

Czestochowa University of Technology

Master in Environmental Engineering, specialisation Intelligent Energy for Environmental Protection (MSc)

Częstochowa, Poland

DURATION: 3 Semesters

LANGUAGES: English

PACE: Full time

APPLICATION DEADLINE: November 30th

EARLIEST START DATE: FEBRUARY

TUITION FEES: EUR 1,200 / per semester *

STUDY FORMAT: On-Campus

* plus additional non-refundable 85 PLN (approx. 20 EUR) recruitment fee

Introduction

Graduates of this specialization will be prepared to use innovative methods and techniques in the areas of renewable sources of energy and enforce them in environment protection. Graduates will be given opportunities to widen their knowledge and skills in the use of new, effective technologies of renewable sources of energy in order to take care of the natural environment.

Admissions

- Familiarity with basic concepts in environmental science, renewable energy, and engineering principles
- Knowledge of energy systems, environmental protection technologies, and sustainable practices
- Strong analytical and problem-solving abilities, capable of analyzing complex environmental data, assessing energy systems, and developing sustainable solutions for environmental protection

Curriculum

Year I

Semester 1

- Training on Safe and Hygienic Conditions of Education
- Computer Modelling of Environmental Processes
- Creativity and Innovative Thinking
- Instrumental Methods in Environment
- Intelligent Heating, Ventilation and Air Conditioning

- Renewable Energy Sources

Elective Course:

- Intelligent Technologies in Environmental Engineering
- Social Acceptance of RES

Elective Course:

- New Technologies in Water and Wastewater Treatment
- Biomass Harvesting and Utilization

Elective Course:

- Waste For Material and Energy Recovery
- Waste Management in Power Industry

Semester 2

- Atmosphere Protection and Flue Gas Cleaning
- Business and Innovation in Environmental Protection
- Carbon Management in the Environmental Processes
- Energy Conversion Technologies
- History of Inventions

Elective Course:

- Industrial Wastewater Technologies
- Wastewater Treatment Processing Design – Project

Elective Course:

- Management of Energy Conversion Byproducts and Energy Efficiency
- Waste Heat Management and Energy Efficiency

Elective Course:

- Phytoremediation by Energetic Plants
- Protection of Soil from Environmental Impact

Elective Course:

- Strategies for the International Protection of the Environment
- Circular Economy in Environment

Year II

Semester 3

- Biochar for Advanced Polygeneration
- Diploma Project
- Diploma Seminar
- Interpersonal Communication
- Smart Cities

Program Outcome

- Proficiency in designing, implementing, and managing renewable energy systems such as solar, wind, hydro, and bioenergy to promote sustainable energy use and reduce environmental impact
- In-depth knowledge of environmental protection technologies and practices, including pollution control, waste management, and remediation techniques to mitigate environmental damage
- Ability to assess and improve energy efficiency in various systems and processes, promoting sustainable practices and reducing energy consumption
- Understanding of environmental laws, regulations, and standards, ensuring that energy and environmental projects comply with legal and regulatory requirements