

SCHOOL OF SCIENCES AND ENGINEERING

DEPARTMENT OF ENGINEERING



Introduction

The Department of Engineering offers undergraduate studies (BSc) in five engineering disciplines:

- Civil and Environmental Engineering
- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Oil and Gas Engineering

Furthermore, the department offers post-graduate studies (MSc and PhD) in Electrical Engineering and in Oil, Gas and Energy Engineering.

All five engineering disciplines mentioned above are subject to continuous technological evolution due to a plethora of new discoveries and innovative applications in various sectors of the society. Today's innovations in science and technology have helped civil engineers design and build marvelous buildings and bridges capable of withstanding strong earthquakes and other disastrous natural phenomena. These same engineers also design smart cities that are environmentally friendly and self-sustainable due to their low-carbon footprint and innovative renewable energy resources. Environmental engineers devise engineering technologies and processes intended to mitigate the impact of hazardous wastes and undesirable gas releases to the environment.

Advances in Electrical and Computer Engineering have led to the emergence of smart and interactive entertainment toolboxes, autonomous physical cyber systems, communication devices and smartphones, wearable and implantable biomedical devices, sensor networks, self-driving cars, and many more. Consequently, computers, the internet and cloud computing have become essential components of our everyday life.

Mechanical engineers have revolutionised the industrial world since the early 20th century. Thanks to this industrial revolution, people today enjoy safe and efficient cars and motorcycles as well as aerodynamic airplanes, spaceships and trains. Mechanical engineering also finds numerous applications in medicine with the design of prosthetic limbs, artificial joints, mechanical hearts, robotics, and other biocompatible materials and parts.

Oil and Gas engineers integrate geological and geophysical data, as well as drilling technologies, to locate and develop oil and gas fields. New engineering systems, such as deep-water platforms, horizontal drilling and hydraulic fracturing have helped unlock new unconventional energy sources. Abundant supplies of oil and natural gas continue to lift millions of people out of poverty, creating value and work opportunities.

Great Career Opportunities

The ever-increasing use of technology offers expanding career opportunities in all engineering disciplines. At no time in history has engineering played such an important role in improving the standard of living and the quality of life, boosting productivity and reducing unemployment, creating wealth and prosperity. Engineering plays an important role in all sectors of society including education, entertainment, construction, transportation, protection of the environment, energy, healthcare, medicine, etc. A good example is the use of technology in medicine. Smart electronic devices equipped with microchips, cameras and robotic arms are routinely used daily by doctors to perform critical medical procedures and surgeries which require high precision in an invasive fashion. At the dawn of a new millennium, engineering has a vital role to play for the well-being of humanity and the future of the planet.

The Department of Engineering at the University of Nicosia has a major role to play in this technological revolution. During the four-year programmes, our graduates acquire the fundamental theoretical knowledge and laboratory experience to become the future leaders of science and engineering. Our goal is to equip future engineers with a solid foundation in basic engineering principles and concepts, as well as concrete and valuable knowledge on specialised topics ranging from earthquake resistant structures and state of the art drilling and exploration of hydrocarbons to autonomous cyber physical systems, unmanned low-emission/electric vehicles and high-speed wireless communication networks.

Balance of Theory and Lab Work

All engineering programmes are based on both lectures covering theoretical aspects as well as laboratory sessions with emphasis given on the design and development of systems and modules. These courses are supported by advanced equipment and state-of-the-art hardware and software facilities for experimentation. They aim at preparing undergraduate students for a professional career in the industry or for advanced post-graduate studies in an engineering or related field. Great emphasis is given to the process of analysis and design throughout all years of study, and therefore, projects are included in all of the major theoretical and laboratory courses. This provides the theoretical foundation and the practical skills for our students to successfully complete a demanding final year (capstone design) project at the end of their undergraduate journey.

Students have access to the following well-equipped laboratories:

- Civil Engineering
- Chromatography
- Electrical and Computer Engineering
- Mechanical Technology
- Mechanical Testing and Manufacturing
- Physics and Prototyping
- Oil and Gas Engineering
- Radio-Communications
- Refrigeration and Air-Conditioning
- Renewable Energy Sources
- Vehicle Technology
- Welding

Commitment to Excellence in Teaching and Research

In our Department we seek to attract students who demonstrate creative analytical thinking, persistence and discipline, self-motivation, and intelligence. As the engineering field is very demanding, future engineering students must be able to adapt to a rapidly evolving environment and embrace new challenges and opportunities. Students are taught to be independent thinkers, create independent types of work, perform high-tech projects, write technical reports, conduct research on cutting-edge technology, and present their work. In the Department of Engineering, we are committed to excellence in teaching and research in order to safeguard high quality standards among our graduates and promote evolution and technological advancement.





“The quantitative knowledge and skills that I gained in the Engineering Department at UNIC became the very solid foundation on which my subsequent career was built.

Engineering as a subject is known to be intense and challenging, but at UNIC it was also very rewarding. As a student, I felt very lucky to have had the opportunity to attend classes organised and delivered by talented and caring educators, who came to UNIC from some of the world's most renowned universities. I fondly remember the exchanges that I had with my professors, who actively engage the students not just in the classroom, but who are also very supportive in personal guidance and mentoring.

In addition to gaining advanced skills in mathematics, electronics and computer programming, I appreciate how I was also able to explore numerous other courses in the humanities

and social sciences that helped to satisfy my curiosity and expand my intellectual horizons.

Upon completing my degree in Electrical Engineering with a 4.0 GPA, I went on to enrol in a Masters programme in Environmental Health at the Cyprus International Institute for Environmental and Public Health, followed by the Ph.D. programme in Biostatistics at Harvard University in the United States. I am now the Founder and Chief Data Scientist at EADX, a big data analytics and business consulting company, based in Singapore.

