

POSTGRADUATE (MSC)

Medium of instruction: ENGLISH

Online admission: 1st May - 31st July (Computer Science, Applied Physics) 15th October - 5th February (other programs)

Start of the academic year: 1st October (Computer Science, Applied Physics) 1st March (other programs)



APPLIED PHYSICS



Specialization: Computer Modelling

The graduate will acquire the knowledge and skills in the area of modeling physical, technological, economical, biological and other processes. The competences obtained during studies:

- modeling natural phenomena in science and technology with use of advanced computer applications;
- basics of symbolic computations, computer graphics and visualization;
- computer-controlled measurement stations in research and industry;
- modern information technologies in physics, technology and business: object and mobile programming techniques, algorithms and computational methods in the optimization tasks and engineering calculations;
- techniques of modern measurement systems in science, medicine, industry and everyday life;

 physics as the foundation of other sciences, problems of modern physics, including those defining its interdisciplinary character as a science. Upon completing the degree the graduate is prepared for PhD studies or embark on professional career in science, industry or finance. Graduate is ready to employ in research laboratories, become a programmer, software tester, computer network administrator, web or computer graphic designer, data analysts etc. Physics training is desired by banks and other financial institutions (quanta).













ARCHITECTURE

Accredited by the Royal Institute of British Architects (RIBA) and the European Network for Accreditation of Engineering Education



The Master of Architecture program of studies focuses on a wide range of issues directly affecting contemporary architecture and urban design:

- Architectural and urban design in the fields of multifamily housing and public use buildings,
 - Spatial and regional planning,
- Preservation of monuments and revalorization of urban complexes with design for conservation,
 - Landscape architecture, architecture and planning in the countryside,
 - Building construction systems and building structures,
 - Theory of architecture and urban design as well as spatial and regional planning,

• History of art, culture and contemporary urban design,

 Ecology and environmental protection. Design, history, theory and building structure technology are taught to prepare students for professional registration as architects in the European Union.















CHEMICAL TECHNOLOGY



Specialization: Innovative Chemical Technologies

The Faculty of Chemical Engineering and Technology invites foreign students to enroll on 3 -semesters master studies in English for a major in Innovative Chemical Technologies (ICT).

Major and specialization courses related to industrial catalysis, organic and inorganic technology, production of cosmetics and pharmaceuticals, modern biotechnologies and analytical methods in chemical technology will be carried out from the 2nd to the 3rd semester of the studies.







CIVIL ENGINEERING



Accredited by the European Network for Accreditation of Engineering Education

After completing the 1st cycle studies, the graduate is qualified within the domain of design and erection of any building and engineering structures such as buildings, roads, bridges, shell structures, storage tanks, underground structures erected using reinforced concrete, masonry, metal and timber technologies. The graduate is prepared to oversee and manage the building processes as well as maintenance, operation and restoration of building resources. This knowledge is based on the gains of modern technology, using computer methods and information technologies. The graduate is capable of understanding social, economic, legal and other conditions affecting the engineering activities. He is able to work as a member of a team.







COMPUTER SCIENCE



Nowadays the Computer Science is present everywhere in a human life. Computers are commonly used for working, getting and broadcasting of information, data processing, production management, air- sea- and land traffic control, communication, multimedia and etc. People, who are familiar with modern information techniques, who are able to force computers for use all their possibilities, who know how to exploit capabilities of complex computer networks and who are willing to write programs for a new sophisticated applications are wanted for almost all branches of human activity. Our graduates may obtain a professional knowledge in these and many other problems connected with the use of computers. They will be able to work with project management, software engineering, implementation and management of modern informatics' systems. They will be also able to manage of data bases, internet services, computer systems and networks. They will know how to solve problems in these fields, starting from their analysis, building UML models, creation of algorithms and writing suitable software. Our graduates can get a job in big or small business, industry, telecommunication, administration, services, education, multimedia and many other places.







ENVIRONMENTAL AND LAND ENGINEERING



Program educates future engineers and develops their interdisciplinary professional competences in the following areas:

- the methods for assessment and protection of the aquatic environment, remediation of soil and protection of the atmosphere;
- the use of a variety of engineering tools for data analysis, process and system modeling, and geographic information systems;
- design and operation of building installations and water supply and sewage networks;
- technology and construction of devices for water and wastewater treatment;
- waste management and energy recovery from waste and renewable energy systems;
- designing, construction and operation of heating, cooling, air conditioning and ventilation installations and devices;
- assessment of geotechnical conditions and phenomena occurring between the building and the ground.

The best students, after fulfilling certain conditions, have the opportunity to complete the second and third semesters of studies at the Faculty of Engineering and Architecture at the Università degli Studi di Cagliari (Sardinia, Italy) and obtain two diplomas of graduation: from Cracow University of Technology (Master of Environmental Engineering) and from Università degli Studi di Cagliari (Master in Environmental and Land Engineering).







LANDSCAPE ARCHITECTURE



The Master of Landscape Architecture study programme focuses on contemporary issues of sustainable use of existing landscape resources. It follows the guidelines of IFLA/UNESCO Charter for Landscape Architectural Education, the IFLA Guidance Document for Recognition or Accreditation – Professional Education Programmes in Landscape Architecture and ECLAS Guidance on Landscape Architecture Education. The special emphasis is put on landscape design and landscape planning, as well as development of advanced professional competences of students. The specifics of Landscape Architecture study programme at CUT is demonstrated in the development of Integrated Design Studio – semester projects covering broad range of technical, environmental, cultural and design issues, resulting in one individual project prepared by students in each semester. The projects are supported by the selection of theoretical subjects carried out simultaneously.







POWER ENGINEERING



The course consists of three semesters. At the first semester the basic subjects are included (e.g. Heat Transfer, Fluid Mechanics, Power Plant Technology and Numerical Methods among others). The second semester is dedicated to the Directional Subjects (e.g. Computational Structural Analysis, Computational Fluid Dynamics) and specialization subjects depending on the selected module. The classes are conducted by researchers from Poland and world recognized foreign lecturers. The study program is tailored to the market needs and taking into account modern scientific trends including: design of energy systems, experimental investigation of energy systems, mathematical modeling of energy systems, and the application of modern computer techniques (e.g. Computational Fluid Dynamics, Finite Element Method) for energy systems analysis and design.

The course consists of two modules:

- Energy Systems, which is dedicated to conventional power plants and systems
- Renewable Energy which is dedicated to heating systems and renewable energy technologies







MECHANICS AND MACHINE DESIGN



Specialization: Advanced Computational Mechanics

Advanced Computational Mechanics (ACM) is addressed for students who want to increase their knowledge in mechanics and computer application in design of structures (CAD, FEM), material design (CAMD), material selection (CAMS), manufacturing (CAM) and monitoring of machines.

Program of studies: Advanced mathematics, Engineering mathematics II, Solid state physics, Continuum mechanics , Analytical mechanics, Numerical methods II, Object-oriented programming, Material science II, Modern structural materials, Advanced modeling of materials and structures, Modeling in machine design, Integrated processing systems, Advanced FEM modeling, Advanced strength of materials, Dynamics of mechanical systems, Experimental mechanics of solids, Individual project.











