
Wrocław
University
of Science
and Technology
2021/2022
REACH FOR MORE
#WroTech
admission.pwr.edu.pl
Earth
at launch
Mars at
arrival
Hohmann orbit
Mars
at launch
prospectus

BACHELOR'S DEGREE PROGRAMMES

MASTER'S DEGREE PROGRAMMES

WELCOME

to your custom Prospectus of Wrocław University of Science and Technology. It contains information relevant to your interests in future education.

By viewing the individual course pages you will find specific information on courses available in English as a medium of instruction and admission details you will need, such as: the programme's duration, the deadline for application and the start date. You can also find sections on job prospects and courses you will attend during your studies. We hope you find it both useful and interesting.

Contact details

Wrocław University of Science and Technology
International Relations Office
Division of Foreign Students Admission and Support
www.pwr.edu.pl
www.admission.pwr.edu.pl
e-mail: admission@pwr.edu.pl
telephone: +48 71 320 37 11
+48 71 320 31 70
+48 71 320 37 19
+48 71 320 44 39

We look forward to seeing you at Wrocław University of Science and Technology!

Your Admission Officers

DESCRIPTION

Undergraduate studies in management prepare the students for future work as management/organisation specialists, middle-level managers, to developing their own small enterprises, or for post-graduate studies. The graduates will develop their theoretical and practical knowledge in the field of management and related sciences, concerning issues, rules and problems associated with the functioning of organisations such as: enterprises, public institutions and governance structures. The graduates will be ready to undertake crucial roles in project management within commercial or administrative organisations. Moreover, the graduates will be able to communicate and negotiate effectively, as well as work in teams.

ABOUT STUDIES

» **Duration:** 6 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** 1st October 2021
» **Programme coordinator:**
A/Prof. Katarzyna Tworek,
Contact person:
A/Prof. Anna Kowalska-Pyzalska,
Yash Chawla,

JOB PROSPECTS

The knowledge and skills obtained give the gradu- ates the possibility of getting a job as a management/organisation specialist, a middle-level manager in public and private organisations (industry, healthcare, education, services, commerce, central and local authority institutions, etc.), developing their own small enterprises or continuing education at the Master's level.

ENTRY INFORMATION

Requirements: secondary school certificate, received after the completion of a recognised secondary school (total 12 years of education), being the equivalent of Polish Matriculation certificate.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT– 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 1500 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

» **forms of teaching:** Lectures, laboratories, tutorials, projects, research

SEMESTER 1
» Civil and Commercial Law
» Essentials of Management
» Information Technology
» Mathematics
» Microeconomics
» Psychology

SEMESTER 2
» Descriptive Statistics
» Essentials of Finance
» Macroeconomics
» Organisational Science
» Sociology
» Work Environment Physics
» Computer Science Module
» Social Competences Module
» Sports

SEMESTER 3
» Mathematical Economics
» Financial Accounting in the Organisational Decision Making Process
» Marketing in the Information Society
» Organisational Behaviour
» Computer Science Module
» Economic Science Module
» Foreign Language I

SEMESTER 4
» Contemporary Organisational Methods and Techniques
» Corporate Finance
» Logistics
» Marketing Management
» Operations Management
» Legal Science Module
» Computer Science Module
» Foreign Language II

SEMESTER 5
» Diploma Seminar
» Financial Management
» Leading Projects in Modern Organisations
» Marketing Research
» Methods and Tools of Data Analysis
» Modern Human Resource Management
» Total Quality Management
» Computer Science Module

SEMESTER 6
» Bachelor's Thesis
» Business Process Management
» Financial Analysis Supported by Computers
» Information Systems in Management
» Introduction to Risk Management
» Management Training

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

This programme prepares the graduates for creative engineering work in machine design, machine operation and manufacturing processes. The student will be familiar with fundamental methods, techniques, tools and materials used for solving engineering tasks in the field of Mechanical Engineering. The student acquires a directional specialty by studying mechanics, machines theory, principles of machine design, thermodynamics, computer-aided engineering techniques and manufacturing technologies. The programme gives reliable grounds to take a job in any segment of industry and services where designing, producing or maintaining machines and equipment is essential for a business.

ABOUT STUDIES

» **Duration:** 7 semesters
» **Mode of study:** Full time
» **Faculty of:** Mechanical Engineering
» **Language of instruction:** English
» **Start date:** 1st October 2021
» **Programme coordinator:**
Przemysław Susz, Ph.D.

JOB PROSPECTS

The graduate of the Faculty of Mechanical Engineering is a versatile educated engineer, equipped with basic and advanced knowledge as well as industrial practice.

ENTRY INFORMATION

Requirements: secondary school certificate, received after the completion of a recognised secondary school (total 12 years of education), being the equivalent of Polish Matriculation certificate.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English: Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 1500 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTENT

SEMESTER 1
» Metrology Principles
» Theory of Machines
» Engineering Graphics: Descriptive Geometry
» Elementary Linear Algebra
» Mathematical Analysis I
» Chemistry
» Physics
» Information Technologies
» Introduction to Philosophy

SEMESTER 2
» Ergonomy and Safety
» Engineering Graphics: Engineering Drawing
» Engineering Materials Technology
» Thermodynamics
» Materials Science I
» Mechanics I
» Ecology
» Electrical Engineering
» Mathematical Analysis II
» Electronics
» Sport

SEMESTER 3
» Programming in MATLAB
» Statistics for Engineers
» Engineering Graphics 3D
» Fluid Mechanics
» Ordinary Differential Equations
» Mechanics II
» Materials Science II
» Strength of Materials I
» Electrical Engineering
» Chipless Processes – Casting
» Polymers I

SEMESTER 4
» Essentials of Management
» Intellectual Property Law
» Fundamentals of Machine Design I
» Theory of Mechanisms and Manipulators
» Metrology
» Chipless Processes - Plastic Forming
» Chipless Processes - Welding Metallurgy
» Strength of Materials II
» Foreign Language – English C1.1 or other at any level
» Sport

SEMESTER 5
» Fundamentals of Machine Design II
» Manufacturing Processes - Machining
» Hydraulic, Hydrotronic and Pneumatic Systems
» Drive Systems
» Finite Elements Method
» Vehicle Engineering
» Trybology
» Fundamentals of Automatic Control
» Foreign Language - English C1.2 or other at any level

SEMESTER 6
» Offroad Vehicles Engineering
» Hydraulic Drive Systems
» Internal Combustion Engines
» Carrying Structures
» Production System Organisation
» Manufacturing Systems CNC
» Introduction to Diploma Dissertation
» Professional Training

SEMESTER 7
» Polymers in Engineering
» Vehicles Loading Modelling
» Engineering in Medicine
» Fundamentals of Exploitation and Repair
» Management in Production
» Thesis, Seminar
» Thesis: Final Engineering Project

ELECTRONIC AND COMPUTER ENGINEERING

DESCRIPTION

The Electronic and Computer Engineering (EAC) programme meets the needs and demands of the modern labour market for modern electronics. This field of study combines the knowledge of traditional electronics, information technology, industrial automation and robotics – all elements of the contemporary and future Internet of Everything devices.

JOB PROSPECTS

The profile of companies that will benefit from the competence of the graduates is mainly production and service. The demand for specialists with the skills to integrate electronic equipment within analogue and digital systems (including microprocessors) in broadly understood industrial automation is already high and is expected to increase in the future. These skills include PLC programming, PAC, SCADA systems and robotic systems, commissioning of control systems, local and remote maintenance, remote supervision of operating systems for production control. Additionally, the ability to design the widely defined control systems, telemetric systems and measurements will be very positively received on the labour market. Currently, there is a significant increase in the number of companies operating in the field of IoT and the integration of these products into one system (e.g. smart homes). This sphere of activity requires combining engineering knowledge in the field of electronics and information in the field of computer science at every stage – from design, through production, to service.

ENTRY INFORMATION

Requirements: secondary school certificate, received after the completion of a recognised secondary school (12 years of education in total), being the equivalent of Polish Matriculation certificate.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS.
List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students:
1500 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 7 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** 1st October 2021
» **Programme coordinator:**
Grzegorz Budzyń, Ph.D., D.Sc.

CONTENT

SEMESTER 1
» Mathematical Analysis
» Mathematical Algebra
» Introduction to Programming
» Metrology
» Philosophy

SEMESTER 2
» Mathematics Analysis 2
» Mathematics for Electronics
» Object Oriented Programming
» Electronic
» Physics
» Foreign Language

SEMESTER 3
» Physics for Electronics
» Scientific & Engineering Programming
» Electronic Components & Sensors
» Electronic Technology
» Systems Theory
» Foreign Language
» Sports

SEMESTER 4
» Programming Systems & Environments
» Introduction to Microcontrollers
» Electronic Circuits
» Introduction to Automation and Robotics
» Fundamentals of Telecommunication

SEMESTER 5
» Computer Networks
» Microcontrollers Elective courses 1 (choice of 3 out of 5):
» Advanced Topics in Robotics
» Digital Signal Processing
» Artificial Intelligence & Computer Vision
» Optoelectronics
» Wireless Systems

SEMESTER 6
» Team & Preengineering Project
» Electroacoustic Elective courses 2 (choice of 3 out of 5):
» Control Systems Engineering Embedded Systems
» Real Time Operating Systems
» Lasers, Fibres & Applications
» Communication Systems & Networks

SEMESTER 7
» Internship Final Project
» Diploma Seminar Elective courses 3 (choice of 2 out of 15)
» Author Law Business

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The programme emphasises practical aspects of Computer Engineering and can be adapted to the student's interest. The final effect of studies is obtaining of first-level competences - knowledge, skills and qualifications - in accordance with "The Teaching Standards" in the field of Computer Science. The students obtain the basic knowledge of mathematics and physics, general computer science areas, such as: operating systems, algorithms and data structures, languages and programming techniques, digital and analogue technique, computers architecture, project management as well as ethical and legal aspects of computer science. The graduates will be able to: implement and deploy effective, reliable, reliable and safe information systems that meet uders' requirements; comprehend, evaluate and deploy different solutions used in the scope of computer systems; maintain, install, administrate and deploy tools and problem-oriented information systems, develop system documentation.

ABOUT STUDIES

» **Duration:** 7 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** 1st October 2021
» **Programme coordinator:**
Marek Krótkiewicz, Ph.D., D.Sc.

JOB PROSPECTS

Employment in informatics companies that build, deploy and maintain IT tools and systems, particularly employment in project teams, especially programming teams, in organisations and companies using software tools and systems as well as continuing studies at the Master's level.

ENTRY INFORMATION

Requirements: secondary school certificate, received after the completion of a recognised secondary school (total 12 years of education), being the equivalent of Polish Matriculation certificate.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT– 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 1500 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

The student is required to complete 2475 hours of courses (equivalent to 210 ECTS). The programme consists of lectures and practical activities: laboratories, tutorials, seminars and projects). Students must receive credits for all subjects and additionally from practical training. The programme of the training must be consulted with the programme coordinator. Students should write a degree thesis under the direction of a faculty member.

