Department of

ELECTRICAL and
COMPUTER ENGINEERING

Faculty of Engineering
Introduction

The Department of Electrical and Computer Engineering (ECE) covers a wide range of topics and scientific areas, which are at the centre of cutting-edge technologies. Such areas include control systems, electric power, telecommunications and transmission of information, digital and analogue electronic systems, and biomedical applications. Undergraduate students of the Department graduate with sufficient training in basic subjects of electrical power, electromagnetism, optics, and analytical methods, as well as principles of design and development of computer systems and embedded systems, including computer hardware and software. Students specialize in cutting-edge fields and have the opportunity to participate in international research, in an environment of partnership and collaboration with academics and industry.

The Department started accepting undergraduate and doctoral students in September 2003, and postgraduate (Master) students from September 2004. It offers high quality programmes at both undergraduate and postgraduate levels. These programmes emphasize on the fundamental principles and prepare students for leadership roles, so that they can successfully meet and surpass the scientific and social challenges arising from the rapidly changing technological evolution. The Department also encourages collaboration between faculty, students and other industry and research organizations, both locally and internationally. This way, the appropriate background is developed, leading to high quality research which brings innovations and technological progress, with all the consequent socio-economic benefits. The professors of the Department are experienced, world-renowned academics, with each professor being an expert in his or her field.

RESEARCH AREAS

- Power and Renewable Energy Systems
- Telecommunication Systems and Networks
- Biomedical Engineering
- Signal and Image Processing
- Electromagnetic Waves, Microwaves, Antennas and Optics
- Intelligent Systems and Control
- Instrumentation, Sensors, and Nanotechnology
- Electronics
- High Performance Computing and Architectures
- Computer Networks
- Digital Hardware Design and Testing
- Integrated Circuit Design
- Computational Intelligence and Robotics
The Department offers two separate undergraduate degrees:
- B.Sc. in Electrical Engineering
- B.Sc. in Computer Engineering

Each student receives further training in more advanced subjects, either in Electrical Engineering or Computer Engineering. In the fourth year, students can choose courses from a range of specialized areas, according to their interests. In addition, the fourth year includes a group or individual design project, which can be selected from a number of categories and be implemented under the guidance of a faculty member of the Department.

The Department also offers a Minor Degree in Biomedical Engineering, in collaboration with the Department of Biological Sciences and other departments.

**AREAS OF SPECIALIZATION**

During the fourth year of study, undergraduate students follow a specialization programme, where they must complete six Elective Courses, of which at least three of them must come from the same specialized field.

For students pursuing the Electrical Engineering curriculum, the areas of specialization are:
- Telecommunication Systems and Networks
- Biomedical Engineering
- Power Systems
- Intelligent Systems and Control
- Waves, Antennas and Optics

For students following the Computer Engineering curriculum, the areas of specialization are:
- Computer Hardware Systems and Embedded Systems
- Intelligent Systems and Robotics
- Computer networks
- Biomedical Engineering

**POSTGRADUATE STUDIES**

The Department covers a wide range of scientific areas, which are at the heart of the technology frontier. The scientific fields in which the Department conducts research include control systems, energy systems, telecommunications and information systems, as well as renewable energy resources, digital and analogue electronic systems and biomedical applications.

The following postgraduate degrees are offered:
- Master in Electrical Engineering (M.Sc./M.Eng.)
- Master in Computer Engineering (M.Sc./M.Eng.)
- Master of Science in «Intelligent Critical Infrastructure Systems» (M.Sc.)
- Doctor of Philosophy (Ph.D.) in Electrical Engineering (Ph.D.)
- Doctor of Philosophy (Ph.D.) in Computer Engineering (Ph.D.)

It also participates in the interdepartmental postgraduate programme:
- Master in «Energy Technologies and Sustainable Design» (M.Sc./M.Eng.)
INTERNATIONAL RECOGNITION AND SOCIAL CONTRIBUTION

The Department has shown significant research activity since its beginning in 2002. Specifically, the Engineering School has acquired 72.5 million euros (UCY budget) in research funding from external sources, such as European grants (ERC, H2020, 6th -7th Framework Program, EDA, ESA, ESF, COST Actions, Marie Curie Actions etc.), the Research and Innovation Foundation of Cyprus, industry, and government agencies etc.

Our students have excelled in various domestic and international competitions. A recent example, in 2020, a group of students of the Department were awarded with the first prize in the European Competition of Entrepreneurship and Innovation. The Aid4All team has developed a communication system for athletes with hearing disabilities, that uses the sense of touch in order to replace the traditional whistle sound used during various individual and team sports.

FUTURE EMPLOYABILITY

There are plenty of job opportunities for electrical and computer engineers and the number of opportunities is expected to increase as new horizons will open in the future with the constantly growing technological advances. Graduates of the Department can register at the Cyprus Scientific and Technical Chamber, known as ETEK, as electronic engineers or electrical engineers, which gives them the right to work as licensed engineers. Employment opportunities can be found in the industry, the private sector, governmental departments, and educational and research institutions. Many of our graduates have found employment in the Electricity Authority of Cyprus (EAC) and the Cyprus Telecommunications Authority (CYTA).

