



University
of Cyprus

Postgraduate Prospectus Supplement 2017-2019



CONTENTS

Introduction	3
Postgraduate Studies Regulations	3

FACULTY OF ENGINEERING

Department of Civil and Environmental Engineering	6
Department of Electrical and Computer Engineering	9
Department of Mechanical and Manufacturing Engineering	10

FACULTY OF HUMANITIES

Department of French and European Studies	14
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FACULTY OF PURE AND APPLIED SCIENCES

Department of Biological Sciences	18
Department of Chemistry	20
Department of Computer Science	21

DEPARTMENT OF SOCIAL SCIENCES AND EDUCATION

Department of Psychology	24
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INTRODUCTION

The Postgraduate Prospectus Supplement 2017-2019 is issued in the interim year and updates the existing data of the Postgraduate Prospectus 2017-2019, with regards to changes in course descriptions, course titles, course codes, credits and curriculum. The main objective of this publication is to give both potential and current students relevant and updated information on postgraduate programmes of study. For more detailed information on the postgraduate programmes of study offered by the different departments, please visit the online version of Postgraduate Prospectus 2017-2019 on the website: www.ucy.ac.cy/prospectuses-en.

POSTGRADUATE STUDIES REGULATIONS

Detailed updated information on the Postgraduate Regulations can be found on the University's website: www.ucy.ac.cy/graduateschool/studiesregulations/en.

Postgraduate Prospectus

Supplement 2017-2019

FACULTY OF ENGINEERING



DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Revised Academic Course Categories for Civil Engineering Specializations

1. Earthquake Engineering

Category A (Basic Courses)

CEE 501 Advanced Computer-Aided Structural Analysis
 CEE 521 Structural Dynamics and Earthquake Engineering
 CEE 522 Advanced Topics in Earthquake Engineering
 CEE 523 Passive and Active Control of Structural Systems
 CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures
 CEE 535 Plasticity Theory
 CEE 537 Rehabilitation and Strengthening of Structures
 CEE 545 Nonlinear Structural Analysis
 CEE 555 Soil Dynamics and Engineering Seismology

Category B (Relevant Courses)

CEE 500 Engineering Applications with Software Development
 CEE 512 Risk Analysis in Civil and Environmental Engineering
 CEE 526 Finite Element Methods
 CEE 528 Advanced Topics in Structural Analysis
 CEE 532 Advanced Technology of Materials
 CEE 533 Local and Traditional Building Materials
 CEE 538 Experimental Methods in Structural Engineering
 CEE 540 Behavior and Design of Reinforced Concrete Structures
 CEE 543 Bridge Engineering
 CEE 547 Masonry Structures
 CEE 556 Advanced Foundation Engineering

2. Structural Analysis

Category A (Basic Courses)

CEE 501 Advanced Computer-Aided Structural Analysis
 CEE 509 Computational Mechanics
 CEE 512 Risk Analysis in Civil and Environmental Engineering
 CEE 521 Structural Dynamics and Earthquake Engineering
 CEE 526 Finite Element Methods
 CEE 528 Advanced Topics in Structural Analysis
 CEE 535 Plasticity Theory
 CEE 545 Nonlinear Structural Analysis

Category B (Relevant Courses)

CEE 500 Engineering Applications with Software Development
CEE 517 Operations Research in Civil and Environmental Engineering
CEE 522 Advanced Topics in Earthquake Engineering
CEE 523 Passive and Active Control of Structural Systems
CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures
CEE 532 Advanced Technology of Materials
CEE 537 Rehabilitation and Strengthening of Structures
CEE 540 Behavior and Design of Reinforced Concrete Structures
CEE 543 Bridge Engineering
CEE 547 Masonry Structures
CEE 555 Soil Dynamics and Engineering Seismology
CEE 556 Advanced Foundation Engineering

3. Novel and Traditional Construction Materials**Category A (Basic Courses)**

CEE 532 Advanced Technology of Materials
CEE 533 Local and Traditional Building Materials
CEE 534 Physical Properties and Related Durability Problems of Construction Materials
CEE 537 Rehabilitation and Strengthening of Structures
CEE 538 Experimental Methods in Structural Engineering
CEE 539 Advanced Topics in Novel and Traditional Construction Materials
CEE 546 Building Physics
CEE 547 Masonry Structures
CEE 562 Asphalt Materials

Category B (Relevant Courses)