Looking back at those four years, I am truly grateful for being a member of the UNIC family, and for the crucial role that it played in helping to shape my future .”

Emmanuel Dimont
Electrical Engineering, Class of 2008

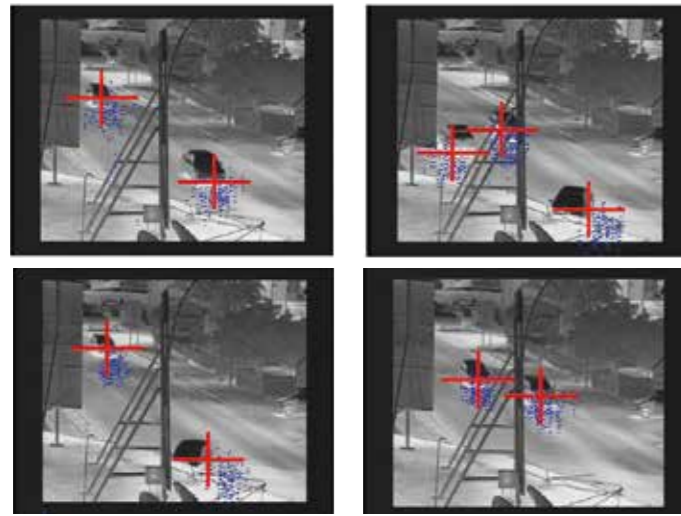
WHY STUDY ENGINEERING AT UNIC

1. UNIC graduates are employed by renowned companies working on major engineering projects with huge impact on society and economy
2. Access to state-of-the-art experimental laboratories and computer facilities
3. Faculty with strong publication record and, through research collaborations with industry, universities and research centres, participation in externally funded research projects
4. Engineering industries require graduates to work in a multi-cultural environment, equipped with excellent communication skills and knowledge of the English language. UNIC delivers the taught material and lectures primarily in English, thus preparing graduates to work in any engineering industry around the world
5. Small classes of students (fewer than 20 students) promoting excellence in teaching and learning
6. Access to emerging technologies through UNIC's research network with industry, universities and research centres around the world
7. Full professional certification in Cyprus by the Cyprus Scientific and Technical Chamber (ETEK)



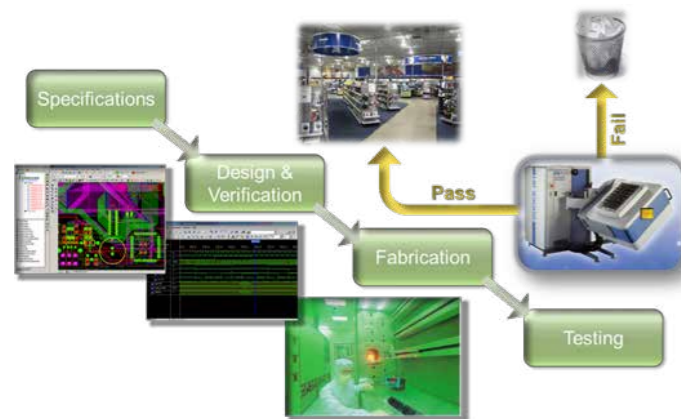
Research

Research in Electrical Engineering includes heterogeneous data fusion and algorithms for the coordination of cognitive sensor networks. Applications include fusing data from radar, image, and acoustic sensors. Cognitive networks optimise their behaviour in order to detect and track small boats at sea or vehicles on the road, to cover large areas collecting environmental information, or to protect critical infrastructure.



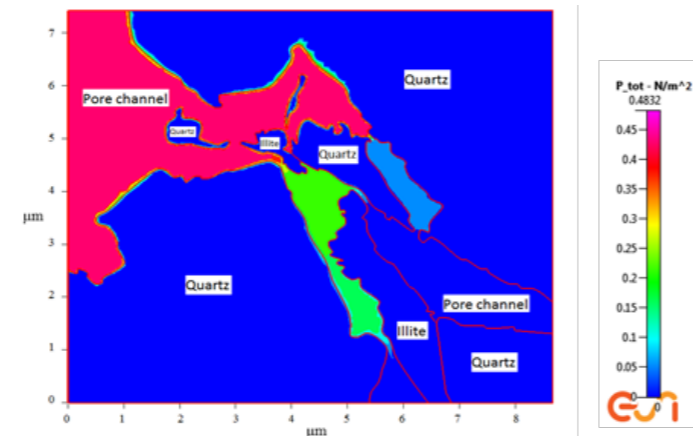
AI object tracking system

Research in Computer Engineering mainly concentrates on post manufacturing testing of Very Large Scale Integrated (VLSI) circuits (microchips). Specifically, it considers the design, optimisation and evaluation of methodologies and algorithms for high-quality test generation and verification, test set compaction and self-testing architectures. These methodologies utilise both theoretical approaches developing graph theoretic algorithms as well as hardware-tailored techniques such as parallel processing and shared memory utilisation.