In addition, our graduates can join various research centers, both in Cyprus and abroad, as early-stage researchers, as well as to be employed in the research and development departments (R&D) of various organisations in the industry. Such employment opportunities are offered by the following Research Centers of the Department:

- «KIOS» Research and Innovation Center of Excellence
- «FOSS» Research Centre for Sustainable Energy
- «EMPHASIS» Research Centre in Electronics, Microwaves, PHotonic and Sensors In Systems
- «IRIDA» Research Centre for Communication Technologies
Testimonials of Students/Alumni

ELENI DEMARCHOU, Ph.D. Student at the University of Cyprus, Postgraduate Degree at the University of Southampton, Undergraduate Degree in Electrical Engineering at the University of Cyprus

I first started at the ECE Department as an undergraduate student. During my studies, I have learned the basic principles in the field of Engineering, that is the methods and techniques of Electrical Engineering but also the way of thinking as an Electrical Engineer. As a final year undergraduate student, I was fascinated by the research facilities of the Department, which I became familiar with during my research project in the fourth year of my studies. Equipped with the knowledge I gained during my undergraduate degree, I was able to obtain a Master’s degree in Telecommunications from the University of Southampton. Having in mind the high level of pioneering research done by the University of Cyprus, and especially by the Department of ECE and its excellent and internationally reputable academics, I returned to the University of Cyprus as a Ph.D. student in the sector of Telecommunications. With the continuous support and guidance provided by the research team of IRIDA, from which my research is being funded, and surrounded by qualified researchers, I was able to receive the necessary training which accelerated my professional career as a researcher in the field of Telecommunications.

IOANNIS PAPADOPOULOS, Third-Year Undergraduate Student in Electrical Engineering at the University of Cyprus

During my undergraduate studies at the Department of Electrical and Computer Engineering at the University of Cyprus, I have had the honour to stand next to outstanding professors, graduates from internationally reputable academic institutions, who with their passion and brilliance in teaching, are successfully transferring their knowledge to the upcoming generations of engineers. The strong and challenging curriculum offered by the Department, enables the student to study a plethora of areas in Engineering, allowing him/her to decide the field in which he/she wishes to specialize. A student’s hard work and consistency towards academic responsibilities is rewarded, as excellent students are offered employment opportunities in the Department’s Research Centers. Along with my capacity as a student, I have also joined the FOSS Research Centre for Sustainable Energy as a special researcher, where I have the opportunity to gain knowledge and experience that benefit my development towards a professional career. The knowledge gained in the academic halls is transformed into practice. In the same way, innovative and pioneering ideas are eventually evolved into reality. As a third-year student of the Department of Electrical and Computer Engineering at the University of Cyprus, I feel that I am part of this modern family of engineers and researchers and, therefore, I am equipped with all the necessary skills and knowledge for my future career.

EVANGELIA ATHANASSIOU, Postgraduate Student at DTU, Denmark, Undergraduate Degree in Electrical Engineering at the University of Cyprus

My undergraduate studies at the University of Cyprus as an Electrical Engineer, as well as my secondary degree in Biomedical Engineering at UCY, have created lots of choices for my future. Through the demanding yet extremely rewarding undergraduate degree in Electrical Engineering, I gained basic knowledge, which was proven to be very valuable during my Master’s degree - which also shaped the way I approach and try to solve my problems in everyday life. My secondary degree in Biomedical Engineering gave me the opportunity to choose between several courses from various disciplines, which were proven valuable in my subsequent course. In parallel with my studies at the University of Cyprus, I was also given the opportunity to work on various research programmes. More specifically, participating in the Student Exchange Programme of the EMPHASIS research centre of UCY in collaboration with the Texas A&M University helped me gain meaningful experiences, meet excellent scientists from both Cyprus and abroad, strengthen my critical way of thinking by expanding my knowledge in various fields - which helped me to continue to fight for what I love. The secondary programme helped me realize which topic I really wanted to pursue, leading to my decision to complete a postgraduate degree in Biomedical Engineering at the Technical University of Denmark, during which my undergraduate degree in Electrical Engineering was proven useful in the areas of Signal Processing for Biomedical Applications, which is now my specialty.
KATERINA HADJIGEORGIOU, Postdoctoral Researcher at the Nanotechnology Imaging and Detection Laboratory, Robotics Instructor for Children and Adults, Undergraduate Degree/Postgraduate Degree/Doctoral Programme in Electrical Engineering at the University of Cyprus

By establishing a solid foundation on the principles of science during my undergraduate studies, as well as being guided by remarkable professors, who inspired me with their dedication and work, I started developing a diagnostic tool for the study of urinary tract infections. This study led to the completion of my doctoral dissertation. The journey of a human in the present-day world shows, daily, that the need for interdisciplinarity is insurmountable. Therefore, I believe that every research can be successful, as long as scientific fields from different areas are combined. The critical thinking environment cultivated by the Department and the research opportunities provided by the Department to the students and collaborators, led me to this conclusion. As young researchers, we owe it to ourselves to listen to the needs of modern life, to search for future technological advances and to always act for the benefit of science and humanity.

SOLON FALAS, Computer Engineer at KIOS Research and Innovation Center, Ph.D. Candidate, Undergraduate Degree in Computer Engineering at the University of Cyprus

The University of Cyprus was my first choice for starting my academic studies in the field of Computer Engineering. As soon as I began the undergraduate programme of the Department of Electrical and Computer Engineering, I immediately became familiar with the world’s latest technology. By combining a wide range of courses, we were able to learn about many aspects of Computer Engineering, from basic programming principles to the design and implementation of complex digital circuits, such as a central processing unit of a computer. Our professors’ passion and enthusiasm, dedication and expertise allow them to transmit their knowledge successfully and easily. Finally, the professionalism and the direct communication with the faculty, were the reasons that led me choose to continue my studies at UCY, via the doctoral programme of the Department.