CEE 531 Seismic Behavior and Assessment of Reinforced Concrete Structures
CEE 526 Finite Element Methods
CEE 535 Plasticity Theory
CEE 536 Energy Efficiency of Buildings
CEE 543 Bridge Engineering
CEE 540 Behavior and Design of Reinforced Concrete Structures
CEE 586 Sustainable Built Environment

4. Geotechnical Engineering**Category A (Basic Courses)**

CEE 509 Computational Mechanics
CEE 526 Finite Element Methods
CEE 535 Plasticity Theory

CEE 555 Soil Dynamics and Engineering Seismology
 CEE 556 Advanced Foundation Engineering
 CEE 557 Coastal and Offshore Geotechnical Engineering
 CEE 558 Advanced Topics in Geotechnical Engineering
 CEE 574 Environmental Geotechnics

Category B (Relevant Courses)

CEE 500 Engineering Applications with Software Development
 CEE 534 Physical Properties and Related Durability Problems of Construction Materials
 CEE 511 Construction Engineering and Management
 CEE 512 Risk Analysis in Civil and Environmental Engineering
 CEE 521 Structural Dynamics and Earthquake Engineering
 CEE 538 Experimental Methods in Structural Engineering
 CEE 543 Bridge Engineering
 CEE 562 Asphalt Materials

5. Construction and Transport Infrastructure Management

Category A (Basic Courses)

CEE 511 Construction Engineering and Management
 CEE 516 Building Information Models
 CEE 517 Operations Research in Civil and Environmental Engineering
 CEE 560 Advanced Transport Planning
 CEE 563 Advanced Topics in Traffic Engineering and Intelligent Transport Systems-ITS

Category B (Relevant Courses)

CEE 512 Risk Analysis in Civil and Environmental Engineering
 CEE 513 Specifications and Conditions of Construction Contracts
 CEE 515 Advanced Topics in Construction Management
 CEE 543 Bridge Engineering
 CEE 561 Highway Design and Road Safety
 CEE 562 Asphalt Materials
 CEE 564 Civil/Transport Economics and Finance
 CEE 565 Multi-Modal Systems and Logistics
 CEE 566 Transit Systems
 CEE 567 Advanced Topics in Transport Infrastructure
 CEE 581 Environmental Risk Assessment

Note: Course categories: A–Basic, B–Relevant, F–CEED, UCY

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**New Courses****HMY 601 Supplementary Autonomous Study for Master Students (2 ECTS)**

Research project related to topics covered by courses offered at the Department. The area/subject of the research project is decided by the supervising faculty in consultation with the student.

HMY 687 Building Integration of Photovoltaic (PV): Towards Nearly Zero Energy Buildings (NZEB) (8 ECTS)

Introductory graduate-level course on Building Integration of Photovoltaics (BIPV) in a Nearly Zero Energy Building (NZEB) context. Review of current policy, directives, regulation and goals on building energy efficiency and NZEBs. Available advanced components, technologies, tools, systems, techniques and theories in modelling a building for achieving NZEB design and incorporating BIPV. Calculation of the size and cost of a system to offset building energy use. Study of smart systems for energy management and grid integration: monitoring consumption, RES generation and environmental conditions are included, as well as case studies of smart meter projects.

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

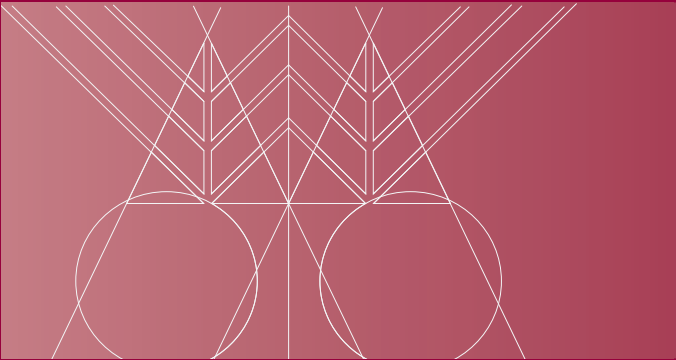
New Course

MME 551 Nonlinear Mechanics of Solids and Structures (8 ECTS)

This course aims to cover a particular area in theoretical solid mechanics, which is very fundamental to any engineer active in applied mechanics, biomechanics and computational mechanics. As such, the nonlinear mechanics of solid matter using a continuum-based approach is presented, where particular emphasis is put in the derivation of the governing equations and constitutive equations that could describe the mechanical behaviour of linear and nonlinear solids and structures.