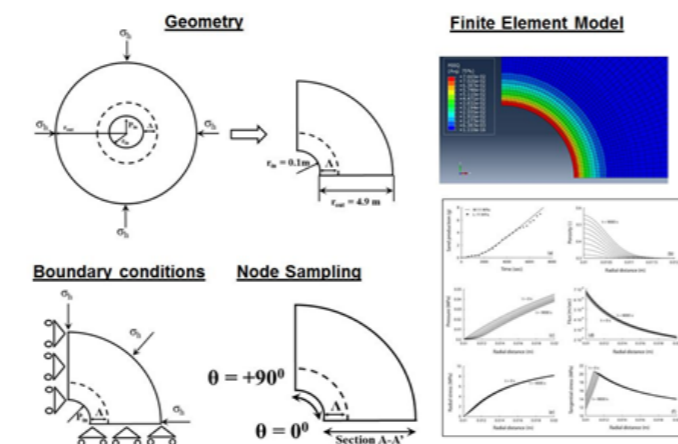
The various steps involved in VLSI design, fabrication and testing

Research in Oil and Gas Engineering covers a wide spectrum of topics. Current projects comprise the geological and reservoir aspects of deposits offshore Cyprus, the mechanical elements of well drilling as well as the production of natural gas from fractured formations. Another research project aims to capture and safely store carbon dioxide in subsurface formations. Considering the environmentally friendly nature of natural gas we explore ways for treating it. Last, but not least, in the context of climate change we research the future role of fossil fuels in a carbon constrained world.



Velocity magnitude of natural gas production from a fractured reservoir at the microscopic scale

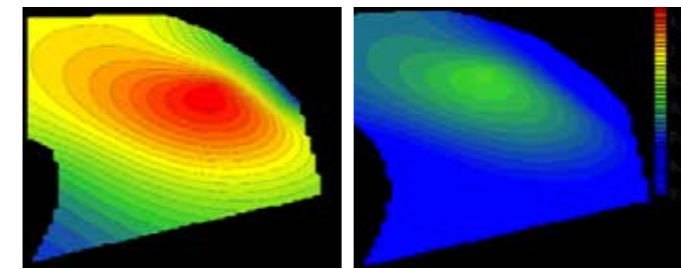
Another focus of research in Oil and Gas Engineering is petroleum related rock mechanics. Current projects in petroleum geomechanics include: sand erosion, proppant flowback, hydraulic fracturing, CO_2 sequestration and wellbore stability. Hereunder we outline the importance of selected research topics. Sand production or wellbore erosion is a complex physical process which depends on the external stress and flow rate conditions as well as on the state of the material. Models developed for the prediction of sand production are usually solved numerically due to the complexity of the governing equations.



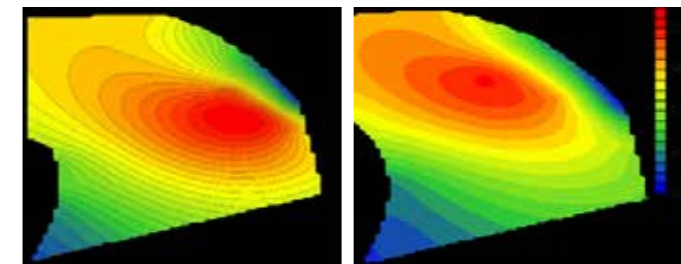
Numerical analysis of sand production

Proppant flowback is an issue that follows after stimulation treatments, a problem well known to the industry. It ranges from trivial proppant amounts produced during initial production to returns of half or more of the total volume of proppants injected leading to fracture closure. The mathematical problem of a fluid driven fracture arises in hydraulic fracturing, a technique widely used in the petroleum industry to enhance the recovery of hydrocarbons from underground reservoirs.

A major research project in **Mechanical Engineering** is Ship's Performance Holistic Optimisation System (S-PHOS) including Health Condition Monitoring, Data Analytics, Simulation, Diagnostics, Decision Making, Condition Based Maintenance, Efficiency, Emissions, and Life Cycle Cost, is an innovative approach of the Ship's Performance Simulation and Optimisation.

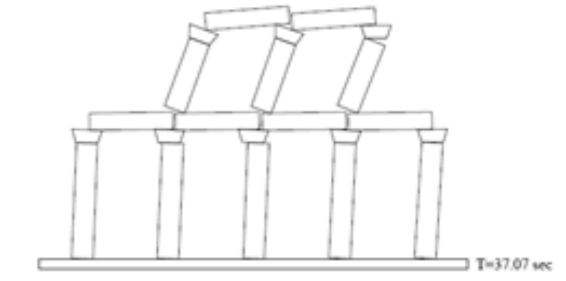
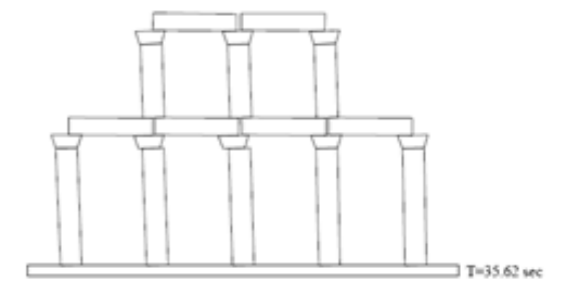


Fuel to air ratio distribution inside the internal combustion engine cylinder



Temperature distribution inside the internal combustion engine cylinder

Research in Civil and Environmental Engineering includes numerous fields such as structural analysis and design, earthquake engineering, structural dynamics, computer-aided engineering and energy efficiency of buildings. Some of the international publications of our researchers include poundings of buildings during earthquakes and the response of ancient columns and colonnades during earthquakes. Civil Engineers design, construct and preserve our physical and built environment.



Numerical analysis of ancient column structures under earthquake loads

Programme Accreditation

The curricula of all engineering programmes in the department are fully accredited by the Cyprus Ministry of Education and Culture. They have also been approved by the Cyprus Scientific and Technical Chamber (ETEK) and our graduates are in a position to register as licensed Engineers with ETEK. Our programmes conform to the undisputable academic guidelines set by international

accreditation bodies such as the Accreditation Board for Engineering and Technology (ABET) in the United States. They include a considerable number of major and elective courses of theoretical and applied nature which add to the programme diversity and contribute to the foundation of a broad range of skills for career positions in academia and industry.