SEMESTER 1
» General Physics I
» Mathematical Analysis
» Algebra and Analytic Geometry
» Logic for IT
» Structural and Object-oriented Programming
» Computer System Organisation

SEMESTER 2
» General Physics II
» Mathematical Analysis
» Discrete Mathematics
» Operating Systems
» Data Structures and Algorithms
» Computer Architecture

SEMESTER 3
» Theory of Probabilistic and Statistics
» Introduction to IT
» Effective Programming Techniques
» Computer Networks
» Basics of Entrepreneurship
» Foreign Language I
» Sports

SEMESTER 4
» Systems Analysis and Decision Support Methods
» Programming Paradigms
» Data Bases
» Basics of Software Engineering
» Foreign Language II - Modules of elective courses
(select one of the courses within the module)
» M1: Administration of Computer Systems:
» Linux Server Administration
» Microsoft Systems Administration

SEMESTER 5
» Software Engineering
» Script Languages
» Cybersecurity
» Presentation Techniques
» Modules of elective courses
(select one of the courses within the module)
» M2: Web Technologies:
» Web Systems Programming
» .NET Web Applications
» M3: Database Design:
» Database Design
» Oracle Databases – programming
» Database Systems Engineering
» M4: Mobile Applications:
» Developing Mobile Applications for Android Platform
» Developing Mobile Applications for IOS Platform

SEMESTER 6
» Data Warehouses
» Artificial Intelligence and Knowledge Engineering
» Practical training
» Modules of elective courses
(select one of the courses within the module)
» M5: Project Management Basics:
» Introduction to IT Project Management
» IT Project Management Support
» Process-based Management of IT Project
» M6: Distributed Systems:
» Distributed Computer System
» Programming Microsoft Azure
» M7: Programming Tools and Technologies:
» .NET Software Development
» Computer Game Programming
» Advanced Web Technologies
» M8: Multimedia:
» Computer Graphics
» Programming Multimedia Applications
» Digital Media Processing Techniques

SEMESTER 7
» Diploma Seminar
» Diploma Thesis
» IT Social and Professional Problems
» Team Project Modules of elective courses
(select one of the courses within the module)
» M9: Current Trends in Computer Science:
» Data Science
» Neural Networks
» Problem Solving Using Metaheuristics
» Human-Computer Interaction
» M10: Humanistic Subject:
» Humanistic Subject 1
» Humanistic Course 2

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The programme ends with a degree examination comprising an oral examination and a presentation of the diploma project. 20 ECTS credits are awarded to students who successfully prepare for the degree examination and write their Master's thesis that includes a diploma project. The scope of subjects in the oral examination covers four basic areas of the curriculum: theory of architecture, theory of urban planning, technology and the history of architecture and urban planning. The degree project consists of a conceptual architectural design with elements of construction design or an urban planning design. After completion of the master's programme in Architecture and Urban Planning students are awarded the Master's Degree in Architecture. Graduates of the programme are equipped with knowledge and skills that enable them to enrol in the doctoral and specialised postgraduate programmes.

JOB PROSPECTS

The study programme includes theoretical and practical aspects of the architectural profession in a balanced way, with an emphasis on the creativity and design independence of graduates. Design courses are supplemented with specialisation courses related to modern construction and theory (theory of architecture and town planning, heritage protection, philosophy, aesthetics) and computer courses (various types of modelling: BIM, 3D). Learning outcomes provide preparation of graduates to: work in architectural and town planning offices, public administration units related to architecture and urban planning. Due to the broad, interdisciplinary profile of education, the graduate may also undertake work related to conducting scientific research, and may also continue education at the Doctoral School. An alumnus can work in a team, is aware of the social role of the architect profession and the humanistic aspects of engineering activities, knows a foreign language and is aware of the need for self-education and professional development.

ENTRY INFORMATION

Requirements: Architect Engineer. Portfolio. Minimum 210 ECTS. Each application is assessed individually on its merits.
If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS.
List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students:
2000 EUR per semester
EU/EFTA students:
no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Joanna Jabłońska, D.Sc., Ph.D., Eng. (Arch).

CONTENT

SEMESTER 1

» Architectural Design (elective)
» Urban Design (elective)
» Conservation and Special Design (elective)
» Protection of Cultural Heritage (elective)
» Theory and History of Architecture
» Theory and History of Urban Planning (20c.–21c.)
» Structures in Contemporary Architecture
» Computer Aided Design BIM
» Foreign Languages (elective)
» An Introduction to Mathematical Modelling

SEMESTER 2

» Architectural Design (elective, including Studios)
» Design Workshop – Integration of Design Processes
» Ecology (elective)
» Physics (acoustics)
» Humanities (elective)
» Sociology and environmental psychology (elective)
» Foreign Languages (elective)
» Metology of Scientific Work
» Structures in Contemporary Architecture
» Modern Technologies
» Ergonomics
» Professional Ethics and Law

SEMESTER 3

» Diploma thesis
» Design workshops 2x (elective)
» Architecture and Urban Planning – Repertory
» Spatial planning

NEW LIFE OF DISAPPEARING ARCHITECTURE.
PROJECT OF A MULTIFUNCTIONAL CENTRE AS A REHABILITATION OF THE SAINT PAOLINO FORTRESS IN ITALY. Author ANNA WIKIERA

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Planning is an interand multidisciplinary field of knowledge and practice which allows professionals to deal with the spatial dimension of human activities. Courses and modules provide education in systems thinking and complexity (systems theory, environmental science), prepare the students for leadership (management) and focus on policy making (urban planning, regional policy, EU spatial policy and marketing places) as well as on planning law and plan preparation (techniques of plan preparation) to prepare students for the complicated processes and procedures in planning practice. Courses in models in spatial policy and spatial economics seek to equip the students with methodological tools for spatial analysis and scenario development.

Wrocław University of Science and Technology is the only university in Poland which offers the courses in modelling and computer simulation of spatial development. The programme consists of 3 semesters and, apart from the compulsory courses, provides a variety of elective courses - from regional planning to advanced tools in spatial modelling and participatory planning. In addition, at least two elective subject streams are opened each semester. The trends are conducted in the form of lectures and design studios, and concern such topics as: climate change, digital technologies, urban renewal, etc. The students are offered to enjoy at least one studio project each semester. A Master's thesis (which can include also a professional project, plan or strategy) exploring a planning research topic must be produced as a final part of the programme (20 ECTS). The thesis has to be presented, in both written and oral form, to a committee of academics for examination.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Wawrzyniec Zipser, Ph.D.
  wawrzyniec.zipser@pwr.edu.pl

JOB PROSPECTS

The graduates in spatial planning can plan their career in both public and private sectors. They are prepared to work at the municipalities, in the planning units as well as in regional authorities' offices and at the national level administration (i.e. Ministry of Infrastructure, Ministry of Regional Development). They can also develop their career in public agencies (e.g. linked to the environmental issues, water management, transportation, tourism, etc.). The graduates are prepared to lead teams working on statutory plans (local plans, urban development plans) as well as on optional planning studies and plans. They can also work in the private real estate agencies, investment banks, as analytics and in other companies having interest in spatial dimension of the economy. The graduates are prepared to begin their doctoral studies in planning.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree. Minimum 210 ECTS.

Important note for entry criteria:

Master's programme in planning is open to students with a non-planning background. This means that the programme is suitable, among others, for those who completed their first degree in: environmental studies, geography, transport studies, landscape architecture, architecture. Background in public administration, economy, sociology or mathematics, physics, IT and computer studies is also welcome. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see: www.rekrutacja.pwr.edu.pl
- English: Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee: Non-EU/EFTA students:
  2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee: Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see: www.rekrutacja.pwr.edu.pl

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTENT

SEMESTER 1

» Planning Theory
» Systems Theory
» Shaping and protecting the environment
» Transformations of contemporary cities
» From governing to governance
» Operational spatial planning
» Models in Spatial Management
» Legislative Technique in Planning 1
» Elements of Higher Mathematics
» Supporting the decision-making process 1
» Elective project studio 2x45
» Foreign language

SEMESTER 2

» Planning for city development
» Law in Spatial Planning
» Territorial Marketing
» Project management
» Spatial development management
» Spatial planning organisation
» Knowledge of Architecture
» Legislative Technique in Planning 2
» Supporting the decision-making process 2
» Elective project studio 2x45h
» Foreign language

SEMESTER 3

» Regional Policy
» Spatial Policy of the EU
» Master's Thesis
» Elective project studio 2x45h

SAMPLE ELECTIVE COURSES:

» Planning based on GIS spatial analysis;
» Operationalisation of regional analysis;
» Revitalisation of urban areas;
» Multi-level governance;
» Pro-climate planning;
» Transportation Analysis and Forecasting;
» Participatory budgeting;
» The microclimate of the estate;
» Operational planning of urban structures

DESCRIPTION

The students gain theoretical knowledge and practical skills connected with structure design, construction materials and technologies as well as static and dynamic analysis of reinforced concrete, prestressed concrete, metal, wooden, ground and complex constructions. They learn how to use advanced computational models and modern IT solutions in civil engineering. In addition to participating in lectures, presentations, labs, seminars and projects the students may also take part in the student scientific groups and international exchanges. A number of courses can be selected by the students depending on their interests and professional plans. At the end of the MSc study students write master's thesis on a subject related to designing of engineering structures. The MSc diploma offers an opportunity to continue education at Ph.D. studies.

JOB PROSPECTS

The graduates are prepared for:
» solving complex design, organisation or technological problems,
» authorisation to independent design and construction in civil engineering,
» developing and implementing research programmes,
» carrying out jobs in international enterprises,
» participation in marketing and promotion of construction products,
» continuing education, participation in research in the fields directly related to construction and construction production,
» continuous education, improving qualifications and extending knowledge,
» team work and large team management.

The graduates are prepared to work in design offices and construction enterprises, scientific institutions and R&D centres, institutions involved in building infrastructure management or dealing with counselling or dissemination of construction-related knowledge.

ENTRY INFORMATION

Requirements: Bachelor's or Master's Degree in Civil Engineering, Environmental Engineering, Architecture, Hydrotechnical Engineering obtained either in Poland or abroad.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT– 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:**
1st October 2021 or February 2022
» **Programme coordinator:**
Prof. Jan Bień, Ph.D., D.Sc.

CONTENT

The main study of Civil Engineering consists of obligatory and elective courses, covered as lectures, projects and seminars. In addition, some elective units are offered covering also language courses.

SEMESTER 1

» Advanced Computer Aided Engineering
» Concrete Structures - Objects
» Metal Structures - Objects
» Selected Topics in Structural Mechanics
» Theory of Elasticity and Plasticity
» Physics of Modern Materials
» Selected Topics in Mathematics
» Selected Topics in Geoengineering – Foundation
» Hydraulics in Civil Engineering
» Ethics in Engineering/Ethics in Business
» Foreign Language 1
» BIM in Civil Engineering

SEMESTER 2

» Dynamics
» Underground Structures – Urban Infrastructure
» Railways
» Roads, Streets and Airports
» Bridges
» Construction Techniques and Processes
» Apartment Building
» Computational Mechanics
» Foreign Language 2

SEMESTER 3

» Master's Thesis Seminar
» Master's Thesis
» Construction Project Management
- 2 elective courses (one from each group)

ELECTIVE COURSES 1

» Artificial Intelligence in Civil Engineering
» Modern Testing Methods for Non-destructive Inspection of Building Structures
» Advanced Building Physics
» Hydrology for Building Engineers
» Effective Properties of Composites – Introduction to Micro-mechanics

ELECTIVE COURSES 2

» Pre-stressed Concrete Structures
» Timber Structures
» Conservation and Strengthening of Monumental Heritage Structures
» Methods of Applied Statistics (Geostatistics)
» Sustainable Building

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

ADVANCED CHEMICAL ENGINEERING AND NANOTECHNOLOGY

DESCRIPTION

The programme of studies directly reflects the current needs of the labour market in the field of Chemical and Process Engineering, providing employment opportunities. It is designed to provide the graduates with the following learning outcomes: knowledge on developments and new developments in the field of chemical engineering, ability to use new advances in the field of chemical engineering, basic understanding of the processes of governance, knowledge of the functions, principles and management instruments, including quality management and identification of the main problems of management, knowledge of the design of process devices and systems, integration and process intensification, performing a complete process design, the use of computer technology, including tools for exploring and simulating the dynamics of various processes. Advanced Chemical Engineering and Nanotechnology combines classical chemical engineering with bioprocess engineering, nanoengineering, chemical technology and environmental engineering. The graduation document certifies the degree in engineering chemistry with the notification of a deepened specialisation in Advanced Chemical Engineering and Nanotechnology. Study for applicants without engineering degree lasts 2 years, otherwise 1.5 years only.

ABOUT STUDIES

» **Duration:** 3 or 4 semesters

» **Mode of study:** Full time

» **Language of instruction:** English

» **Start date:**
October 2021 (4 semesteres programme, for applicants without engineering degree)
February 2022 (3 semesters programme, for applicants possessing engineering degree)

» **Programme coordinator:**
Prof. Anna Trusek, Ph.D., D.Sc.,

JOB PROSPECTS

The graduate has extended knowledge of mathematics, natural sciences and technical skills: professional solving of problems in the field of chemical engineering, conduct advanced research experiments, propose and optimise new solutions and independently analyse problems related to chemical and process engineering. The graduates are prepared for creative work in the design and operation of processes in the chemical industry. The graduate is prepared to run their own business.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Chemistry or related domains.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT– 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

The main study of Advanced Chemical Engineering and Nanotechnology consists of at least 23 units, covered as lectures, labs and seminars. In addition, some optional units are offered covering also language courses.