The course opens with a brief introduction to the fundamentals in solid mechanics by describing several stress, strain and deformation measures in continuum mechanics. Subsequently, in the second part of the course, the derivation of the equations of motion and equilibrium for deformable solids is presented. It also briefly covers information on variational principles, which constitute the cornerstone to formulate finite element procedures. In the third and major part of the course, the constitutive equations that describe the mechanical behaviour on a wide range of elastic solids is presented: spanning from linear elastic (including isotropic and anisotropic) materials to hypo - and hyperelastic, viscoelastic, elastoplastic and viscoelastoplastic solids. In the last part, analytical solutions to axially and spherically symmetric solutions for linear elastic and elastoplastic solids under quasi-static loading is outlined. In summary, this course covers essential material in advanced solid mechanics for final year undergraduates and postgraduates in mechanical engineering, bioengineering and civil engineering.





Postgraduate Prospectus

Supplement 2017-2019

FACULTY OF HUMANITIES



DEPARTMENT OF FRENCH AND EUROPEAN STUDIES

New Courses

In the Master Programme in European Studies, three new courses have been added:

FES 759 Dada et Surréalisme: Mouvements Européens(10 ECTS)

Le cours étudie en profondeur les mouvements Dada et Surréalisme qui ont marqué l'avant-garde française et européenne pendant la première moitié du XXe siècle. Il en examine également la riche fortune, avec ses retombées bénéfiques sur la littérature et l'art, qui constituent jusqu'à nos jours l'objet d'une intense réflexion et de nombreuses recherches. Le cours examine la dimension théorique ainsi que les formes d'expression de la création dadaïste et surréaliste dans plusieurs pays européens à travers des textes, des tableaux et des sculptures. L'objectif est de donner l'occasion aux étudiants d'étudier et de comprendre les particularités de ces deux mouvements et de mesurer leur importance pour la création artistique et littéraire autant que le rôle qu'ils ont joué dans l'histoire des idées en Europe.

FES 773 The Europe of Nations (10 ECTS)

Even the most romantic and ardent Europeans, devotees of a federal Europe, recognize today that the Nation-State is a very stable political form that enjoys the confidence of the citizens of the states of Europe. The "resistance of the nations" proved to be much stronger than expected, to the extent that the folding of protectionist societies and economies seems today to be a one-way street. Another model of Europe is being proposed, that of the "Europe of Nations" storyline from the heart of the 19th century and the reflection of Giuseppe Mazzini (1805-1872), who saw in the newly established National-State entity (République) hope for the emancipation of nations. New Italy, united, democratic and national, would roam in the New Europe, a "Holy Alliance" of the nations, unlike that of its tyrants. The course will follow the emergence of the national-state model of Europe by Vico (1668-1744), and the "common nature of the nations", to Kant (1724-1804) and Mazzini. Can and under what conditions should this model work in today's European and global reality?

FES 775 European Spiritualities (10 ECTS)

"And spirituality, my dear Claude? What is politics without spirituality?" Through the work of the late Foucault, to whom is attributed the question cited by Claude Mauriac, it appears that the European identity problem, which is essentially the problem of European politics, is the problem of the loss of European spirituality. The system that prevails in the European continent, the liberal individualism, seems to bear no spirituality. But is it so? Michel Foucault disagrees. His lessons, lectures, interventions from 1975 until his death in 1984, are essentially a survey on the European liberal spirituality. The modern liberal governmentality is in the writings of the French thinker the living heir of the Greco-Roman spiritual exercises (Hadot) and of the Christian pastoral. Through a dynamic discontinuous transformation process, the Greco-Roman-Christian European heritage infuses critical tradition and the Enlightenment. Through Foucault's research, Western individualism, always targeted by the anti-liberal advocates of a terrestrial or heavenly "authentic existence", becomes conscious of its own spirituality as an essential orchestration of human autonomy by the liberal project.





Postgraduate Prospectus

Supplement 2017-2019

FACULTY OF PURE AND APPLIED SCIENCES



DEPARTMENT OF BIOLOGICAL SCIENCES

Postgraduate Programmes - Language of Instruction

Since Spring Semester 2017/2018, all courses in our postgraduate programmes of study are taught in English.

Changes in Programmes of Study

Master in Molecular Biology and Biomedicine

The course BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS) has been added to the list of restricted elective courses (Table B, Postgraduate Prospectus 2017/2019).