PROGRAMMES OF STUDY

CIVIL AND ENVIRONMENTAL ENGINEERING (BSc)

Degree awarded:	Bachelor of Science (BSc)
Duration of study:	4 years
Mode of study:	full time part time
ECTS credits:	240
Language of instruction:	English Greek*
Mode of delivery:	on campus

* Programme offered in English. Some courses may also be offered in Greek during the first year.

This programme equips students with the fundamental knowledge, analytical skills, engineering tools, and laboratory experience to compete successfully in the technologically challenging fields of Civil and Environmental Engineering. The programme covers a number of key areas including construction, road and highway design, structural design, structural dynamics, earthquake engineering, solid waste management, wastewater treatment, and air pollution.

Two specialisations are available:

- Civil Engineering
- Environmental Engineering



Career Prospects

Civil and Environmental Engineering is one of the largest and fastest growing engineering disciplines in Europe and one of the best performers in the EU economy. Moreover, building construction and land development is one of the major sectors of the Cypriot economy. Therefore, the demand for civil engineers will continue to rise as, globally, the need for infrastructure projects increases. Despite the recent financial crisis in Cyprus and the devastating wars in the Middle East region in the last decade, there is still a great deal of construction going on in the region, including building constructions, road constructions, and land development. Recently, a great emphasis has also been placed on green development, smart cities and the design of environmentally friendly, energy efficient, sustainable, and ecological buildings. Processing and management of solid wastes and wastewater constitute additional areas of employment for our graduates. More specifically, a graduate with a BSc degree in Civil and Environmental Engineering may be employed in the following fields:

- structural engineering services
- geotechnical engineering services
- building construction
- road and highway construction
- rehabilitation and seismic strengthening of old and traditional buildings
- heavy construction industry (dams, bridges, underground structures, ports, airports, etc)
- environmental engineering services
- buildings energy improvement
- recycling and waste management
- processing of hazardous material
- research and development
- education including teaching and research

COMPUTER ENGINEERING (BSc)

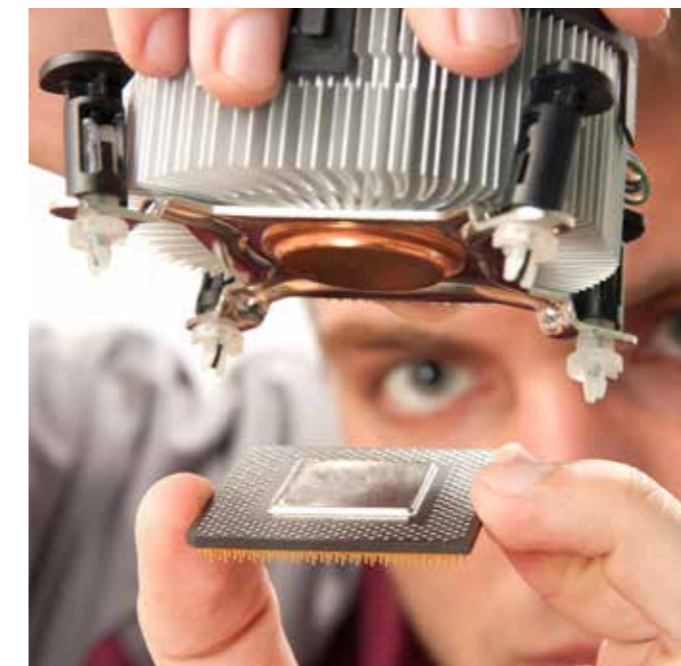
Degree awarded:	Bachelor of Science (BSc)
Duration of study:	4 years
Mode of study:	full time part time
ECTS credits:	240
Language of instruction:	English Greek*
Mode of delivery:	on campus

* Programme offered in English. Some courses may also be offered in Greek during the first year.

This programme equips students with the technical knowledge and analytical skills to effectively tackle engineering problems and provide viable solutions. The major engineering courses include theory, fundamental principles, elements of analysis and design, as well as significant laboratory work.

Two specialisations are available:

- Computer Systems and Networks
- Software Engineering and Applications



Career Prospects

Computer engineers may be employed in a variety of industry sectors ranging from academic and research organisations to government agencies and private companies. Their duties involve the use of electrical and computer skills, hardware design techniques, and programming expertise to develop computer products for a plethora of applications including computer games, animation movies, entertainment gadgets, multimedia equipment, computer-aided control equipment, supercomputers, or application-specific microcontroller and integrated circuits. Computer engineers often work in the field of Information Technology (IT) which is a rapidly growing field that affects every aspect of our lives. We live in a world of computing and information with plethora of applications in the financial market (e.g. banks), retail business, commerce and e-commerce, trading, telecommunications, transportation, education, etc. Everything we do nowadays involves the use of computers and microcontrollers. Typical job titles are:

- computing systems and microcontroller programmer
- system analyst and developer
- hardware and embedded systems designer
- software developer/engineer
- network engineer
- computer and network security engineer
- mobile and cloud computing specialist
- microchip manufacture and test engineer
- system administrator
- IT specialist
- IT consultant
- computer/programming teacher

ELECTRICAL ENGINEERING (BSc)

Degree awarded:	Bachelor of Science (BSc)
Duration of study:	4 years
Mode of study:	full time part time
ECTS credits:	240
Language of instruction:	English Greek*
Mode of delivery:	on campus

* Programme offered in English. Some courses may also be offered in Greek during the first year.