SEMESTER 0

» Chemical Informatics
» Environmental Protection
» Introduction to Materials Science and Engineering
» Technical Safety
» Technical Drawing
» Recycling of Materials
» Biotechnology with Introduction to Industrial Microbiology
» Fundamentals of Chemical Technology
» Measurements in Chemical Equipment
» Introduction to Chemical Engineering
» Optional course

SEMESTER 1

» Trends in Chemical Engineering Development
» Nanoengineering - Fundamentals and Applications
» Chemical Processes Equipment and Methods
» Statistical Analysis of Experimental Data

SEMESTER 2

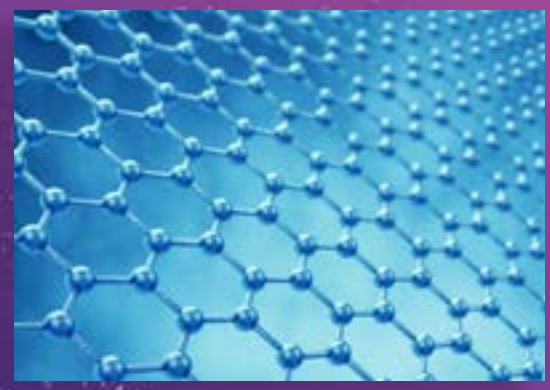
» Chemical Processes Project Designed and Management
» Heterogeneous Processes in Chemical, Food and Pharmaceutical Industry
» Graduate Laboratory I

SEMESTER 3

» Foreign Language I
» Foreign Language II
» Project Management
» Business Management
» Optional course
» Graduate Laboratory II
» Graduate Seminar and Master Thesis

OPTIONAL COURSES

» Statistical Thermodynamics in Molecular Modeling
» Materials Used in Chemical Unit Operation
» Microwaves and Other Advanced Thermal Technologies in Chemical Engineering
» New Concepts and Solutions in Chemical Engineering



Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

ADVANCED NANO-AND BIO-MATERIALS MONABIPHOT

DESCRIPTION

Advanced nano- and bio-materials MONABIPHOT is a Master's course which offers an original qualification in the highly innovative domain of nanomaterials and molecular photonics for materials science and biology. Skills will be acquired at the strongly interdisciplinary level needed to master emerging technologies and to develop original concepts and applications, aiming at novel technological breakthroughs in this domain. We offer courses concerning synthesis and characterisation of new materials on the molecular and nanoscale with the special impact on biology. The introduction of the course's subjects helps the students to acquire competences as future experts in material science, with a special impact on nanomaterials. The language of the Advanced Nano- and Bio-materials MONABIPHOT Master's is English. Applicants must have a Bachelor's degree in Chemistry, Physics or Materials Science or related subjects, with a good background in mathematics and chemistry. The graduates could continue the career in research in nano- and/or bio-materials, as Ph.D. students or R&D associates in industrial laboratories in the rapidly emerging nanotechnology industry.

The programme is aimed at students already awarded or expecting a BSc (or a higher degree) or equivalent before the starting date of the term (September 2021 for the current applications).

ABOUT STUDIES

» **Duration:** 3 or 4 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:**
October 2021 (4-semester programme, for applicants without engineering degree)
February 2022 (3-semester programme, for applicants possessing engineering degree)
» **Programme coordinator:**
Katarzyna Matczyszyn, prof. WUST,

JOB PROSPECTS

The graduate has extended knowledge of chemistry, materials science, natural sciences and technical skills: conducting advanced research experiments with nanomaterials with the emphasis on biology, proposing and optimising new solutions and independently analysing problems related to materials science. The graduates are prepared for creative work in the design and operation of new materials and ready to run their own businesses.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Chemistry or related domains. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

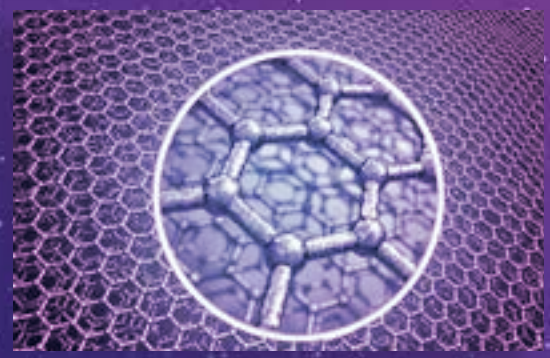
The main study of Advanced Nano- and Bio-materials MONABIPHOT consists of at least 23 units, covered as lectures, labs and seminars. In addition, some optional units are offered covering also language courses.

SEMESTER 0

» Chemical Informatics
» Environmental Protection
» Introduction to Materials Science and Engineering
» Technical Safety
» Technical Drawing
» Recycling of Materials
» Biotechnology with Introduction to Industrial Microbiology
» Fundamentals of Chemical Technology
» Measurements in Chemical Equipment
» Introduction to Chemical Engineering
» Optional course

SEMESTER 1

» Liquid Crystals for Photonics
» Modern Polymers
» Modern Spectroscopy
» Bioorganic Chemistry
» Fluorescence Spectroscopy and Bioimaging
» Biophotonics
» Mathematical Methods in Planning and Analysis of Experiment
» Managerial course
» Foreign Language I
» Foreign Language II



SEMESTER 2

» Laser and Microscopic Techniques in Materials Analysis
» Nanoscale Physics
» Advanced Functional Materials
» Nanomaterials
» Organic Electronics
» Advanced Diffraction Methods
» Optional course
» Graduate Laboratory I

SEMESTER 3

» Advanced Functional Materials
» Optional course
» Graduate Laboratory II
» Graduation Seminar and Thesis Preparation

OPTIONAL COURSES

» Biomaterials
» Non-linear Optics for Chemists

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Bioinformatics constitutes an interdisciplinary research area, covering applications of computer science, chemistry and biochemistry to solve biological problems, usually on the molecular level. Typical activities include analysis of information contained in literature, genetic and structural databases, prediction of protein structure, drug and biocatalyst or biosensor design. The curriculum introduces programming skills necessary for automation of database searches and analysis of numerical and bioinformatics data, including analysis of new genome sequencing (NGS) results. The study programme includes advanced computer programming as well as specialised molecular biology techniques which are highly valued on present job market.

ABOUT STUDIES

» **Duration:** 3 or 4 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:**
October 2021 (4-semester programme, for applicants without engineering degree)
February 2022 (3-semester programme, for applicants possessing engineering degree)
» **Programme coordinators:**
Prof. Tadeusz Andruniów, Ph.D., D.Sc.
Dr Paweł Kędzierski, Ph.D.
Dr Edyta Dyguda-Kazimierowicz, Ph.D.
Prof. W. Andrzej Sokalski

JOB PROSPECTS

The combination of computational skills and basic knowledge of biotechnology aims to prepare the graduates for work in research and development, manufacturing chemical software or databases, developing modern bioinformatics diagnostic services in medical laboratories, conducting quality control in environment protection, pharmaceutical or food industry laboratories. Our graduates typically continue level III (Ph.D.) education in renowned academic institutions or are employed by national and international companies.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Chemistry or related domains (3-semester programme).
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTENT

The curriculum is composed of at least 25 units, covered as lectures, labs or seminars.

SEMESTER 0

» Chemical Informatics
» Environmental Protection
» Introduction to Materials Science and Engineering
» Technical Safety
» Technical Drawing
» Recycling of Materials
» Biotechnology with Introduction to Industrial Microbiology
» Fundamentals of Chemical Technology
» Measurements in Chemical Equipment
» Introduction to Chemical Engineering
» Optional course

SEMESTER 1

» Bioinformatics
» Molecular Dynamics
» Networks and Workstations with UNIX System
» Applied Informatics
» Bioprocess Project
» Theoretical Chemistry
» Foreign Language I
» Foreign Language II

SEMESTER 2

» Molecular Modelling
» Bionanotechnology
» Rational Drug Design
» Advanced Programming and Numerical Methods
» Methodology of Experimental Research
» Instrumental Drug Analysis
» Retrieval of Scientific and Technical Information
» Managerial course
» Graduate Laboratory I

SEMESTER 3

» Computational Genomics
» Molecular Engineering in Genomic Analyses
» Mathematical Methods in Design and Analysis of Experiment
» Managerial course
» Economics and Organisation of Industrial Biotechnology
» Graduate Laboratory II
» Graduation Seminar and Thesis Preparation

DESCRIPTION

Medicinal chemistry is a scientific discipline at the intersection of chemistry and computational science, connected with designing, synthesizings and developing new pharmaceuticals. At the beginning, medicinal chemistry was involved in screening of natural sources like plants or animals for bioactive compounds. Now, natural products serve as the lead structures in the synthesis and development of new chemical entities dedicated for therapeutic use. Medicinal chemistry includes preparation and analysis of existing and new potential drugs, evaluation of their biological properties, analysis of structure-activity relationships. It is a highly interdisciplinary field widely using advanced, synthetic, spectroscopic and computational methods. Thus, medicinal chemists cooperate with theoretical chemists, synthetic chemists, medical doctors, microbiologists and pharmacologists. The graduation document certifies the degree in chemistry with the notification of a deepened specialisation in Medicinal Chemistry. The study for applicants without engineering degree lasts 2 years, otherwise 1.5 years only.

ABOUT STUDIES

» **Duration:** 3 or 4 semesters

» **Mode of study:** Full time

» **Language of instruction:** English

» **Start date:**
October 2021 (4-semester programme, for applicants without engineering degree)
February 2022 (3-semester programme, for applicants possessing engineering degree)

» **Programme coordinator:**
Prof. Artur Mucha, Ph.D., D.Sc.

JOB PROSPECTS

The students are educated in the field of chemistry, mainly synthesis, structure analysis including spectroscopic methods, molecular modelling and they have training in medicinal chemistry. Some students, depending on their Master's thesis topic, may accomplish part of their research and/or graduate laboratory at Medical University, under supervision of medical doctors or in the Institute of Immunology and Experimental Therapy in Wrocław. Master's Degree programmes provide many skills and abilities demanded in scientific laboratories as well as in modern chemical and pharmaceutical industry.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Chemistry or related domains. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

The main study of Medicinal Chemistry consists of at least 22 units, covered as lectures, labs and seminars. In addition, some optional units are offered covering also language courses.

SEMESTER 0

» Chemical Informatics
» Environmental Protection
» Introduction to Materials Science and Engineering
» Technical Safety
» Technical Drawing
» Recycling of Materials
» Biotechnology with Introduction to Industrial Microbiology
» Fundamentals of Chemical Technology
» Measurements in Chemical Equipment
» Introduction to Chemical Engineering
» Optional course

SEMESTER 1

» Theoretical Chemistry
» Spectroscopy
» Structure and Crystallography of Solids
» Analytical Methods in Drug Design and Technology
» Physical Organic Chemistry
» Introductory Statistics

OPTIONAL COURSE

» Foreign Language I
» Foreign Language II

SEMESTER 2

» Instrumental Drug Analysis
» Molecular Modelling
» Retrieval of Scientific and Technical Information
» Medicinal Natural Products
» Synthetic Organic Drugs
» Managerial course
» Rational Drug Design
» Graduate Laboratory I

SEMESTER 3

» Multistep Organic Synthesis
» Inorganic Drugs
» Polymers in Medicine
» Production Control and Quality Management
» Managerial course
» Mathematical Methods in Design and Analysis of Experiment
» Graduate Laboratory II
» Graduation Seminar and Thesis Preparation

ELECTIVE COURSES

» Combinatorial Chemistry
» Selected Reactions in Organic Chemistry

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Fine chemicals (FCs) are formulations containing one or more complex chemical substances as active ingredients – serving both an immense range of a purity specification, and ability to deliver a particular effect. FCs are thus identified according to their custom-designed properties and performance formulations. FCs manufacturers produce a wide range of chemical substances, which are typically of a high added-value and produced in relatively low amounts, mainly by batch processes in multipurpose plants. Specifically, there are the following FCs product categories:

» pharmaceutical products (chemical and biological processes),
» plant health products and biocides,
» specialty polymers,
» specialised surfactants and dispersed systems,
» dyes and pigments,
» polymer additives,
» neutraceuticals, cosmeceuticals and food additives,
» nanomaterials,
» catalysts for green chemistry and their applications in technological processes,
» organic intermediates and custom-designed products.

Study for applicants without engineering degree lasts 2 years, otherwise 1.5 years only.