Master in Biomedical Sciences

The course BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS) has been added to the list of restricted elective courses (Table C, Postgraduate Prospectus 2017/2019).

Master in Biodiversity and Ecology

The courses BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS) and BIO 871 Molecular Ecology (10 ECTS) have been added to the list of restricted elective courses (Table F, Postgraduate Prospectus 2017-2019). In addition, the course CEE 581 Environmental Threat Assessment (10 ECTS) has been removed from the aforementioned list.

Ph.D. in Biomedical Sciences

The course BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS) has been added to the list of restricted elective courses (Table I, Postgraduate Prospectus 2017/2019).

Ph.D. in Biodiversity and Ecology

The courses BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS), BIO 660 Developmental Genetics: Embryos, Cells and Genes (10 ECTS), BIO 740 Cellular Communication (10 ECTS), BIO 760 Topics in Genomics and Proteomics (10 ECTS) and BIO 871 Molecular Ecology (10 ECTS) have been added to the list of restricted elective courses (Table J, Postgraduate Prospectus 2017/2019).

In addition, the course CEE 581 Environmental Threat Assessment (10 ECTS) has been removed from the aforementioned list.

New Courses

BIO 660 Developmental Genetics: Embryos, Cells and Genes (10 ECTS)

This course discusses fundamental aspects of the cellular and genetic basis of the fascinating, but still incompletely understood process of embryonic development: the transformation of the fertilized egg into the newborn individual. The course discusses the general concepts of embryonic development that are shared between all vertebrate animals, including humans, at the cellular and genetic levels. Specific topics of fundamental processes of vertebrate development and capabilities related to developmental mechanisms e.g. cloning of organisms and tissue regeneration are discussed using model organisms.

BIO 768 Genes, Microbes and Environment in Intestinal Health (10 ECTS)

The goal of this course is to illustrate the importance of synergisms among gene alleles, microbes and the intestinal environment that predispose for intestinal inflammation and cancer. Through lectures, student presentations and free group discussions of the literature, we aim to understand critical aspects of intestinal human homeostasis and disease, including inflammatory bowel disease and intestinal tumor formation and metastasis. We will highlight the importance of *Drosophila* genetics, histopathology and quantitative population genetics analysis to identify the host genes, microbes and dietary factors that mediate inflammation and predispose for cancer. The usefulness of modeling human diseases primarily in flies, subsequently in mice and the necessity to follow up with human studies will be described, based on the high degree of conservation between *Drosophila* and mammalian signaling pathways controlling intestinal regeneration.

BIO 871 Molecular Ecology (10 ECTS)

This course will provide an overview of the application of molecular genetic tools to ecological questions and will introduce the genetic markers, techniques and analyses commonly used in this field. The focus will be on how recent advances in molecular techniques can be used at population-, species- and community-levels to explore the dynamics of biodiversity in a changing world, including applications of population genetics, phylogeography, phylogenetics, DNA-based species delimitation and taxonomic assignment, genomics and metagenomics. The course will consist of a series of lectures, group discussions on research papers, hands-on exercises and student presentations on selected topics.

DEPARTMENT OF CHEMISTRY**New Course****CHE 715 Mass Spectrometry (10 ECTS)**

This course covers the micro-analytical method of mass spectrometry for the detection of traces of chemicals in simple and complex matrixes. The contents of the course include a brief history in mass spectrometry, the understanding of the basic terminology, the theory behind mass spectra interpretation, the essential parts and modes of instrument operation (tune, SIM, SCAN mode), references to simple process mass spectrometers, the wide coupling (hyphenated) of single (GC-MS, LC-MS, ICP-MS, TG-MS, etc.) and double mass spectrometers (tandem GC-MS/MS, tandem LC-MS/MS), the portable mass spectrometers (field/on-site spectrometers), the MALDI technique and various applications at environmental, food and beverages, forensic and pharmaceutical sectors.

DEPARTMENT OF COMPUTER SCIENCE

New Courses

CS 681 Advanced Topics in Software Reuse (8 ECTS)

Restricted Choice for MCS, MIntS, MIC, PM

Levels of reuse. Best practices for reuse. Evolution of reuse. Software repositories. Search and retrieval. Data extraction. Use of dedicated APIs. Design patterns. Object-oriented programming standards. Open source software. Open source licensing and legal issues. Organization policies and open-source based development. License compliance. Model-driven engineering reuse. Service-oriented computing (SOAP, RESTful).

