



Faculty of Process
and Environmental Engineering

Lodz University
of Technology



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**ADVANCED
TECHNOLOGIES**



Study at the

**Faculty of Process
and Environmental Engineering
Lodz University
of Technology
Lodz
Poland**

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Lodz University of Technology
Faculty of Process and Environmental Engineering



ADVANCED TECHNOLOGIES

Organisational unit

Faculty of Process and Environmental Engineering,
Lodz University of Technology, Lodz, Poland

Duration

1.5 years (3 semesters)

Language

English

ECTS points

90

Programme description

"Advanced Technologies", as part of the Chemical and Process Engineering degree, offers a unique opportunity to gain in-depth knowledge in Computer Aided Process Design, Process Optimisation and Control, and Modelling and Simulation. The structure of the curriculum is focused on programming and problem-solving in Chemical Engineering, using packages of numerical programmes commonly used in the industry, design and education, including Ansys, Fluent, Matlab and Mathcad. Additionally, it offers the opportunity to branch out in such cutting-edge fields of industrial engineering as Industrial Chemistry, Fuels and Energy, Product Design, Process Safety, Bioreactor and Metabolic Engineering, Nanotechnology Fundamentals and Environmental Engineering.

Tuition

EU citizens and permanent residents of the Republic of Poland – gratis.

Non-EU citizens – 1000 EUR per semester, with the opportunity to apply for tuition exemption.

Requirements

The programme is intended for persons who:

- have a bachelor's degree in the field of chemical and process engineering.
- have a postgraduate degree in similar fields, including but not limited to chemical and process engineering, biochemical engineering, chemistry, chemical technology, production management and engineering and biotechnology.

List of courses

Name of Course	ECTS
Semester I	
Computer Aided Process Design I	5
Process Optimisation	5
Introduction to Process Control	5
English in Technics	3
Elective – Group 1	4
Elective – Group 2	8
Elective: Group 1	
Fundamentals of Chemical Engineering*	4
Metabolic Engineering	2
Pharmaceutical Technology	2
*Obligatory for students without a degree in Chemical and Process Engineering	
Elective Group 2	
Flows in Micro and Macro Scale	4
Heterogeneous Reactors	4
Fundamentals of Polymer Processing	4
Semester II	
Non-equilibrium Thermodynamics	2
Computer Aided Process Design II	2
Process CFD simulation	3
Industrial Design	3
Fuels and Energy	3
Product Design and Fabrication	3
Process Safety	1
Bioreactor Engineering	3
Fundamentals of Nanotechnology	6
Electives – two courses from group 3	4
Elective Group 3	
European Strategies	2
Theories and Legal Aspects of Management	2
Innovation Management	2
Semester III	
Diploma Seminar	2
Diploma Laboratory	8
Diploma Thesis	20

Educating for Industry



Environmental Care



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