ABOUT STUDIES

» **Duration:** 3 or 4 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:**
October 2021 (4-semester programme, for applicants without engineering degree)
February 2022 (3-semester programme, for applicants possessing engineering degree)
» **Programme coordinator:**
Prof. Kazimiera A. Wilk, Ph.D.;

JOB PROSPECTS

Independent positions, e.g., R&D employee in chemical industry, specialist in chemical development, quality control specialist in industries such as chemical and pharmaceutical, biotechnology and cosmetic processing, processing and manufacturing of specialised polymers, processing of food products, agrochemicals, specialist in research institutions and public administration associated with a low-volume production. Independent activity in Small and Medium Business in the field of fine chemicals.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Chemistry or related domains. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

The main study of Technology of Fine Chemicals consists of at least 23 units, covered as lectures, labs and seminars. In addition, some optional units are offered covering also language courses.

SEMESTER 0

» Chemical Informatics
» Environmental Protection
» Introduction to Materials Science and Engineering
» Technical Safety
» Technical Drawing
» Recycling of Materials
» Biotechnology with Introduction to Industrial Microbiology
» Fundamentals of Chemical Technology
» Measurements in Chemical Equipment
» Introduction to Chemical Engineering
» Optional course

SEMESTER 1

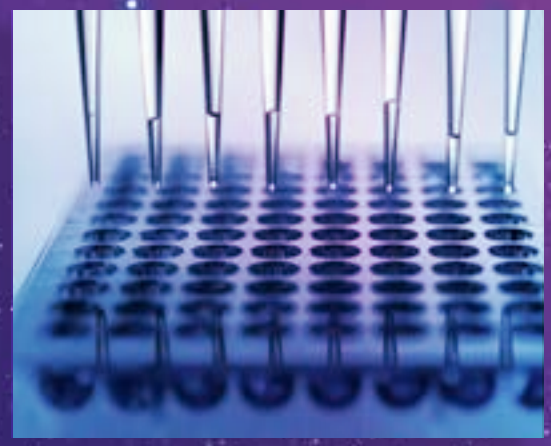
» Environmental Protection in Chemical Technology
» Process Modelling in Chemical Technology
» Chemical Reaction Engineering
» Fundamentals of Biotechnology
» Specialty Surfactants and Dispersed Systems
» Surface Phenomena and Applied Catalysis
» Experimental Design and Data Analysis
» Foreign Language I
» Foreign Language II

SEMESTER 2

» Polymer Additives
» Design and Feasibility Study of Technological Process
» Data Mining in Chemical Technology
» Pharmaceuticals and Biopharmaceuticals
» Sustainable Energy and Fuels
» Analytical Methods in Fine Chemicals
» Specialty Polymers – Physicochemistry and Technology
» Graduate Laboratory I

SEMESTER 3

» Sensors and Biosensors in Fine Chemicals Manufacturing
» Production Control and Quality Management
» Agrochemicals and Plant Health Products
» Process Project
» Graduate Laboratory II
» Graduate Seminar and Thesis Preparation



Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTROL IN ELECTRICAL POWER ENGINEERING

DESCRIPTION

The students can spend full duration of the studies at Wrocław University of Science and Technology (WUST) or benefit from the Double-Degree option. The joint double degree programme is run together with Ryerson University (RU) in Toronto, Canada (possibility of exchange for Polish and Canadian citizens only) and Brandenburg University of Technology (BTU) in Cottbus, Germany, University of Palermo (UNIPA), Italy, RWTH Aachen University, Aachen (Germany). The goal of the programme is to improve the quality of graduate-level education and training in the field of control engineering. It is focused on new and challenging issues of power system automation and control. The programme offered by the Faculty of Electrical Engineering is split up into four semesters, including a Master's Thesis semester and a 4-week industrial placement. The best students willing to study in Toronto should spend their first year at RU and second year at WUST. Alternatively, the students can study their first year at BTU in Cottbus or at UNIPA in Palermo and then continue their second year at WUST.

ABOUT STUDIES

- **Duration:** 4 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:**
  - 1st October 2021 at WUST or BTU (Double Degree Programme),
  - 1st September 2021 at RU (Double Degree Programme)
  - 1st September 2021 at UNIPA (Double Degree Programme)
- **Programme coordinator:**
  Robert Lis Ph.D., D.Sc. Assc. Prof.

JOB PROSPECTS

The programme is devoted to the candidates interested in work related to electric power system control, reliability, transmission and distribution of electrical energy, protection and decision-making in power systems, energy market issues, etc.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Electrical Engineering or related field.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  - 15th March 2021- for students who want to take part in Double Degree Programme at WUST/RU
  - 1st June 2021- for students who want to take part in Double Degree Programme at WUST/BTU, WUST/UNIPA, WUST/RWTH
  - 1st term: 1st July and 2nd term - 13th September 2021 – for students who want to take full four semesters at WUST
- English: Equivalent of minimum TOEFL IBT – 87 points or 6,5 (7,0 at RU) points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

COURSES AT WUST:

SEMESTER 1

- Numerical and Optimisation Methods
- Power Quality Assessment
- Power Systems Faults
- Fault Calculations
- Dynamics and Control of AC and DC Drives
- Circuits and Systems
- Advanced Technology in Electrical Power Generation
- Foreign Language – A1 or A2
- Foreign Language – B2+ or C1+

SEMESTER 2

- Digital Control Techniques
- Simulation and Analysis of Power System Transients
- Digital Signal Processing for Protection and Control
- Power System Protection
- Fibre Optics Communications and Sensors
- Renewable Energy Sources
- Electric Power System Operation and Control
- Diploma Placement 4 Weeks
- Elective Course from Management Block

SEMESTER 3

- Advanced High Voltage Technology
- Artificial Intelligence Techniques
- Power System Automation and Security
- Electrical Power Systems Management
- Electromagnetic Compatibility
- Measurement Methods and Techniques
- Diploma Project
- Elective Courses from Law Block

SEMESTER 4

- Diploma Seminar
- Master's Thesis
- Elective course from Social Sciences and Ethics Block
- Elective Course from A Block and B Block

COURSES AT UNIPA:
https://wroclaw.tech/UNIPA-courses

COURSES AT RWTH:
https://wroclaw.tech/RWTH-courses

COURSES AT RU:
https://wroclaw.tech/RU-courses

COURSES AT BTU:
https://wroclaw.tech/BT-courses

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The students of the programme can spend full duration of the studies at Wrocław University of Science and Technology (WUST) or benefit from the Double-Degree option. The DD option is a proposal for a limited number of the best applicants. After having spent one year in Wrocław, the students are sent for the remaining year to the Otto-von-Guericke Universität Magdeburg (OvGU), Germany. They can choose the double degree option with Irkutsk National Research Technical University (INRTU) in Russia or with University of Palermo (UNIPA), Italy. After having spent one year at the partner university, the students spend the remaining year at the home University (Poland). Following the successful completion of the dual-degree requirements at both universities the students will obtain two Master's of Science (M.Sc.) degrees, one from the WUST and one from the University of Magdeburg (OvGU) or one from the WUST and one from the Irkutsk National Research Technical University (INRTU) or one from the WUST and one from Palermo University (UNIPA). The programme is focused on the modern issues related to renewable energy sources and their integration in power system.

ABOUT STUDIES

- **Duration:** 4 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:**
  - 1st October 2021 at WUST or OvGU
    1.09.2021 at INRTU
    (Double Degree Programmes)
  - 1st September 2021 at UNIPA
    (Double Degree Programme)
- **Programme coordinator:**
  Robert Lis Ph.D., D.Sc. Assc. Prof.

JOB PROSPECTS

The programme is devoted to the candidates interested in work related to renewable energy systems, reliability, transmission and distribution of electrical energy, protection and decision-making in power systems, energy market issues, etc.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Electrical Engineering or related field.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  - 14th June 2021 - for students who want to take part in Double Degree Programme at WUST/INRTU
  - 1st July 2021 - for students who want to take part in Double Degree Programme at WUST/OvGU and WUST/UNIPA
  - 1st term: 1st July and 2nd term - 13th September 2021 – for students who want to take full four semesters at WUST
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students:
  2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

courses at WUST:

SEMESTER 1

- Numerical and Optimisation Methods
- Power Quality Assessment
- Power Systems Faults
- Fault Calculations
- Dynamics and Control of AC and DC Drives
- Circuits and Systems
- Advanced Technology in Electrical Power Generation
- Foreign Language – A1 or A2
- Foreign Language – B2+ or C1+

SEMESTER 2

- Power Electronics
- Simulation and Analysis of Power System Transients
- Protection and Control of Distributed Energy Sources 1
- Renewable Energy Sources
- Water Power Plants 1
- Integration of Distributed Resources in Power Systems
- Electromechanical Systems in Renewable Energy
- Modelling of Electrical Machines
- Diploma Placement 4 Weeks
- Elective Course from Management Block
- Energy Storage Systems

SEMESTER 3

- Photovoltaic Cells
- Protection and Control of Distributed Energy Sources 2
- Water Power Plants 2
- Industrial Ecology - Selected Problems
- Artificial Intelligence Techniques
- Legal Regulations and Investments in Power Systems with Distributed Energy Sources
- Electromagnetic Compatibility
- Measurement Methods and Techniques
- Diploma Project
- Elective Courses from Law Block

SEMESTER 4

- Diploma Seminar
- Master's Thesis
- Elective Course from Social Sciences and Ethics Block
- Elective Course from A Block and B Block

courses at OvGU:

SEMESTER 3

- Power Electronics
- Power Network Planning and Operation
- Digital Info Processing
- Electromagnetic Field Theory
- Power System Economics and Special Topics
- Project

SEMESTER 4

- Master's Thesis

courses at INRTU:
Selected course from the list of Electrical Engineering at INRTU. See link below:
https://wroclaw.tech/INTRU-selected_course

courses at UNIPA:
https://wroclaw.tech/UNIPA-courses

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Graduate's profile: A graduate will possess abilities to use in-depth knowledge of problems within the domain of basic sciences, main-field-of-study and specialisation subjects. The graduate will be able to manage and supervise teams, deal with high-risk situations and decisions, and use competently the knowledge of law and economics. The graduate will be prepared to design technological processes, carry out research work and work creatively.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Gabriela Paszkowska, Ph.D.
  gabriela.paszkowska@pwr.edu.pl

JOB PROSPECTS

The Mining Engineering graduate will be prepared to work for enterprises, engineering supervision bodies, state administration, design offices and research units, where in-depth specialised knowledge of mining, geology and geoengineering is demanded.

ENTRY INFORMATION

Requirements: Bachelor's Degree – Bachelor of Science or Bachelor of Engineering (any incl. Geology Engineering, Mining Engineering, Mechanical Engineering, Energy-related Engineering studies etc.).
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS.
  List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students:
  2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

Knowledge will be provided in the form of lectures, tutorials, laboratories, computer labs, project works and seminars.

SEMESTER 1

- Theory and Practice in Geomechanics
- Computer-Aided Geological Modelling & Geostatistics
- Project Management, Appraisal and Risk Evaluation
- Engineering Geophysics
- Integrated Analysis of Deformations in Geomechanical Engineering
- Occupational Health and Safety
- Excavation Design in Open Pit Mining

SEMESTER 2

- Machinery Systems
- Tunnel and Underground Excavation Design
- Computer-Aided Mine Design
- Ventilation and Mine Fires
- Issues in Nuclear Physics
- AutoCAD
- Foreign Languages
- Free Elective

SEMESTER 3

- Mineral Processing Systems
- Environmental Management
- Digital Mine
- Operations Research
- Free Elective
- Diploma Seminar, Master's Thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

DESCRIPTION

This is a joint MSc programme of WUST and University of Miskolc (Hungary) formatted as a structured student mobility. WUST students study two semesters in Wrocław (the first and the third semesters) while the second semester is offered by University of Miskolc. Students apply for an Erasmus Plus grant for the mobility period. In the third semester, the students write and defend their Master's thesis at WUST.

Graduate profile: An alumnus becomes a specialist in two fields: geotechnical and environmental engineering, which is a very unique profile. Besides that, a graduate will be able to apply in-depth knowledge of basic sciences. The graduate will be able to manage and supervise teams, deal with high-risk situations and decisions. The graduate will be prepared to design technological processes, carry out research work, and work creatively.

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Gabriela Paszkowska, Ph.D.
gabriela.paszkowska@pwr.edu.pl

JOB PROSPECTS

The Mining Engineering graduate will be prepared to work for enterprises, engineering supervision bodies, state administration, design offices and research units, where in-depth specialised knowledge of mining, geology and geoengineering is demanded.

ENTRY INFORMATION

Requirements: Bachelor's Degree – Bachelor of Science or Bachelor of Engineering (any incl. Geology Engineering, Mining Engineering, Mechanical Engineering, Energy Related Engineering Studies, etc.).
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

Knowledge will be provided in the form of lectures, tutorials, laboratories, computer labs, project works and seminars.

