) a student must fulfill the following requirements:

21.1 Successful completion of minimum 60 ECTS in postgraduate level courses. Students with a Master of equivalent degree are partially or fully exempted from this requirement.

21.2 Maximum two undergraduate courses from other Departments may be included in the required courses of the Doctoral Programme.

21.3 Postgraduate students are allowed to repeat a failed course once.

21.4 Satisfactory result on a comprehensive examination by the fifth semester of studies at the latest. The nature and assessment of the comprehensive examination are regulated by the relevant Department.

21.4.1 The Department is responsible for setting its comprehensive examinations.

21.4.2 The relevant Postgraduate Programmes Committee is responsible for coordination of the comprehensive examination.

21.4.3 The general content of the comprehensive examination and the material required for the comprehensive examination are defined by the Postgraduate Programmes Committee.

21.4.4 For oral examinations the Examining Committee must be composed of more than one examiner.

21.4.5 For oral examinations full notes must be taken.

21.4.6 The Academic departments must offer comprehensive exams at least once a year so students can take the exams at least twice before their fifth semester.

21.5 Defense of a dissertation proposal before a three-member committee. This committee, which is proposed and chaired by the Research Advisor, is appointed by the Postgraduate Programmes Committee. One of the members of the three-member committee can be from another department of the University in a related discipline or from another University or Research Center/Institution.

21.6 Completion of an original dissertation constituting an important contribution to the relevant discipline of specialization.

21.7 A dissertation can only be submitted after the completion of six semesters from the day of admission to the Doctoral programme and after the successful completion of the comprehensive examination and the required credit units.

21.8 Defense of the dissertation before a five-member Examining Committee. The Committee is proposed by the Postgraduate Programmes Committee and is composed of:

21.8.1 Three members of the Department’s academic staff, one of whom is, in all cases, the student’s Research Advisor.

21.8.2 A member from another University or Research Centre/Institution.

21.8.3 A member from another department of the University in a related discipline or from another University or Research Centre/Institution.

21.9 The Head of the Examining Committee is a member of the academic staff of the Department, but not the Research Advisor.

21.10 The procedure for defense of the Dissertation consists of three stages:

21.10.1 A presentation of the Dissertation in an open lecture, lasting 30 to 45 minutes.

21.10.2 Discussion of the Dissertation with the members of the Committee.

21.10.3 Meeting of the Committee and formation of the Committee’s final proposal.

21.11 After completion of the Dissertation defense, the Committee submits a detailed proposal to the Head of the Department in writing with any recommendations to the candidate. The Head sends the Committee’s proposal to the Senate for approval.

21.12 If the Committee suggests any changes or improvements, the Senate’s final approval for the award of the degree is provided after the Research Advisor
confirms in writing that the suggestions have been implemented.

21.13 If a Dissertation is rejected the candidate is allowed to repeat the procedure once. The conditions of resubmission are determined in writing by the Examining Committee.

22. A Doctoral degree must be completed within eight (8) academic years.

23. Students at the doctoral level may be awarded a Master degree if for special reasons they need to interrupt their studies, provided that they fulfill the Department’s requirements.

I. Automatic Termination of Studies

24.1 Master level studies are automatically terminated without the award of a Master Degree if students do not fulfill their programme requirements within eight semesters.

24.2 Notwithstanding the above paragraph 24.1, the studies at the Master level are automatically terminated, without the award of a Master Degree if students fail twice to defend a required thesis.

24.3 Ph.D. studies not fulfilled within the semesters are automatically terminated, without the award of a Ph.D. Degree. The time during which students have interrupted or suspended their studies is excluded from the maximum duration of sixteen semesters.

24.4 Notwithstanding the above paragraph 24.3, Ph.D. studies are automatically terminated, without the award of a Ph.D. Degree if students do not successfully complete a required comprehensive examination within five semesters.

J. Supervision of the Dissertation by Advisors who have resigned from the University of Cyprus

25. Should the postgraduate student’s Research Advisor resign from the University of Cyprus, he/she can (if he/she wished to) continue supervision with the Department’s approval. In this case a Committee member who is a professor at the University of Cyprus, is appointed as a co-Advisor.

