



Composites and Nanomaterials

Field of study: Chemical Technology



Course summary:

Semester 1

- Engineering of chemical reactors
- Modeling and simulation
- Selected aspects of modern chemistry
- Polymers and polymer composites
- Applied rheology
- Processing of polymeric materials
- Nanocarbons and carbon/polymer composites
- Surface phenomena and catalysis
- Diploma Training (4 weeks)
- Work Safety

Semester 2

- Engineering of nanoporous materials
- Introduction to biotechnology
- Environmental protection and green chemistry
- Polymers and polymer composites
- Advanced materials for generation/storage of energy
- Hybrid materials and fillers
- Characterization techniques of materials
- Biomaterials
- Eligible subject
- Physical Education

Semester 3

- Technological project
- Recycling of materials
- Staff Management
- History of Chemical Science and Industry
- Diploma laboratory
- Diploma seminar

Programme description

Master studies in Chemical Technology – Composites and Nanomaterials last three semesters starting in February each year. The first semester is partly devoted to improve the basic knowledge in chemical technology for candidates studying abroad and those students who (at their bachelor level), studied majors different from chemical technology in order to reach standards defined by the Ministry of Science and Higher Education. Regular courses focus on physical and inorganic chemistry, engineering of materials and chemical reactors, technology of polymers, processing of nanomaterials and composites. Classes on modelling and simulation are also included. Laboratory classes allow to perform synthesis and detailed characterization of composites together with their various practical application using the specific physical, mechanical and electrochemical properties. Ecology and recycling are also included in the programme, as well as advanced materials for generation and storage of energy. The students have also a possibility to select elective courses during studies, e.g. biotechnology, medical aspects or others.

A graduate receives the title – Master of Science in Chemical Technology. He/she is prepared to perform research and development in the discipline of his/her education, i.e. chemical technology, especially in Composites and Nanomaterials. A graduate can be employed in research and industry where the knowledge of advanced materials is required. His/her competences will be synthesis, characterization, processing and application of composites and nanomaterials including environmental protection.



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University	Poznan University of Technology Poznan, POLAND
Degree to be obtained	Master of Science
Programme website	https://www.put.poznan.pl/en
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Language of instruction	English
ECTS points	90
Duration	1.5 years (3 semesters)
Programme begins	end of February
Programme ends	end of June
Deadline for application	3 months before the course starts – end of November
Education requirements	English language – level B2 (Common European Framework), Bachelor of Science degree (or equivalent). Full list of the required documents is available at: https://www.put.poznan.pl/en
Mode of instruction	Lectures, classes, laboratory classes, projects, internships