SEMESTER 1

» Theory and Practice in Geomechanics
» Computer-Aided Geological Modelling & Geostatistics
» Project Management, Appraisal and Risk Evaluation
» Engineering Geophysics
» Integrated Analysis of Deformations in Geomechanical Engineering
» Occupational Health and Safety
» Environmental Chemistry

SEMESTER 2

» Methods of Environmental Assessment
» Waste Incineration and Air Quality Protection
» Water and Wastewater Treatment
» Environmental Geotechnics
» Chemical Technologies in Environmental Protection
» Environmental Risk Assessment and Remediation
» Soil Chemistry
» Numerical Methods and Optimisation
» Quality Management
» Basics of Waste Management
» Environmental Geology
» Foreign Languages

SEMESTER 3

» Mineral Processing Systems
» Excavation Design in Open Pit Mining
» Digital Mine
» Free Elective
» Foreign Language
» Diploma Seminar, Master's Thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

GEOMATICS FOR MINERAL RESOURCE MANAGEMENT

DESCRIPTION

Geomatics for Mineral Resource Management focuses on the process of resource modelling and mine management. Students will be taught in a variety of subjects related to the field mining and mineral resources. This includes financial, environmental, political as well as the legal aspects of national and international mining projects. In addition to the standard courses taught by staff from partner universities and industry experts, massive open online courses (MOOC's) are offered for the students. The MOOC's consist of a series of web-videos, which cover the content of an individual course.

The educational content focuses on the following pillars: (1) Sensing technologies for mine data gathering, (2) Spatial (big) data management and visualisation and (3) Spatial (big) data analysis and modelling. The aim of the programme is to enable students to integrate these three pillars into innovative Geomonitoring concepts.

Students, who decide on the specialisation Geomatics for Mineral Resource Management, are, on default, set to study 2 semesters at Wrocław University of Science and Technology (1st and 4th semesters) and 2 semesters at TU Bergakademie Freiberg in Germany or two semesters at Montanuniversität Leoben in Austria (2nd and 3rd semesters) and are going to graduate with a double MSc diploma.

ABOUT STUDIES

» **Duration:** 4 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Jan Blachowski Ph.D., D.Sc., Prof. (at WUST)
Jörg Benndorf Ph.D., D.Sc., Prof. (at TUBAF)
Alexander Tscharf Ph.D. (at MUL)

JOB PROSPECTS

Thus graduate of this master program will be prepared to work in an international and multicultural environment in mining and exploration companies, technical supervision authorities, public administration offices, research and development institutions, everywhere where advanced and state of the art Interdisciplinary knowledge of mining and geology, computer aided design, geomatics are required.

ENTRY INFORMATION

Requirements: the programme is meant for holders of a Bachelor's Degree in Mining and Geology as well as a Bachelor's Degree in Geodesy and Cartography or related engineering disciplines.

Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

Knowledge will be provided in the form of lectures, tutorials, laboratories, computer labs, project works and seminars.

SEMESTER 1 (WUST)

» Principles and Application of InSAR and GIS in Mining
» Computer Aided Geological Modelling & Geostatistics
» Project Management, Appraisal and Risk Evaluation
» Engineering Geophysics
» Integrated Analysis of Deformations in Geomechanical Engineering
» Occupational Health and Safety
» Foreign language
» Elective course

SEMESTER 2 (TUBAF)

» Applied Remote Sensing in Geosciences
» Underground Mine Surveying
» Geomonitoring
» Operations Management
» Geomodelling – Geostatistics for Natural Resource Modelling
» Foreign language

SEMESTER 3 (TUBAF)

» Special Topics Geokinematics
» Applied Spatial Data Analysis and Modelling - Case Study
» Geomatics for Mineral Resource and Reserve Management
» Reclamation
» Human Resources Management & Organizational Behaviour
» Elective courses

SEMESTER 4 (WUST)

» Master's Thesis
» Diploma Seminar

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Geomatics is an interdisciplinary scientific and technical discipline that combines aspects of surveying and sensor technology with data processing, geoinformatics and geomodelling. It deals with the acquisition, analysis, interpretation, dissemination and practical application of geoinformation. Geomatics analyses and synthesises information about spatial processes and phenomena and their changes. Geodata is used to create precise computer models that help us to better understand spatial processes and shape future activities. Geodata is an element of almost every intelligent IT system. Stimulating the demand for geoinformation may affect the innovativeness of the economy and allow the entrepreneurs and science to play a significant, more noticeable role of on the global market.

The universality of geoinformation and the prospect of a further increase in its use (processing and analysing large collections of geodata) generate a demand for specialists in the field of development and management of geoinformatics knowledge. Education in the field of Geodesy and Cartography with a specialisation in Geomatics at the Faculty of Geoengineering, Mining and Geology of Wrocław University of Science and Technology meets this demand.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Jan Blachowski Ph.D., D.Sc., Prof.

JOB PROSPECTS

The Geomatics graduate will be prepared to work for enterprises, engineering supervision bodies, state administration, design offices and research units, where in-depth specialised knowledge of modern geodetic and remote sensing techniques of spatial data acquiring, as well as further advanced analyses in Geographic Information Systems and visualisations are required.

ENTRY INFORMATION

Requirements: the programme is meant for holders of a first-degree diploma in engineering studies, especially in the field of geodesy and cartography.

Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

- Physics - the structure of matter
- Advanced Numerical Calculation Methods
- Advanced Geospatial Analysis
- Geostatistics
- Special Measurements
- Selected Topics in GNSS
- GIS Programming
- Foreign Language I

SEMESTER 2

- Selected Topics in Geospatial Modelling
- Financial Analysis
- Physical Geodesy
- Digital Cartographic Models
- GIS Programming II
- Remote Sensing and Processing of Digital Images
- Hydrology II
- Selected Topics in Displacement Monitoring
- Foreign Language
- Elective course
- Humanistic-managerial course
- Graduate Seminar

SEMESTER 3

- Geoinformation Project Management
- Selected Topics in Information Technologies
- Distributed Spatial Databases
- Management of Company Development
- Graduate Seminar
- Elective course
- Master thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

ENVIRONMENTAL QUALITY MANAGEMENT

DESCRIPTION

The graduate will obtain the knowledge in environmental engineering and experience in the technology of environmental protection. They will be prepared for solving problems in sustainable development and technology and gaining information from the literature and other sources.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** October 2021 and February 2022
- **Programme coordinator:**
  Prof. Wojciech Adamski, Ph.D., D.Sc.

JOB PROSPECTS

The graduate will be able to play the role of team leader and to organise and run research debates. They will be prepared for a professional career in research units, industry, at universities and colleges. With gained international and professional experience, the graduate will be prepared to work in prestigious laboratories.

ENTRY INFORMATION

Bachelor's Degree in either of the following: Environmental Protection, Environmental Engineering, Chemistry, Earth Sciences.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTENT

Forms of teaching: lectures, laboratories, seminars, classes, computer classes, projects.

SEMESTER 1

- Environmental Chemistry
- Engineering Application of Mathematical Statistics
- AutoCAD
- Water Treatment Technology
- Raw Materials Management
- Sanitary Biology
- Water Quality Management
- Water Supply Systems
- Automation in Environmental Engineering
- Polish Language A1 or English Language C1+
- Elective Subject
- Ethics of New and Emerging Technologies
- Strategic Management

SEMESTER 2

- Environmental Management
- Membrane Separation Processes in Environmental Protection
- Environmental Toxicology
- Waste Gases Purification
- Solid Waste Management
- Waste Water Treatment Technology
- Biodegradable Materials
- Sewage Systems
- Environmental Health Hazards
- Polish Language or Another Language
- Spatial Planning
- Reliability of Engineering Systems

SEMESTER 3

- Organisation of Construction Works
- Building Regulation
- Renewable Energy Systems
- Elective Subject
- Diploma Seminar
- Diploma Project

DESCRIPTION

Businesses today collect an incredible amount of data, from market transactions, customer service interactions, social media reviews, search engine entries, to demographics, and many more. Businesses also experience a rapid and continuous development of technologies and organisational behaviour that require high skills in ICT and data analytics. The Master of Business Intelligence (BI) programme is designed to provide students with cutting edge managerial knowledge and a strong foundation in both analytics – including computational statistics and machine learning – and core business areas, building a solid platform for a successful career. The BI curriculum focuses on how to analyse data in order to identify and predict patterns and on how to visualise and present results to support managerial decisions and lead to innovative thinking in today's organisations.

The Master of Business Intelligence programme is tailored for current Bachelor of Engineering students and recent graduates who plan to pursue a career in business analytics and management information systems, as well as computer programmers, mathematicians, physicists and engineers seeking career advancement or change. We not only welcome students from different backgrounds and cultures, but also see them as critical for developing innovative ideas. Set up and run by a team of top-ranking scientists, award-winning early stage researchers and successful professionals, the BI curriculum answers the market demand for tech-savvy graduates who can apply advanced computational tools to solve business challenges.

ABOUT STUDIES

- **Duration:** 3 semesters (Spring, Autumn, Spring)
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  A/Prof. Anna Kowalska-Pyzalska
  Contact person:
  Yash Chawla, Ph.D.

JOB PROSPECTS

The demand for business analytics is high. Graduates who complete the Business Intelligence programme will acquire computational skills and management expertise that the business world is actively seeking. Our programme prepares students for data-driven decision support that is crucial for today's business activities across a broad range of industries, including ICT, financial, energy and healthcare. The BI curriculum provides the skills to fill positions not only as business intelligence analysts, but also data analysts and consultants, revenue optimisation analysts, risk managers, market analysts and many more. Given that the students will have the opportunity to conduct research with affiliated faculty and senior staff, the programme also prepares for academic careers, offering a unique set of competences and invaluable experience related to decision support for energy markets and renewable generation, e-business logistics and trade, and healthcare systems.

ENTRY INFORMATION

Requirements: Bachelor of Engineering Degree. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English: Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee: Non-EU/EFTA students:
  2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

Forms of teaching: lectures, laboratories, tutorials, projects, seminars, research.

ACQUIRED SKILLS AND COMPETENCES

Students will learn how to:

- Use data analytics to stimulate business growth with quantitative and qualitative skills.
- Analyse and manage big data.
- Stay on top of the latest methods and approaches in computational statistics and machine learning.
- Use cutting-edge techniques to immerse in case studies and apply new approaches to own data challenges.
- Use visualisation software to identify trends, explore hypotheses, challenge assumptions, and create a more detailed, data-driven understanding of business activities.
- Conduct top-tier research and report the results to managers, peers and the public.
- Simulate realistic future paths of all kinds of business processes.
- Predict outcomes to enable making informed business decisions and developing winning strategies.
- Reach the right customers with the right products and communications.
- Leverage the power of data to make informed business decisions and thrive in a rapidly changing environment.

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

People are the most important resource of every organisation. Machines and technology can be purchased or copied, but without knowledgeable and skilled people they would be of little value. Contemporary competition is competition between teams of people, and HRM is a modern technology of such teams. This soft technology allows us to multiply the intellectual capital of individuals into organisation's HRM-capital.

The HRM specialisation allows you to acquire knowledge and develop practical skills in the field of modern methods and techniques of strategic and operational human resource management in various types of organisations, as well as in smaller teams created within the organisation. It also allows the development of knowledge and skills in the field of leadership and team-building. Everything is embedded in the contemporary theory of management, economy and finance. Students also have the opportunity to acquire the ability to use IT tools supporting management processes in the field of human resource management.

Attention will be focused on understanding the business and skilful use of adequate techniques and management tools. Students will also learn the skills to research economic and financial phenomena and processes in a dynamically changing environment. As part of the HRM specialisation, students have the opportunity to acquire practical skills in the use of IT tools and appropriate analysis of the data available for them in order to support processes in the field of human resource management.

JOB PROSPECTS

By completing the 2nd degree of HRM specialisation, the graduate will be prepared in terms of the knowledge and competences to work as a leader of various types of teams, in various organisations (from international corporations to startups), as well as a human resource specialist. The main goal of this educational path is to prepare engineers of various specialties (IT, mechanics, electronics and telecommunications, chemistry, construction and other technical fields) to work and lead teams in companies of these specialties. Graduates of this specialisation will have the knowledge and experience acquired during workshops and practical classes on the functioning of groups and their dynamics. In addition, they will be able to use human resource management tools to achieve optimal results of their teams: in terms of both business and project goals, high efficiency and group effectiveness, but also the optimal level of group members' wellbeing.