K. Postgraduate Course Attendance by Undergraduate Students

26. Postgraduate courses are distinguished from undergraduate ones in terms of level and code. In exceptional cases, and after the Departmental Board’s approval, an undergraduate student can attend a maximum of two postgraduate courses.

L. Evaluation of Courses: Pass/Fail

27. Postgraduate courses may be evaluated with a Pass/Fail grade. These courses will not count in the student’s grade point average and must not exceed 25% of the Programme’s credit units excluding the dissertation. All eligible courses are stated in the Prospectus of Postgraduate Studies.

M. Language of Teaching

28. Postgraduate Programmes may be offered in an international language if it is one of the official teaching languages of the University. Exceptions are the Inter-university Programmes which run under a European Union Programme. These Programmes may be offered exclusively in an international language.

29. The text of a Dissertation (at the Master or Doctoral level) may be written in an international language.

N. Discipline Measures

30. Discipline Regulations for undergraduate students also apply to postgraduate students.

O. Postgraduate Students Working at the University of Cyprus

31. Postgraduate assistants or other employees of the University of Cyprus who enroll in a postgraduate programme are subject to the same regulations as those for postgraduate students.

32. Students employed on a permanent basis at the University of Cyprus, as well as postgraduate assistants, are fully exempted from tuition fees.

P. Interim Regulations

33. Postgraduate students admitted before approval of the present Regulations complete their Curriculum according to the previous Curriculum Regulations.

(The regulations were approved during the 84th Council Meeting 21/11/2001)
**GOVERNING BODIES**

**APPPOINTMENT / ELECTION OF THE MEMBERS OF THE GOVERNING BODIES**

**Chairperson / Vice Chairperson of the University Council**

Appointed by the President of the Republic from the external members. In case where the Chairperson comes from the members appointed by the Council of Ministers, the Vice Chairperson comes from the members appointed by the Senate and vice-versa.

**Rector / Vice Rectors**

Elected by the total of the academic staff and from student and administrative staff representatives.

**Deans / Deputy Deans**

Elected by the members of the Faculty’s Departmental Boards.

**Chairperson / Vice Chairperson of Departments**

Elected by the Departmental Board.

**Representatives of academic staff on the Council**

Elected by the Academic Staff.

**Representatives of academic staff of each Faculty on the Senate**

Elected by the Faculty Board.

**Representatives of academic staff of each department on the Faculty Board**

Elected by the Departmental Board.
# Members of the Governing Bodies

## Council
- **Chairperson**: KIKIS LAZARIDES
- **Vice-Chairperson**: ANASTASIOS LEVENTIS
- **Rector**: STAVROS ZENIOS
- **Vice-Rector of Academic Affairs**: CONSTANTINOS CHRISTOFIDES
- **Vice-Rector of International Affairs, Finance and Administration**: ANTONIS KAKAS
- **Member**: ANDREAS DEMETRIADES
- **Member**: ARIS GEORGIOU
- **Member**: FEDIAS PELIDES
- **Member**: SYMEON KASSIANIDES
- **President of Student Union**: PATRIKIOS KONSTANTINOU
- **Representative of Academic Staff**: CHRISTIS HASAPIS
- **Representative of Academic Staff**: SAVVAS KATSIKIDES
- **Representative**: PHILIPPOS PATTOURAS
- **Member**: ANDREAS CHRISTOFIDES, Director of Administration and Finance, Secretary, non-voting member