The programme equips students with the ability to identify, formulate and solve problems in the area of Electrical Engineering using techniques, skills, creative thinking and modern engineering tools, necessary for engineering practice. The programme offers fundamental courses on mathematics, physics and computer technology, as well as specialised knowledge on areas of electronic circuits, communications, signal processing, electromagnetics, machines, power engineering, microprocessors, VLSI, embedded systems, and many more. Students are free to select elective courses from different areas of specialisation according to their preferences.

Three specialisations are available:

- Communications and Signal Processing
- Microwaves, Antennas and Optics
- Power and Automation Systems

ELECTRICAL ENGINEERING (MSc)

Degree awarded:	Master of Science (MSc)
Duration of study:	1.5 years
Mode of study:	full time part time
ECTS credits:	90
Language of instruction:	English
Mode of delivery:	on campus

The programme examines current and emerging trends and technologies, and prepares students to pursue employment opportunities in design, research, development, management, or teaching; alternatively, to continue towards a PhD. The programme offers four areas of focus allowing students to choose those courses that will meet their future career goals:

- Signal Processing and Communications
- Electromagnetics, Antennas and Microwave Engineering
- Renewable Energy Sources and Power Systems
- VLSI and Embedded Systems

ELECTRICAL ENGINEERING (PhD)

Degree awarded:	Doctor of Philosophy (PhD)
Duration of study:	3-8 years
Mode of study:	full time part time
ECTS credits:	180
Language of instruction:	English

This programme is intended for students who have excelled during their undergraduate and/or graduate studies, have strong motivation and enthusiasm toward technological research and innovation, and are inclined to remain in an academic or research environment working on emerging technologies and challenging engineering projects. The Department of Engineering of the University of Nicosia is dedicated to providing PhD candidates with in-depth academic knowledge and hands-on experience on advanced engineering topics such as telecommunications, signal and image processing, microwave engineering, antenna technology and wave propagation, power system analysis and design, renewable energy technologies, and computer engineering systems.

The high-caliber academic staff of the department is dedicated to working closely with students to solve current engineering problems, thereby producing new knowledge and results that can be published in reputable journals and conference proceedings. During their studies, students will have the opportunity to work on funded research projects, co-author papers with their advisors and other classmates, present their contributions at international conferences, participate in the write-up of research proposals, prepare scientific reports, use simulation software, perform laboratory experiments, attend training schools, participate in workshops, etc. The three-year experience acquired during their PhD studies, working primarily on formulating and solving challenging engineering problems, will provide students with the necessary skills and qualifications to excel in their field of expertise and secure a research/academic position at a university or college, a government institute, or high-tech company.

Career Prospects

Electrical Engineering graduates will be able to use the acquired technical knowledge and analytical skills to effectively tackle engineering problems and provide viable solutions. Electrical Engineers may work in both the government and private sector. Potential employment opportunities include employment by:

- telecommunication companies to design and monitor large-scale telecommunication systems
- electric companies in order to work in power generating plants, distribution networks, etc.
- industrial production units utilising electricity through diverse electric motors via industrial automation systems, heaters, coolers, etc.
- companies dealing with any kind of home and outdoors automation systems
- construction companies designing and installing diverse electrical supply facilities
- software companies to design and develop algorithms that provide solutions to engineering type of application problems
- companies specialising in industrial automation and control
- companies which design electronic circuits that perform important functions for a wide range of applications. Good examples include mobile phones, electronic gadgets, televisions, cameras, CD players, etc.
- companies that design and implement algorithms that improve network traffic, reduce time delays, eliminate noise and interference, etc.
- companies that seek IT engineers to set up Local Area Networks (LANs) and monitor data traffic and quality of service
- large, multi-national companies who seek consultants in the fields of telecommunications, semiconductors, electronics, and networks
- army, navy, and defense companies
- radar and monitoring system facilities
- high schools as teachers of technology and electronics
- university/research



OIL AND GAS ENGINEERING (BSc)

Degree awarded:	Bachelor of Science (BSc)
Duration of study:	4 years
Mode of study:	full time part time
ECTS credits:	240
Language of instruction:	English Greek*
Mode of delivery:	on campus

* Programme offered in English. Some courses may also be offered in Greek during the first year.

Conventional sources of energy such as oil and natural gas, currently meet the majority of the world's energy needs, making our modern lifestyle possible. Recognising the increasingly important necessity to fuel future energy needs in a sustainable and yet affordable fashion, the University of Nicosia offers the undergraduate programme in Oil and Gas Engineering.

The programme covers the upstream and downstream aspects of the petroleum industry including petroleum geology, geophysics, drilling engineering, production engineering, reservoir engineering and oil and natural gas processing and transportation. It also includes classes on health, safety and environmental issues, petroleum economics and energy security. To better assimilate the concepts taught in class, students in their fourth year of studies develop an oil or gas field as part of a team assignment. In addition, students perform hands-on laboratory experiments and become familiar with state-of-the-art petroleum engineering software.

OIL, GAS AND ENERGY ENGINEERING (MSc)

Degree awarded:	Master of Science (MSc)
Duration of study:	1.5 years
Mode of study:	full time part time
ECTS credits:	90
Language of instruction:	English
Mode of delivery:	on campus

New realities associated with global warming and air pollution call for the need of abundant and more environmentally friendly energy sources such as natural gas. Meeting these goals, the interdisciplinary Master's Programme in Oil, Gas and Energy Engineering equips students with specialised knowledge and skills to address the obstacles towards a sustainable future.

The programme covers the upstream and downstream aspects of the petroleum industry, including drilling methods and well engineering, reservoir and production engineering, liquefied natural gas (LNG) systems, oil and gas pipeline transmission, geophysical methods and unconventional petroleum resources. Candidates will acquire specialised knowledge in energy markets and economics, energy efficiency, health, safety and risk management, project execution, environmental impact assessment as well as energy security and geopolitics.