ENTRY INFORMATION

Requirements: Bachelor's Degree or Bachelor of Engineering Degree. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English: Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

- **Duration:** 4 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** 1st October 2021
- **Programme coordinator:**
  A/Prof. Agnieszka Bieńkowska
- **Contact person:**
  Kamila Ludwikowska, Ph.D.

CONTENT

Forms of teaching: lectures, laboratories, tutorials, projects, seminars, research.

1ST GROUP OF COURSES:

modern concepts of human resource management in the field of selection, assessment and remuneration of personnel using the competency approach; management of the development and potential of employees, as well as their motivation and engagement; modern trends in the human resource area (strategic and international HRM, evidence-based approach, diversity management, and employer branding).

2ND GROUP OF COURSES:

a set of socio-managerial competences that are essential in working with and managing people, including: communication, public speaking and work on one's own image, working in a group and understanding group dynamics, social intelligence and the ability to predict and evaluate the behaviour of other people, leadership competences, including motivating, coordinating the work of a group and strategic thinking.

3RD GROUP OF COURSES:

general study courses that systematise and develop knowledge in the field of modern management methods and concepts, as well as economy and finance.

IMPORTANT!

While studying the HRM specialisation, students have the opportunity to work both individually and in a team. The practical forms of classes (i.e. projects, laboratories or workshops) cover over 50% of ECTS credits. Methods such as case study and problem-based learning are used.

Students have the opportunity to build specific tools supporting HR processes. Individual or group research projects are carried out to solve specific problems in the field of HRM.

The development of managerial and personal competences is based on the "learning by doing" approach, in practice it assumes the workshop nature of classes. Students develop specific skills, working in small groups on problems and projects, take part in simulations of situations and group processes.

Lectures are conducted in innovative interactive mode, some are conducted remotely.

At the end of the studies, students are obliged to prepare an MSc dissertation and pass a final (diploma) exam.

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

A graduate has the knowledge and skills in designing, testing and operation of power plants using nonconventional energy sources in a wide spectrum of degree of conversion and energy storage methods.

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Dorota Nowak-Woźny, Ph.D., D.Sc., Ass. Prof.

JOB PROSPECTS

The graduate will be prepared to work in energy industry. In particular, our graduate will have a good base to:

» work on designing of equipment using renewable energy
» work on creating new solutions in renewable energy power
» supervise the work of renewable and hybrid energy systems
» assess the effectiveness of the use of renewable energy sources, depending on the location of the investments
» determine and assess the local and global energy strategy

ENTRY INFORMATION

Requirements: Bachelor's Degree in a related field.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

» Applied Mathematics
» Physics - Selected Issues
» Numerical Methods
» Selected Problems of Thermal-Flow Processes
» Physics of Renewable Energy
» Fuel Cells and Hydrogen Production
» Geothermal Power Engineering
» Biomass in Energy Production
» Wind Power Plants
» Foreign Language B2+

SEMESTER 2

» Mathematical Modelling of Energy Generation Installation
» New Generation Energy Technologies
» Heat Pumps
» Solar Energy Conversion Systems
» Water Power Engineering
» Biofuels and Alternative Fuels
» Management Course (elective)
» Foreign Language (next language, any level)

SEMESTER 3

» Energy Systems
» Thermonuclear Power Generation
» Humanities Course (elective)
» Master's Seminar
» Master's Thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

REFRIGERATION AND CRYOGENICS

DESCRIPTION

A graduate has the detailed knowledge of devices and installations dedicated for cooling down to -150°C and, in the case of cryogenics, for temperature lowering below 120 K and down to fractions of Kelvin. They have the skills in the design, implementation and operation of both refrigerating and cryocooling systems. Additionally, a graduate can creatively apply modern design methods and is well prepared for undertaking Ph.D. studies.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Stefan Reszewski, Ph.D.

JOB PROSPECTS

The graduates of the Refrigeration and Cryogenic programme will be prepared to work in all industrial branches that apply refrigeration and cryogenic technologies. In particular, our graduates will have a good base to:

- design modern refrigeration and cryogenic units and installations,
- create new solutions and methods of temperature lowering,
- supervise the work in food cold stores, refrigeration and air conditioning installations, air rectification and technical gas production plants, natural gas liquefaction plants and other refrigeration and cryogenic systems.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Power or Mechanical Engineering or any related field. Each application is assessed individually on its merits. If In doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

- Applied Mathematics
- Mechanics Analytical
- Mechatronics and Control System
- Modern Engineering Materials
- Vapour-compression Refrigeration Systems
- Thermodynamic Fundamentals of Refrigeration, Cryogenics and Low Temperature Physics
- Refrigerants, Coolants and Cold Chain
- Cryogenics
- Foreign Language B2+

SEMESTER 2

- Finite Element Analysis
- Gas and Cryogenic Technologies
- Air Conditioning Systems
- Cryogenic Systems and Applied Superconductivity
- Numerical Techniques Related to Heat Transfer
- Cooling Systems
- Sorption Refrigeration
- Cryogenic Materials and Fluids
- Management Course (elective)
- Foreign Language (next language, any level)

SEMESTER 3

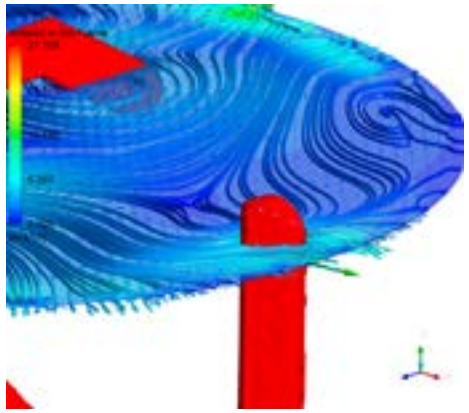
- Integrated Production Systems
- Failure Analysis of Machines and Devices
- Humanities Course (elective)
- Master's Seminar
- Master's Thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

COMPUTER AIDED MECHANICAL AND POWER ENGINEERING

DESCRIPTION

A graduate has the knowledge and skills the numerical methods for a wide range of energy/power applications. The knowledge will be very useful for performing the complex thermal – flow simulations using commercial and uncommercial software, utilize artificial intelligence as well as the conventional approach to the energy/power solving problem.



JOB PROSPECTS

After graduation, the student will be prepared to solve problems in practically every field related to thermal and flow processes.

After completing the specialisation, you will be able to:

» program in a high-level structured language,
» perform mechanical and thermal – flow simulations using i.e. ANSYS software,
» carry out numerical analyses using uncommercial tools such as OpenFOAM software,
» use artificial intelligence to control the operation of energy devices,
» analyse investments not only in technical terms, but also in economic terms.

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Sławomir Pietrowicz, Ph.D., D.Sc., Ass. Prof.

ENTRY INFORMATION

Requirements: Bachelor's Degree in a related field. Each application is assessed individually on its merits.
If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

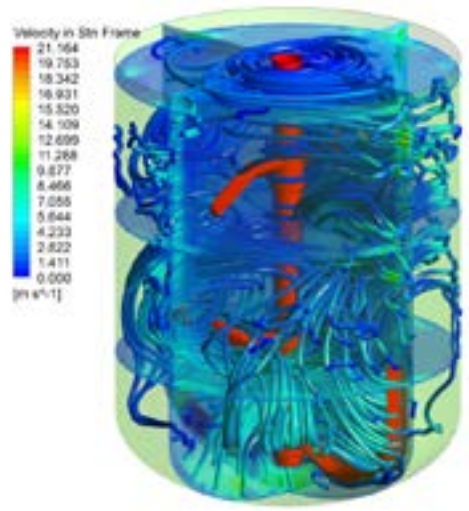
CONTENT

SEMESTER 1

» Applied Mathematics
» Physics - Selected Issues
» Numerical Methods
» Selected Problems of Thermal-Flow Processes
» Fundamentals of Programming
» Modelling of HVAC Systems
» Modelling of Combustion Processes
» Mechatronics and Control Systems
» Foreign Language B2+

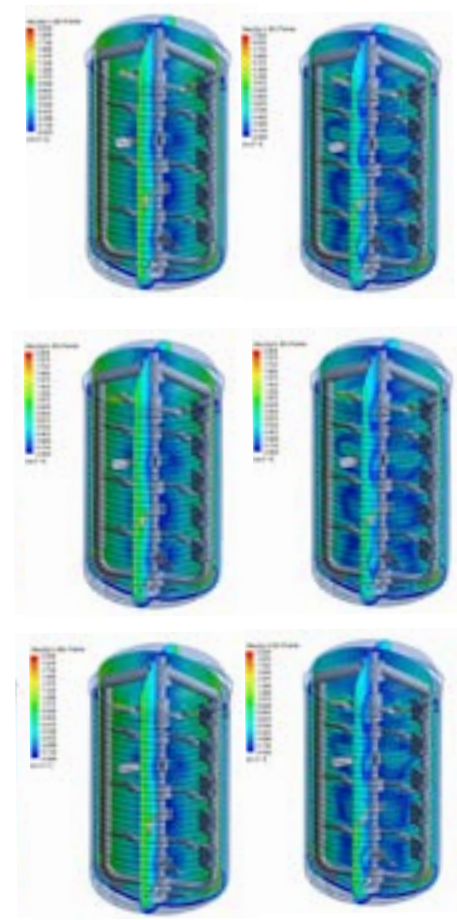
SEMESTER 2

» Mathematical Modelling of Energy Generation Installation
» New Generation Energy Technologies
» Thermoeconomic Analysis of Energy Processes
» Advanced Numerical Modelling Using OpenFOAM
» Finite Element Analysis
» Artificial Intelligence
» Management Course (elective)
» Foreign Language (next language, any level)



SEMESTER 3

» Energy Systems
» Integrated Production Systems
» Humanities Course (elective)
» Master's Seminar
» Master's Thesis



Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

Nuclear Power Engineering is an international Master's programme which aims to provide foreign and Polish students with an extensive and detailed knowledge and skills in the key fields pertaining to nuclear energy. It offers a number of specialised courses, including lectures, laboratories and classes, covering a wide range of topics from nuclear reactor physics, thermal hydraulics and radiation protection to fuel cycle, and nuclear power plant safety, operation and maintenance. The graduates are prepared to develop engineering careers in the energy sector with a special emphasis on the nuclear power industry. The programme is realised in collaboration with foreign and national institutes and companies, companies, and at the same time, it is supported by visiting professors and industrial specialists.

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Wojciech Zacharczuk, Ph.D.

JOB PROSPECTS

The graduates become nuclear power engineers and typically work for:
» electric power generation, distribution and sales companies,
» nuclear facilities and nuclear industry subcontractors,
» service and equipment suppliers for the energy sector,
» nuclear research and development institutes,
» nuclear regulatory authorities and other related bodies of public administration.

ENTRY INFORMATION

Requirements: Bachelor's Degree in the related field. Each application is assessed individually on its merits.
If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

» Applied Mathematics
» Physics - Selected Issues
» Numerical Methods
» Selected Problems of Thermal-Flow Processes
» Heat Transfer and Mass Flow in Nuclear Reactors
» Nuclear Physics and Reactor Theory
» Nuclear Fuel Cycle
» Radioisotopes and Ionising Radiation Protection
» Foreign Language B2+

SEMESTER 2

» Mathematical Modelling of Energy Generation Installation
» New Generation Energy Technologies
» Advanced Nuclear Power Reactors
» Nuclear Machinery and Equipment
» Materials Engineering
» Nuclear Safety and Security
» Management Course (elective)
» Foreign Language (next language, any level)

SEMESTER 3

» Energy Systems
» Thermonuclear Power Generation
» Humanities Course (elective)
» Master's Seminar
» Master's Thesis

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

At the end of the Master's programme the students will have a sound base of general scientific knowledge in the field of Automotive Engineering. The curriculum encompasses contemporary issues related to automotive industry including innovative design, materials science, quality, safety and ecology. The students will be sufficiently equipped and motivated for a life-long qualification in the field of Automotive Engineering. They will be prepared to implement their knowledge and to cooperate within an organisation. In making decisions and performing their tasks, they will be guided by social, economical and ecological principles.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Sławomir Susz, PH.D.

JOB PROSPECTS

The graduates will have the professional knowledge in the range of automotive engineering with particular concern in the latest trends in vehicle and engine construction as well as the standards of ecology and operation. The unique programme is designed to foster the development of the professional skills and to enable the graduates to work in the international and interdisciplinary teams in the field of automotive engineering.