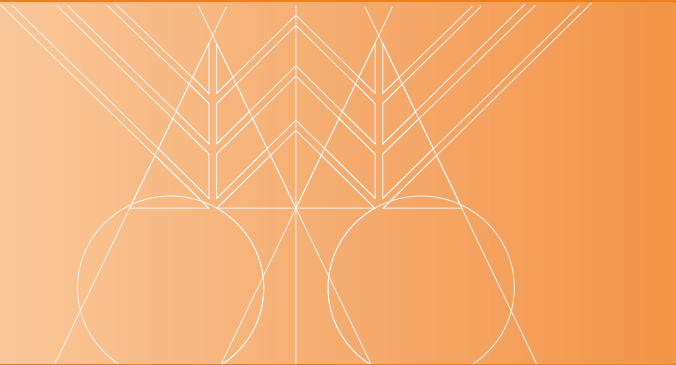
New Joint Master Programme on Cognitive Systems

This is a joint programme between the University of Cyprus (Department of Psychology and Department of Computer Science) and the Open University of Cyprus (School of Pure and Applied Sciences).

Since the inception of the computing paradigm, the prevalent metaphor for a computer has been that of a multi-purpose tool, as exemplified by the use of “command lines” and “desktops” at the interface between humans and computers. The aim of the Programme is to teach the new paradigm of cognitive computing. The M.Sc. Programme in Cognitive Systems brings together two main scientific areas: Cognitive Psychology and Artificial Intelligence in Computer Science. Aiming, on the one hand, for the prospective students to understand the basis for human cognition, the Programme is strongly influenced by Cognitive Psychology and includes learning modules that explore the fundamentals of perception, learning, mental representation and reasoning in humans. Aiming, on the other hand, for the prospective students to be able to design cognitive systems, the Programme places its emphasis on the investigation of computational methods and tools for understanding and designing cognitive systems and includes learning modules from connectionist and symbolic artificial intelligence, from machine learning, and learning modules on recent developments in cognitive computing.

Students are required to take:

- The first three courses under the Foundations theme (COS 511, COS 512, COS 513), where at least the two introductory courses (COS 511, COS 512) are expected to be taken during the first semester
- Electives among all other courses, as long as at least one third of the courses come from Cognitive Psychology (CP), and one third from Computer Science (CS)



Postgraduate Prospectus

Supplement 2017-2019

FACULTY OF SOCIAL SCIENCES AND EDUCATION



DEPARTMENT OF PSYCHOLOGY

New Course

PSY 641 Epistemology of the Social Sciences and Research Design (ECTS 7.5)

The aim of the course is to familiarize students with: (a) the most fundamental and important concepts of the philosophy of science and its distinction from pseudo-science, b) various research paradigms (Positivism, Constructivism, Realism, Phenomenology, Critical Theory) and ways and processes of producing knowledge in the scientific field of social the sciences and c) linking research methodology with statistical analysis. The course also aims to engage students as critical readers of empirical research, who, by the end of the lectures, should be able to write their own research proposals. The course will aim at conceptual understanding of the links between statistical analysis, the formulation and investigation of research questions and assumptions, research planning/design and operationalization of variables.

Changes in Programmes of Study

Master in Social Developmental Psychology

There is a change in the structure of the Programme as follows: In the case that a student chooses to complete the Programme with a dissertation, the new course PSY 641 will be added to the mandatory courses, by raising the number of the mandatory courses from 4 to 5. Then, for the elective courses, students should choose 5 instead of 6 courses as previously. In the case that a student chooses to complete the Programme without the dissertation, then this course will be added to the mandatory courses and the elective courses to be selected will be reduced from 9 to 8 (page 204, Postgraduate Prospectus 2017-2019).

MA in Cognitive and Educational Psychology

The new course PSY 641 will be added to the list of elective courses and the students will be able to choose it as an elective course (page 199, Postgraduate Prospectus 2017/2019).

PhD in Psychology

The new course PSY 641 will be added to the list of elective courses and the students will be able to choose it as an elective course (page 210, Postgraduate Prospectus 2017/2019).

New Joint Master Programme on Cognitive Systems

This is a joint programme between the University of Cyprus (Department of Psychology and Department of Computer Science) and the Open University of Cyprus (School of Pure and Applied Sciences). For more information about the Programme, please refer to the Department of Computer Science, page 21.





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