## Senate
- **Rector**: STAVROS ZENIOS
- **Vice-Rector of Academic Affairs**: CONSTANTINOS CHRISTOFIDES
- **Vice-Rector of International Affairs, Finance and Administration**: ANTONIS KAKAS
- **Dean of the Faculty of Social Sciences and Education**: ATHANASIOS GAGATIS
- **Dean of the Faculty of Economics and Management**: LOUIS CHRISTOFIDES
- **Dean of the Faculty of Humanities**: STEPHANOS STEPHANIDES
- **Dean of the Faculty of Letters**: IOANIS TAFAKOS
- **Dean of the Faculty of Pure and Applied Sciences**: ANDREAS CONSTANTINOU
- **Dean of the Faculty of Engineering**: ANDREAS ALEXANDROU
- **Faculty of Social Sciences and Education**: ANDREAS CHRISTOFIDES
- **Faculty of Economics and Management**: THEOFANIS MAMUNEAS
- **Faculty of Humanities**: GIORGOS GAJINIKAS
- **Faculty of Letters**: IOANNIS IOANNOU
- **Faculty of Pure and Applied Sciences**: DEMETRIOS AGGELATOS
- **Faculty of Engineering**: GEORGE KAZAMIAS
- **Faculty of Social Sciences and Education**: IOANNIS IOANNOU
- **Faculty of Letters**: GEORGE XENIS
- **Faculty of Pure and Applied Sciences**: DEMETRIOS AGGELATOS
- **Faculty of Economics and Management**: EFSTATHIOS PAPARODITIS
- **Faculty of Humanities**: PRODROMOS ALAMBRITIS
- **Faculty of Letters**: IOANNIS IBIANOS
- **Faculty of Pure and Applied Sciences**: FLAVIA CHRISTOFIDES
- **Faculty of Engineering**: ioannis giapintzakis
- **Faculty of Social Sciences and Education**: MICHAEL PETROU
- **Faculty of Letters**: PATRIKIOS KONSTANTINOU
- **Faculty of Pure and Applied Sciences**: PRODROMOS ALAMBRITIS
- **Faculty of Economics and Management**: PANAYIOTIS SENTONAS
- **Faculty of Humanities**: SYLVIA MICHAEL
- **Faculty of Social Sciences and Education**: ANDREAS GREGORIOU
- **Faculty of Letters**: GEORGE TSIRAKIS
- **Faculty of Pure and Applied Sciences**: ANDREAS CHRISTOFIDES
- **Faculty of Engineering**: PHILIPPOS TSIMPOGLOU
- **Faculty of Social Sciences and Education**: PHILIPPOS TSIMPOGLOU

## Administrative and Academic Services
- **Director of Administration and Finance**: ANDREAS CHRISTOFIDES
- **Academic Affairs and Student Welfare Services**: PHILIPPOS PATTOURAS
- **Finance**: ANDROUILLA THEOPHANOUS
- **Human Resources**: GLAFKOS CHRISTOU
- **Information Systems Services**: AGATHOCLIS STYLIANOU
- **Library**: PHILIPPOS TSIMPOGLOU
- **Research, International and Public Relations Services**: GREGORY MAKRIDES
- **Technical Services**: AGIS ELISSEOS
ORGANISATION CHART

COUNCIL

SENATE

VICE RECTORS

RECTOR

DIRECTOR OF ADMINISTRATION AND FINANCE

INTERNAL AUDITOR

FACULTIES

DEPARTMENTS

ACADEMIC AFFAIRS AND STUDENT WELFARE SERVICES

FINANCE SERVICES

HUMAN RESOURCES SERVICES

INFORMATION SYSTEMS SERVICES

LIBRARY

RESEARCH, INTERNATIONAL AND PUBLIC RELATIONS SERVICES

TECHNICAL SERVICES
1. TOUFEXIS MANSION – AXIOTHEAS STREET
   • Cultural Centre

2. 12 GLADSTONOS STREET
   • Archaeological Research Unit

3. 10 KALLIPOLEOS AVENUE (Apostolides)
   • Department of Byzantine and Modern Greek Studies
   • Department of Classics and Philosophy

4. 48 KALLIPOLEOS AVENUE (Loucas Court)
   • Department of Electrical and Computer Engineering

5. 59 KALLIPOLEOS AVENUE (Fragkopoulo)
   • Department of Education
   • Department of Turkish and Middle Eastern Studies

6. 65 KALLIPOLEOS AVENUE (Antoniou)
   • Office of the Dean of the Faculty of Social Sciences and Education
   • Department of Education
   • Department of Psychology

7. 75 KALLIPOLEOS AVENUE (Central Building)
   • Department of History and Archaeology

8. 75 KALLIPOLEOS AVENUE (Central Teaching Facilities)
   • Office of the Dean of the Faculty of Letters
   • Office of the Dean of the Faculty of Humanities
   • Department of English Studies
   • Department of History and Archaeology
   • Library
   • Information Systems Services
   • Lecture Rooms
   • FEPA (Student Union)
   • School of Modern Greek