ENTRY INFORMATION

Requirements: Bachelor's Degree. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

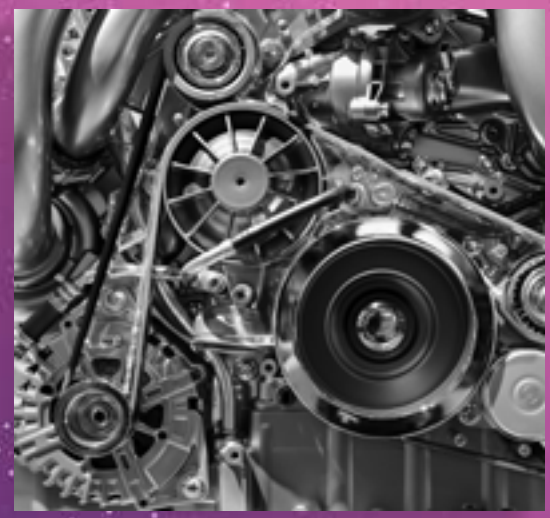
- Applied Mathematics - Operational Methods in Automotive Engineering
- Testing of Vehicle Elements and Assemblies
- Energy Efficiency Design of Power-train and Body
- Modelling of Multi-Body systems
- Machinery Design Process
- Analytical Mechanics
- Surface Engineering
- Design of Engineering Materials
- Machine and Device Control Systems
- Strength of Materials
- English Language B2+ or C1+

SEMESTER 2

- Project CAD /FEM for Metals
- Project CAD /FEM on Flows
- Developing Engine Technology
- Alternative Drive Systems
- Electronics in Cars
- Chemistry and Green Fuels
- Management for Engineers
- Non-Destructive Evaluation in Contemporary Manufacturing Systems
- Foreign Language – other than English A1 or A2
- Master's Thesis I

SEMESTER 3

- The Basis of Negotiations
- Automotive Expertises
- Safety of Vehicles
- Ecology of Road Transportation
- Communication for Engineers
- Diploma Seminar
- Master's Thesis II



Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

PRODUCTION MANAGEMENT

DESCRIPTION

The goal of these studies is to provide the students with knowledge and skills necessary to manage a production company. The curriculum encompasses issues related to company management, planning, organisation and control of manufacturing processes. The students learn about the latest methods of production management and IT techniques essential for the use of computer systems in company management. The knowledge and skills from many various disciplines such as: production organisation, quality management, logistics, computer science, economics, basics of law, mechanics and construction of machines, means that their education is universal and useful in production engineering and services in all sectors of the economy.

JOB PROSPECTS

The graduate of the programme has:

- extended knowledge about the management of production enterprises, including innovative companies of a global nature, knows the latest production technologies and development trends of modern production enterprises, knows the methods and techniques of production organisation as well as methods and tools for optimising production systems,
- the ability to design new production systems and improving existing companies, is able to effectively manage production resources as well as plan and control the implementation of production orders using advanced IT tools,
- the competence to undertake tasks in enterprises typical for such functions as: production manager, product manager, process manager, production engineer, process analyst, process development manager.

ENTRY INFORMATION

Requirements: Bachelor's Degree in: Control Engineering and Robotics, Mechanical Engineering and Machine Building, Transport, Management and Manufacturing Engineering or related.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students:
2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Sławomir Susz, PH.D.

CONTENT

SEMESTER 1

» Social Product Development
» New trends in production E
» Project Management
» Flexible manufacturing automation
» Simulation of manufacturing processes
» Reverse engineering
» Modelling of enterprise processes
» Factory layout planning
» Integrated normative management
» Selected methods of advanced data analysis E
» Physicochemistry
» Strategic management
» Foreign languages I

SEMESTER 2

» Research methodology
» Optimisation methods in production
» Quality management in production E
» Lean Manufacturing tools and methods
» Product lifecycle management E
» Innovative manufacturing technologies
» Systems reliability engineering and management
» Advanced methods of production organisation
» Socjology of organisation and leadership
» Foreign languages II
» MSC DIPLOMA THESIS I

SEMESTER 3

» Knowledge Management
» Design of experiments
» Robotisation and digitisation in manufacturing
» Financial analysis
» Inventive engineering
» Innovative manufacturing technologies
» Industry 4.0 (digitalisation and robotisation in industrial processes)
» Human resorce management
» Diploma seminar
» MSC DIPLOMA THESIS II

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The graduate has in-depth knowledge of these areas of physics, computer science and mathematics which are useful for modelling and solving problems related to the analysis of large information resources. The graduate knows the most important directions of research in the field of analytics of large data sets (Big Data Analytics), complex systems theory and statistical physics and has skills to:

(1) use IT tools and technologies to process large amounts of data,

(2) use methods of physics of complex systems to study and model the analysed information resources,

(3) find or design an adequate model of the observed dynamic phenomenon and verify it on the basis of empirical data. The graduate will be prepared to work in a dynamically developing market sector related to the statistical analysis of large data sets, aiming to uncover, among others, hidden patterns, market trends, customer preferences, etc.

ENTRY INFORMATION

Requirements: Bachelor's Degree in one of the following fields: Computer Science, Electronics, Mathematics, Telecommunication, Teleinformatics.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students:
2000 EUR per semester
EU/EFTA students:
no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinators:**
Prof. Jacek Cichoń
Prof. Antoni Mituś

CONTENT

OBLIGATORY COURSES (SEMESTER 1)

» Introduction to Complex Systems
» Elements of Probability
» Programming and Classification
» Stream Programming
» Statistical Physics
» Advanced Topics in Algebra

OBLIGATORY COURSES (SEMESTER 2)

» Complex Systems Theory and Practice
» Differential Equations
» Functional Programming
» Big Data Algorithms
» Non-linear Dynamics

OBLIGATORY COURSES (SEMESTER 3)

» Diploma Seminar
» MSc Thesis

SUPPLEMENTARY COURSES, IN PARTICULAR:

» Time Series Analysis
» Machine Learning
» Monographic Lecture in Computer Science
» Monographic Lecture in Theoretical Physics
» Monographic Lecture in Mathematics

NEW TRACK

» A new separate track is available for students who are interested in theoretical solid state physics and statistical physics with special focus on numerical methods. For more information see:
» http://www.kft.pwr.edu.pl/students.html

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39


Wrocław miasto spotkań
2
Politechnika Wrocławska

DESCRIPTION

This course will give the students multidisciplinary knowledge of electronics, optoelectronics, microwaves and telecommunications. It will enable them to obtain theoretical and practical knowledge in designing applied electronic systems based on analogue and digital techniques, lasers, fibres and microwave electronics as well as gain expertise in microprocessors, programmable logic applications and signal processing. Additionally, the students will gain laboratory experience and become familiar with work practices of research laboratories.

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Jerzy Witkowski, Ph.D.,

JOB PROSPECTS

The graduate will acquire the experience necessary for a professional career in industry, research units and universities, and will be prepared for 3rd level studies (Ph.D.). They will gain substantial international experience working together with highest class scientists in the environment of prestigious laboratories. They will possess well above standard skills in English communication.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Electrical, Electronic, Computer Engineering or related disciplines.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students:
2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

SEMESTER 1

» Optical Fibres and Optocommunications
» Microcontrollers Programming
» Computer Network and Systems
» Numerical Algorithms
» Numerical Methods in Differential Equations
» Social Communication
» Foreign Language

SEMESTER 2

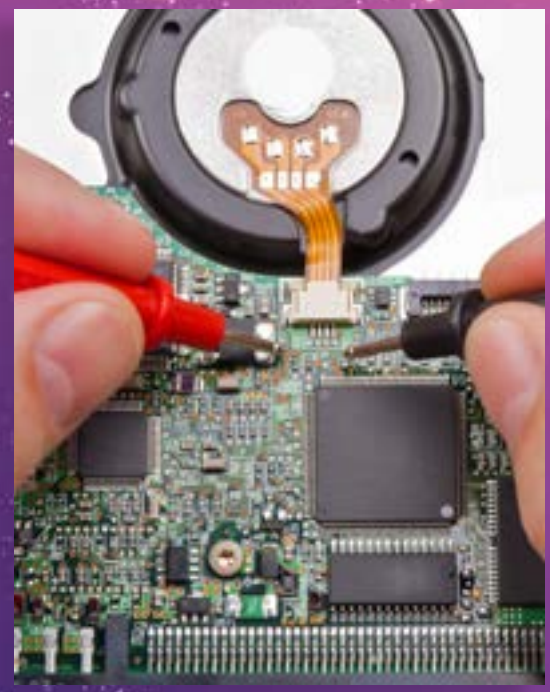
» DSP Architectures
» Hardware Programming
» Lasers and Applications
» Analogue Peripherals of Digital Systems
» Machine Learning Methods
» RF Circuits Design
» Specialisation Seminar

SEMESTER 3

» Master's Thesis
» Diploma Seminar
» New Approaches to Electronics and Telecommunications
» Entrepreneurship
» Elective Course

ELECTIVE COURSES:

» Real Time Operating Systems
» Optics and Non-linear Optics
» Colourimetry and Photometry
» IoT Modules
» Electrotechnics
» Advanced Objective Programming



Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

EMBEDDED ROBOTICS

DESCRIPTION

The Embedded Robotics programme combines the fields of robot control and design with digital electronics and embedded circuits. The goal is to provide the scientific skills and the practical ability to analyse, develop and deploy systems for the broad field of robotics: low and high-level control systems, perception, in particular robot vision, intelligence, motion and task planning, communication, and human-robot interaction. The courses are meant to provide an in-depth understanding of theory and the principles, methods, and processes, allowing the graduates to achieve the competences required in their future job responsibilities. Typical activities include solving problems in the analysis, design, development, integrating, deployment, debugging, and maintenance of robotic and/or embedded systems.

JOB PROSPECTS

The graduates of Embedded Robotics are prepared for creative engineering activities in the field of industrial and service robotics, embedded electronics, and also for research and scientific work including the Ph.D. degree studies. Specifically, the graduates can pursue an industry, research and development, business or administration career as:

» design engineer and/or programmer of embedded systems and circuits,
» implementation/deployment specialist of industrial robotic systems, robotics systems specialist, integrator, project manager,
» control systems engineer, embedded control devices and systems specialist, building and home automation systems design engineer,
» expert/consultant for robotic systems deployment, including intelligent and social robots.

ENTRY INFORMATION

Requirements: Bachelor's or Bachelor of Engineering Degree in Electrical Engineering or related field. Minimum 210 ECTS.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:**
February 2022
» **Programme coordinator:**
Elżbieta Roszkowska, Ph.D., D.Sc.

CONTENT

SEMESTER 1

» Mathematical Methods of Automation and Robotics
» Control Theory
» Embedded Systems
» Artificial Intelligence and Machine Learning
» Applied Logic
» Physics
» Social Communication
» Foreign language A1
» Foreign language B2

SEMESTER 2

» Control Theory for Embedded Systems
» Robotic Programming Environments
» Event-based Control
» Mobile Robotics 1
» Sensors and Actuators
» Modelling and Identification
» Theory and Methods of Optimisation
» Intermediate Project
» Specialisation Seminar

SEMESTER 3

» Advanced Robot Control
» Mobile Robotics 2
» Social Robots
» Task and Motion Planning
» Master's Thesis Project
» Diploma Seminar
» Entrepreneurship

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The programme, offered by the Faculty of Pure and Applied Mathematics and run in cooperation with the Hugo Steinhaus Center, is based on educational standards of the European Consortium for Mathematics in Industry (ECMI) as confirmed by the status of ECMI Teaching Centre obtained by Wrocław University of Science and Technology in 2014.
The curriculum is oriented towards real-life applications and industrial problems in educational style and contents. The goal of the studies is the real world applied mathematics education of specialists who are well prepared not only for work in the international financial institutions or enterprises, but also for any situation in which the creative thinking is needed. The graduates have no problems with finding good jobs in the finance and insurance or industrial sectors in Poland and abroad. The MSc diploma offers an opportunity to continue education at Ph.D. studies.

The programme offers four main specialties:

» Financial and Actuarial Mathematics
» Mathematics for Industry and Commerce
» Data Engineering
» Modelling, Simulation and Optimisation

JOB PROSPECTS

The graduates will have obtained knowledge in mathematics and economics/finance; experience in pricing financial and actuarial contracts, modelling, simulation and optimisation, computational methods and data science. They will be prepared for solving problems in the financial/actuarial and industrial sectors and gaining information from the literature and other sources. They will possess organisational skills and experience necessary for a professional career in research units, industry and at universities and colleges.