OIL, GAS AND ENERGY ENGINEERING (PhD)

Degree awarded:	Doctor of Philosophy (PhD)
Duration of study:	3-8 years
Mode of study:	full time part time
ECTS credits:	180
Language of instruction:	English

This doctoral degree is intended for students who have excelled during their undergraduate and graduate studies, have a strong motivation and enthusiasm toward technological research and innovation, and are inclined to remain in an academic or research environment working on emerging technologies and challenging engineering projects.

The PhD in Oil, Gas and Energy Engineering admits a small number of well-qualified applicants each year, who conduct cutting-edge research on a wide range of advanced engineering topics such as hydrocarbon geology, liquefied natural gas production, pipeline engineering, flow assurance, fracture mechanics, hydraulic fracturing, enhanced oil and gas recovery, carbon dioxide capture and sequestration, subsea engineering, and unconventional resources.

Academic staff of the programme and industry partners work closely with doctoral students to tackle current engineering problems, thereby generating new knowledge and results that can be published in peer-reviewed journals. During their studies, students will have the opportunity to work on funded research projects, co-author papers with their advisors and other classmates, present their contributions at international conferences, draft research proposals, prepare scientific reports, use specialised simulation software, perform lab experiments, attend training schools, participate in workshops, etc.

Career Prospects

This field offers very good career opportunities. The demand for energy and therefore the need for fossil fuels grows steadily around the world. It is expected that investments in drilling and exploitation of energy resources particularly for unconventional fields such as offshore for oil and gas, will continue to be strong. Thus, the global employment outlook is promising. It is further expected that the discovery of oil and gas in the Eastern Mediterranean will attract even more companies and activities, with an increasing number of job opportunities. Graduates of the Oil and Gas Engineering programmes may be employed in a number of sectors which include:

- energy companies
- national oil companies
- oilfield service companies
- offshore exploration
- liquefied natural gas (LNG) terminal
- fuel storage and suppliers depots
- chemical manufacturing industries
- equipment manufacturers
- energy regulators
- refined fuel traders
- consultancies
- university/research



MECHANICAL ENGINEERING (BSc)

Degree awarded:	Bachelor of Science (BSc)
Duration of study:	4 years
Mode of study:	full time part time
ECTS credits:	240
Language of instruction:	English Greek*
Mode of delivery:	on campus

* Programme offered in English. Some courses may also be offered in Greek during the first year.

Mechanical Engineering is a discipline that combines and utilises physics and mathematics in unique ways, in order to design, manufacture, produce, and maintain any kind of engineering products. These products can be engineered for a variety of fields such as space, aviation, automotive, marine, buildings, management, and many others. A strong background in physics and mathematics is essential for a mechanical engineer in order to assure quality of engineering products, regardless of the field, through innovative and environment-friendly sustainable design. The programme is characterised by a well-balanced curriculum consisting of courses in various areas of Mechanical Engineering, including elective courses from several specialisations. Such a BSc degree will provide graduates with all necessary tools and knowledge to cope with today's challenges in the industrial and building services sector.

Career Prospects

The range of applications of the Mechanical Engineering discipline has expanded greatly to include Nano Medicine, Nanotechnology, Bioengineering/Biomedical Engineering, Smart Materials, Battery/Storage Technology, Green Building Technologies, Smart Grids, Synthetic Biology, MEMS, Robotics, and Autonomous Systems.

Upon their graduation, Mechanical Engineering students can pursue one of the following:

- attend a graduate school for a Master's or PhD degree (either in Cyprus or abroad)
- pursue a job career in Cyprus in building services, maintenance, heavy industry, hotel industry, engineering planning and design, etc.
- teach in technical schools or high schools (private or public)
- work as a consultant for local or multinational companies specialized in mechanical engineering services and design
- work as research engineers or scientists on locally or European funded projects based on novel engineering ideas and applications
- work for the public or government sector as an engineer



"I'm a graduate of UNIC in Electrical Engineering with a minor in Computer Science. During my five years at the University, I was given the opportunity to shine as part of a team and individually. I received several international recognitions along the way, in a number of tech and innovation competitions (Ennovation, Hackathon), including reaching the World Finals of the prestigious Microsoft Imagine Cup. That year, our team won the Facebook Creativity Award – 1st Place worldwide! During the last three years of my studies, I worked on creating

innovative web and mobile applications for the University, as part of the University's wider focus on technological advancements. I had the chance to work with the Distance Learning IT Unit and Global Training IT Unit, building a series of applications (Moodle platform, research database, mobile apps, and so on)."

Hessan Adnani
Electrical Engineering, Class of 2017

"UNIC helped me discover my abilities and talents, and gave me a new and welcoming family. I met supportive professors and I feel I'm being provided with a very strong background and related knowledge in my field. I also took part in the University's internship programme, working in an

amazing collective of people. Most importantly, my time here made me love my future profession! I'm proud to say that I was a UNIC student."

Daria Korobchuk
Oil and Gas Engineering, Class of 2017

ADMISSIONS CRITERIA

Bachelors Programmes

The Department admits students in the Fall and Spring semesters.