9. 11-13 DRAMAS STREET (Theophanides)
   • Department of Education

10. 91 AGLANDJIAS AVENUE (Central Building)
    • Office of the Dean of the Faculty of the Engineering
    • Department of Civil and Environmental Engineering
    • Department of Electrical and Computer Engineering
    • Department of Mechanical and Manufacturing Engineering

11. 9-11 LARNAKAS AVENUE (Doriforos)
    • Office of the Dean of the Faculty of Economics and Management
    • Department of Economics
    • Department of Public and Business Administration
    • Economic Research Unit
    • Centre for Banking and Financial Research
    • Hermes Centre of Excellence

12. 12 AGLANDJIAS AVENUE (Athena)
    • Department of French Studies and Modern Languages
    • Department of Social and Political Sciences
    • Centre of Teaching and Learning (KE.DI.M.A.)
    • Mesogios Publications

13. UNIVERSITY CAMPUS
    • University House “Anastasios G. Leventis”
      - Rector’s Office
      - Director’s Office
      - Central Administration
      - Human Resources Service
      - Research, International and Public Relations Service
      - Finance Services
      - Academic Affairs and Student Welfare Service
      - Technical Services – Campus Development Office
      - Internal Audit
      - Centre of Continuing Education and Assessment (KE.P.E.A.A.)
    • Faculty of Pure and Applied Sciences
      - Office of the Dean of the Faculty of Pure and Applied Sciences
      - Department of Biological Sciences
      - Department of Mathematics and Statistics
      - Department of Physics
      - Department of Chemistry
      - Common Teaching Facilities
    • Facilities Management Units
    • Stores Building
    • Peripheral Building
      - Department of Biological Sciences
      - Department of Mathematics and Statistics
      - Oceanographic Centre
    • Site Offices

14. LATSIA ANNEX
    • Lecture Rooms
    • Department of Mechanical and Manufacturing Engineering
    • Department of Electrical and Computer Engineering

15. 29 KALLIPOLEOS AVENUE (Iakovio Building)
    • Department of Law
    • Translation Centre
    • Language Centre
    • Centre of Teaching and Learning (KE.DI.M.A.)

16. 10 HALKOKONDILI STREET
    • Turcological Library

17. 38 KALLIPOLEOS AVENUE (Amaral 27)
    • Faculty of Engineering

18. 23A ARIADNIS STREET & 68 LEDRAS STREET (Ledras)
    • Department of Architecture (Faculty of Engineering)
    • Department of Civil and Environmental Engineering

19. 56 VITHLEEM & 1 VITONOS STREET (Arsalidou)
    • Department of Civil and Environmental Engineering
    • Library

20. 9 BOUBOULINAS STREET (Pelegkari)
    • Library

21. 3 FEDERICO GARCIA LORCA STREET (Platani)
    • Library

22. 9 KIMONOS STREET (Rolandos)
    • Department of Psychology

23. 167 LARNAKAS AVENUE (Pitsiakos)
    • Library
ACCESS TO THE NEW UNIVERSITY CAMPUS

- Larnaka's Avenue
- Proposed round-about
- Proposed road
- Energy Centre
- East Entrance
- Indoor Sports Hall
- Outdoor Sports Fields
- "Anastasios G. Leventis" University House
- Faculty of Pure and Applied Sciences
- Peripheral Building
- Student Residences
- St. George's Chapel
- Proposed round-about
- Existing round-about
- Proposed round-about
FST 01 • DEPARTMENT OF COMPUTER SCIENCE • DEPARTMENT OF MATHEMATICS AND STATISTICS
FST 02 • DEPARTMENT OF BIOLOGICAL SCIENCES • DEPARTMENT OF CHEMISTRY • DEPARTMENT OF PHYSICS
CTF 01 • AUDITORIA
### UNIVERSE OF CYPRUS

**University House “Anastasios G. Leventis”** • P.O. Box 20537, 1678 Nicosia
Tel.: (+357) 22894000 • E-mail: admin@ucy.ac.cy • http://www.ucy.ac.cy

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