Applications for admission to the BSc programmes will only be considered from candidates that fulfill the minimum entrance criteria as described below:

- The general admission requirement for entry to an undergraduate programme of study is a High School Leaving Certificate or equivalent qualification with an average grade of '15 out of 20' (75%) or its equivalent
- In addition to a strong academic record, the student's extracurricular involvement is taken into account, along with leadership skills and other relevant background information
- Proficiency in English Language: students should present at least a TOEFL score of 513 paper-based or 183 computer-based or 65 internet-based, or GCSE "O" Level with a grade of "C", or IELTS with a score of 5.5, or score placement at the ENGL-100 level of the University of Nicosia Placement Test

Masters Programmes

Eligible applicants must hold a Bachelor degree in the discipline or a related field granted by an institution recognised in the country where it operates. It is desired that applicants have a cumulative point average (CPA) of 3.0/4.0 in their undergraduate work (or equivalent according to the academic system followed in the country of study). Under special circumstances, students with marginally lower CPA may still be admitted. English Proficiency is also required as described below.

Students who are admitted into an MSc programme and do not hold an undergraduate degree in that or a related area may be asked to take a number (3-4) of undergraduate courses from that area.

Each application for admission into an MSc programme should include:

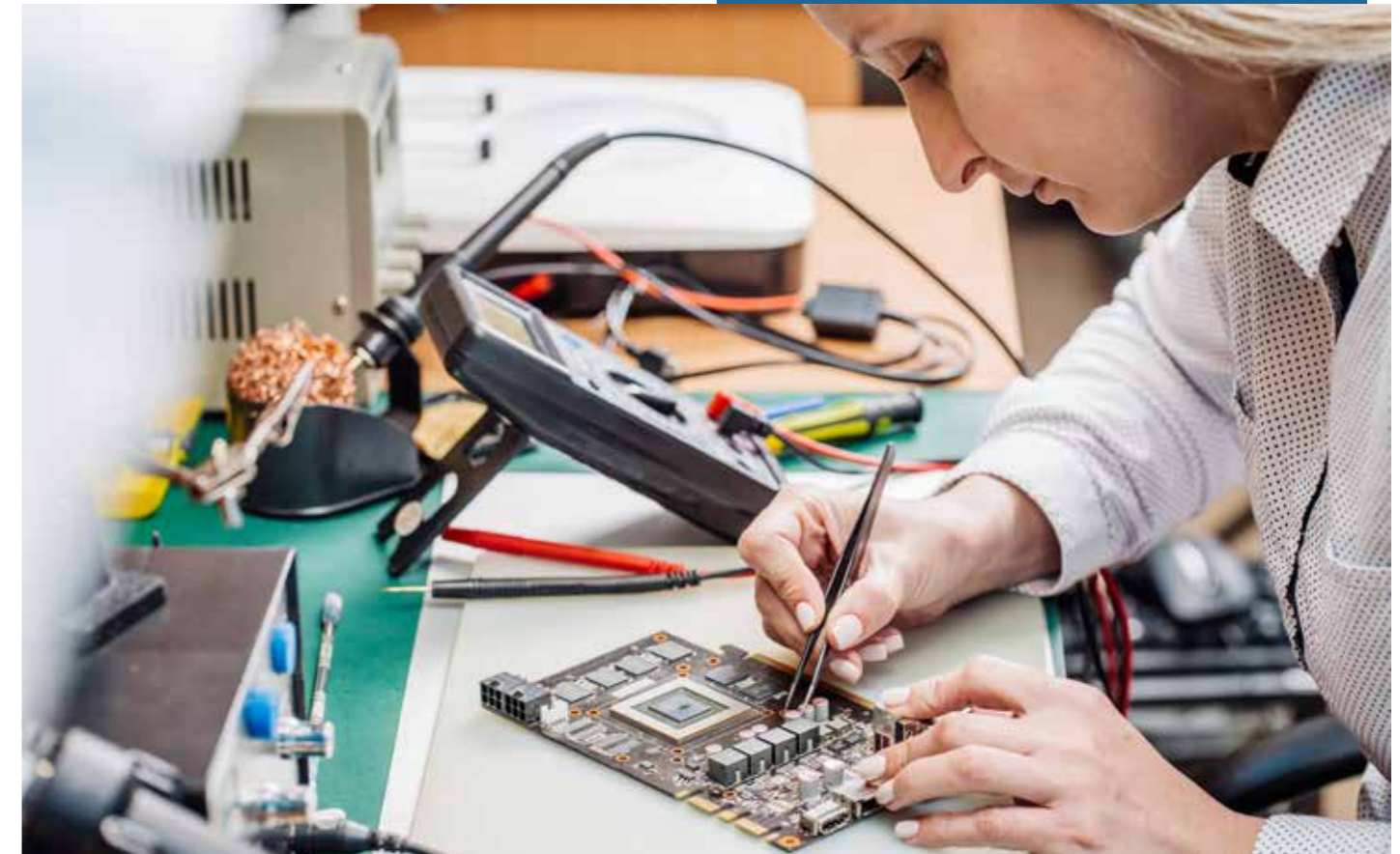
- A cover letter clearly stating the graduate degree the candidate wishes to apply for
- A completed application form
- A Curriculum Vitae indicating the student's education, academic and professional experience, any publications, awards, etc.
- A short statement outlining the reason the candidate wishes to join the programme, the candidate's professional experience, future goals, etc.
- At least two letters of recommendation from academic or professional advisors
- Copies of representative publications, if any
- Copies of all degrees and transcripts (if applicable, a letter from the Registrar of the student's current university verifying the expected graduation date)
- Copies of any other supporting material, such as results of exams, honors, awards, etc.
- Evidence of proficiency in English Language in case the official language of instruction during the undergraduate studies was not English (at least a TOEFL score of 550 paper-based or 213 computer-based or 79 internet-based, or GCSE "O" Level with a grade of "C", or IELTS with a score of 6.0, or score placement at the ENGL-101 level of the University of Nicosia Placement Test)

Doctoral Programmes

For admission to the PhD programmes, eligible candidates should hold a recognised Master's degree in the discipline or a related field. An applicant may be admitted to the programme subject to completing selected graduate courses offered by the Department, if so decided by the Department Graduate Studies Committee. A complete application should be submitted to the Office of Admissions. Students are admitted both in the Fall and Spring semesters.

Application documents and other requirements:

- Completed application form
- Curriculum Vitae (CV)
- Certified true copy of the applicant's qualifications/degree(s)
- Original or certified true copy of transcript(s)
- Proof of language proficiency
- At least two letters of recommendation from academic or professional advisors
- Research work and published articles (if any)
- Personal interview if deemed necessary (in person or through teleconferencing)



List of Full-Time Faculty Supporting the Department Programmes and their Research Interests

The faculty members of the Department of Engineering are experienced and highly qualified academics; many of them have an industry-related background and/or have worked abroad in other universities. All hold postgraduate qualifications and the majority hold relevant PhD degrees. Most of the faculty are also actively engaged in research and have published and continue to publish papers in

international scientific journals and conference proceedings. Moreover, they maintain research collaborations and/or links with other universities and institutions abroad and in Cyprus.

The following full-time faculty members (listed with their research interests), along with several adjunct lecturers, support our Engineering programmes:

Prof Anastasis Polycarpou (PhD in Electrical Engineering)

Numerical methods in electromagnetics, electromagnetic theory, antenna analysis and design, the finite element method, the method of moments, high-frequency asymptotic techniques (UTD, PTD), telecommunication systems, RFID systems, liquid crystals at optical and microwave frequencies.

Prof Dimitris Drikakis (PhD in Mechanical Engineering/Computational Fluid Dynamics)

Computational fluid dynamics, fluid mechanics, multi-scale modelling & simulation with diverse applications in Science, Engineering and Medicine, emerging technologies and their impact on society and economy.

Dr George Gregoriou (PhD in Electrical Engineering)

Signal and image processing, texture analysis, statistical pattern recognition, computer vision, medical imaging (SPECT, MRI), image reconstruction from projections, RFID systems in healthcare applications.

Dr Marios Nestoros (PhD in Physics)

Design and fabrication of antennas for RF applications, photothermal physics, nondestructive characterization of materials, physics of semiconductors, interaction of laser radiation and matter, photothermal gas sensors.

Dr Elias Yfantis (PhD in Mechanical Engineering)

Evaluation of operational and environmental behaviour of diesel engines, development and application of diagnostic techniques for diesel engines, development of gas turbines simulation tools and virtual laboratories, simulation of complex thermodynamic, heat transfer and fluid dynamics phenomena, engineering algorithms supporting organizational change methodologies.

Dr Ioannis Kyriakides (PhD in Electrical Engineering)

Adaptive waveform design, Bayesian target tracking, sequential Monte Carlo methods, radar waveform design, time-varying signal processing, compressive sensing.

Dr Antonis Hadjiantonis (PhD in Electrical Engineering)

Vertical integration and routing/signaling mechanisms in IP/WDM networks, physical layer constraints in optical networks, fault tolerant networks, wireless backhaul, access networks, FTTx solutions and architectures, sensor networks.

Dr Stelios Neophytou (PhD in Computer Engineering)

Digital design CAD tools development, very large scale integration (VLSI) design, verification and testing, design for testability, high quality digital circuit testing, self-testing architectures.

Dr Andreas Michaelides (PhD in Electrical Engineering)

“Sniper-system” an instant shooting results targeting system, integrated inductor/capacitor component for dynamic power factor compensation, power system analysis and electric machines control.

Dr Constantinos Hadjistassou (DPhil in Engineering Science)

Flow in porous media, natural gas production, flow assurance, reservoir engineering, natural gas treatment (acid gas removal) and liquefaction, environmental footprint of the oil & gas sector, offshore installations, biological transport phenomena, decarbonisation, climate change, marine debris, energy emissions.

Dr Ernestos Sarris (PhD in Civil Engineering)

Petroleum geomechanics, petroleum related rock mechanics, hydraulic fracturing, sanding prediction and control, wellbore stability, multiphase flows with applications in CO2 geological storage, theoretical and mathematical theory of fluid flow in porous media, enhanced oil recovery EOR and indentation mechanics, poromechanics with applications to transport phenomena in porous media, fracture mechanics, plasticity theory, analytical methods utilizing the Muskhelishvili-Kolossov complex potential theory, aquifer recharge in hydrology, finite elements, finite volumes, singular integral equations.

Dr Stefano Patruno (PhD in Earth Science and Engineering)

Sedimentary geology, sequence stratigraphy, seismic interpretation, palaeoenvironments, tectonics, oil and gas exploration, carbonates and evaporites.

Dr Panayiotis Polycarpou (PhD in Civil Engineering)

Computational methods in structural dynamics, structural impact problems and impact modelling, numerical methods in engineering, computer-aided structural engineering, modern programming methods in engineering, earthquake engineering, computational dynamics, finite element analysis, discrete element method.

Dr Loizos Papaloizou (PhD in Civil Engineering)

Earthquake engineering, computer-aided engineering, energy efficiency of buildings and innovative technologies in Civil Engineering.

Dr Marios Kyriakides (PhD in Civil and Environmental Engineering)

Reinforced concrete structures, seismic retrofit techniques for structural systems, innovative materials, experimental methods in Civil Engineering, nonlinear Finite Element Analysis, simplified methods for assessing structural performance, structural health monitoring and smart proactive management of structural systems.

Mr Andreas Serghiou (BSc in Computer Engineering, MBA)

Information & communication technology, high frequency antennas, engineering education.