ENTRY INFORMATION

Requirements: Bachelor's or Master's Degree in Applied Mathematics, Control Engineering and Robotics, Economics, Electronics, Electronics and Telecommunications, Computational Physics, Technical Physics, Physics, Computer Science, Computer Science and Econometrics, Industrial Computer Science, Applied Computer Science, Data Engineering, Quantum Engineering, Systems Engineering, Mathematics, Mathematics and Statistics, Mathematics in Technology, Computational Mathematics, Teleinformatics, Telecommunications and related domains obtained either in Poland or abroad. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application: Non-EU/EFTA students see: www.admission.pwr.edu.pl EU/EFTA students see: www.rekrutacja.pwr.edu.pl
» English: Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee: Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee: Non-EU/EFTA students see: www.admission.pwr.edu.pl
EU/EFTA students see: www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:** Janusz Szwabiński, D. Sc.

CONTENT

SEMESTER 1

» Economathematics
» Partial Differential Equations with Applications in Physics and Industry
» Life Insurance Models
» Social Elective Subject
» Foreign Language
» Elective Course
» Elective Course

SEMESTER 2

» Optimisation Theory
» Agent-based Modelling of Complex Systems
» Social Elective Subject
» Foreign Language
» Elective Course
» Elective Course
» Elective Course

SEMESTER 3

» Diploma Thesis
» Diploma Seminar
» Elective Course

ELECTIVE COURSES

» Financial Risk Management
» Computational Finance
» Insurance Models for Industry
» Reserves in Life and Non-life Insurance
» Risk Management in Insurance
» Numerical Methods in Differential Equations
» Introduction to Applied Fluid Dynamics
» Perturbation Methods
» Applied Functional Analysis
» Non-linear Methods
» Introduction to Inverse Problems
» Free Boundary Problems
» Diffusion Processes on Complex Networks
» Analysis of Unstructured Data
» Statistical Packages
» Computer Simulations of Stochastic Processes
» Estimation Theory
» Mathematical Image Processing
» Queues and Communication Networks
» Advanced Topics in Dynamic Games
» Operations Research
» Optimal Control
» Introduction to Big Data Analytics
» Data Mining
» Machine Learning
» Introduction to Compressed Sensing

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The studies' programme is focused on delivering multi-disciplinary knowledge and developing theoretical and practical skills in the areas of computer science, information technology, systems, and control engineering. The course specialisation is very attractive. During the three-semester course on Research Skills and Methodologies, the students are involved in research while working on projects both individually and as a team. More than 50% of the course's programme is focused on active forms like classes (tutorials), laboratory training, and preparing assigned projects. The students will have the opportunity to spend a part of the study with WUST and another part in the United Kingdom. There are also possibilities to get two MSc Diplomas: one from WUST and one from a foreign university. In order to achieve that, one has to get 90 ECTS and prepare Final Projects at both universities.

JOB PROSPECTS

The graduates will gain knowledge in computer science, computer engineering. They will also gain experience in designing practical applications, especially for computer industrial and control systems. They will be prepared for solving problems in informatics, control sciences, technology (especially designing computer systems for industry using classical and intelligent solutions) and gaining information from the literature and other sources. The alumnus will be able to play the role of a team leader, organise and run research debates. They will have acquired the experience necessary for a professional career at research units, universities, colleges and in the industry. The graduates will also gain substantial international experience and have been acquainted with the environment of prestigious laboratories. They will acquire English communication skills that are well above standards.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Informatics, Computer Science, Computer Engineering, Information Technology, Teleinformatics, Computer Systems, Robotics, Control, Control Engineering, Systems, Electronics, Telecommunications.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.

» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee

» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

» **Duration:** 3 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** February 2022
» **Programme coordinator:**
Wojciech Kmiecik, Ph.D.

CONTENT

SEMESTER 1

» Research Skills and Methodologies-1
» Discrete Mathematics
» Signal, Systems and Control
» IT Applications in Business and Commerce
» Information Systems Modelling
» Computer Project Management
» Social Communications
» English B2+/Polish Language
» Physics

SEMESTER 2

» Research Skills and Methodologies-2
» Optimisation Methods: Theory and Applications
» Secure Systems and Networks
» Methods of Computational Intelligence and Decision Making
» Modelling and Optimisation of Computer Networks
» Elective: e.g., Information Storage and Management
» AIC – 1 Diploma Seminar
» Foreign Language/Polish Language

SEMESTER 3

» Research Skills and Methodologies-3
» Elective: e.g., Modern Software and Hardware Management
» Introduction to Computer Vision
» AIC – 2 Diploma Seminar
» Business Entrepreneurship
» Final Project (MSc Thesis)

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The final effect of studies at the Master's level is obtaining knowledge, skills and qualifications in accordance with "Teaching Standards" in the field of Computer Science. Students receive extended knowledge in the area of the specialisation. Graduates will be able to: use various methods and techniques, formulate and solve specific problems related to computer science, become team work leaders. Additionally, they will have obtained fluent and creative knowledge application in the area of the specialisation, which means mathematical models designing, problem formulating and solving, problem oriented information systems analysis and testing.

ABOUT STUDIES

» **Duration:** 4 semesters
» **Mode of study:** Full time
» **Language of instruction:** English
» **Start date:** 1st October 2021
» **Programme coordinator:**
Marek Krótkiewicz, Ph.D., D.Sc.

JOB PROSPECTS

Employment in IT companies and organisations which apply informatics tools and systems at the specialists and manager positions.

ENTRY INFORMATION

Requirements: Bachelor's Degree, preferably in Computer Science or in a related field. Applicants with a Bachelor's Degree outside of Computer Science must demonstrate significant proficiency in computer science. Any area of requirements can be satisfied through courses completed at the bachelor level or by suitable experience.
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Deadline for application:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl
» English:
Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
» Tuition fee:
Non-EU/EFTA students: 2000 EUR per semester
EU/EFTA students: no tuition fee
» Application fee:
Non-EU/EFTA students see:
www.admission.pwr.edu.pl
EU/EFTA students see:
www.rekrutacja.pwr.edu.pl

CONTENT

Forms of teaching: lectures, laboratories, tutorials, projects, seminars, research.

SEMESTER 1

» Advanced Databases
» Advanced Topics in Artificial Intelligence
» Information System Modelling and Analysis
» System Modelling and Analysis
» Foreign Language I
» Foreign Language II

SEMESTER 2

» Parallel and Distributed Computing
» Software System Development
» Modelling and Analysis of Web-based Systems
» Mobile and Multimedia Systems
» Foundations of Knowledge Engineering

SEMESTER 3

» Physics of Contemporary Computer Science
» Recent Advances in Computer Science
» Ethics of New Technologies
» Fundamentals of Business and Intellectual Property
» MSc Thesis I

Modules of optional courses
(select one of the courses within the module)
M 3.1:
» Parallel Computer Architecture
» Advanced Computer Network
M 3.2:
» Advanced Computer Graphics
» Digital Image Processing
» Multimedia Information Systems
» User Interface Development
M 3.3:
» Data Warehouses
» Expert Systems

SEMESTER 4

» Research Methodology
» Business Modelling and Analysis
» Monographic Subject
» Diploma Seminar
» MSc Thesis II

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

DESCRIPTION

The programme is focused on computer security and cryptography, including both advanced knowledge and practical skills. The target is to cover the current advanced topics, but at the same time to develop a creative approach for solving future problems and to acquire the ability to design new pragmatic technologies in the area of computer security, privacy and cryptography. Apart from core technological topics of computer security, procedural and legal issues as well as security management are covered.

JOB PROSPECTS

The programme aims to prepare security and cryptography professionals who design advanced hardware and software tools, implement, audit, and run computer security systems. In particular, apart from working for security industry, they may be responsible for the protection of data and IT resources of private enterprises as well as public institutions, in accordance with emerging legal obligations. Audit and certification bodies may offer additional job opportunities.

ENTRY INFORMATION

Requirements: Bachelor's Degree: undergraduate degree in one of the following fields: Computer Science, Electronics, Mathematics, Telecommunication, Teleinformatics, Cybersecurity. Each application is assessed individually on its merits, however a strong background in computer science is necessary. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:**
  Prof. Mirosław Kutyłowski
  miroslaw.kutylowski@pwr.edu.pl

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

CONTENT

OBLIGATORY COURSES:

» Cryptography
» System Security
» Security with Embedded Systems
» Compliance and Operational Security

SUPPLEMENTARY COURSES, IN PARTICULAR:

» Electronics for Security Engineers
» Physics for Security Engineers
» Randomised Algorithms
» Human-Machine Interaction
» Identification Systems
» High Performance Computing
» Applied Stochastics with Applications for Security and Privacy
» Data Mining
» Cloud Computing and P2P
» Distributed Algorithms
» Ad Hoc Systems
» Databases
» VLSI
» Digital Signal Processing
» Telecommunication Systems
» Group Programming Project

DESCRIPTION

The programme is focused on delivering knowledge and developing skills needed for a successful career in Computer Science and Engineering, particularly in designing and maintaining complex service-oriented information systems. It develops abilities to solve non-routine problems and to formulate opinions based on incomplete information. The programme covers professional topics as well as R&D teamwork. Special attention is given to the ability to work in multinational industrial teams. The curriculum covers topics in software development and analysis, networking, web services, human interfaces and security of complex information systems.

ABOUT STUDIES

- **Duration:** 3 semesters
- **Mode of study:** Full time
- **Language of instruction:** English
- **Start date:** February 2022
- **Programme coordinator:** Dariusz Caban, Ph.D.

JOB PROSPECTS

The graduates will have knowledge and skills needed for a career in computer and software organisations, research units, industry, in government administration and in education. They will be particularly well prepared to work on the implementation and maintenance of new-generation web services. They will have the experience necessary for a professional career and to undertake level III (Ph.D.) education. They will possess well above standard skills in communication in multinational teams.

ENTRY INFORMATION

Requirements: Bachelor's Degree in Computer Science, Computer Engineering, Information Technology, Informatics, Teleinformatics, Telecommunication or related. The degree must be obtained in an engineering programme of studies of at least 3.5 years duration (equivalent to 210 ECTS).
Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Deadline for application:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl
- English:
  Equivalent of minimum TOEFL IBT – 87 points or 6.5 points IELTS. List of accepted language certificates can be checked online.
- Tuition fee:
  Non-EU/EFTA students: 2000 EUR per semester
  EU/EFTA students: no tuition fee
- Application fee:
  Non-EU/EFTA students see:
  www.admission.pwr.edu.pl
  EU/EFTA students see:
  www.rekrutacja.pwr.edu.pl

CONTENT

The programme includes traditional lectures and hands-on study forms (mainly laboratories and design projects). In the 3rd semester, the student is also required to complete an individual final project and write a thesis on its basis. The diploma examination, the passing of which is required to obtain the Master's title, covers topics of the completed courses and a presentation of the thesis. The courses delivered in each semester are as follows:

SEMESTER 1

- Signal, Systems and Control
- Computer Project Management
- IT Applications: Electronic Media in Business and Commerce
- Information Systems Modelling
- Discrete Mathematics
- Research Skills and Methodologies-1
- Social Communications
- English/Polish Language
- Physics

SEMESTER 2

- Multimedia and Computer Visualisation
- Application Programming - Java and XML Technologies
- Information Systems Analysis
- Advanced Databases
- Secure Systems and Networks
- Softcomputing
- Foreign Language

SEMESTER 3

- Application Programming: Data Mining and Data Warehousing
- Application Programming: Mobile Computing
- IE Seminar
- Final Project
- Entrepreneurship

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

PREPARATORY POLISH LANGUAGE COURSE

PREPARATORY POLISH LANGUAGE COURSE

DESCRIPTION

The Department of Polish Language for Foreigners offers courses in Polish language and Polish culture on different levels – A1, A2, B1, B2, C1 and C2. They are intended for candidates who wish to prepare for future studies at all academies in Poland as well as for those who want to learn Polish intensely. The Polish language courses last for the whole academic year (from October to June). They include 20 lessons of Polish language per week (5 times a week, 4 lessons a day).

The first term contains 300 hours of Polish language, and so does the second term. The students also learn supplementary subjects preparing them for their further studies. The supplementary subjects can be selected according to the students' needs out of the following: mathematics, physics, biology, chemistry, computer sciences, geography, knowledge of Polish culture and history – dependent on the students' needs. The students start learning the specialisation courses on the advanced level in the winter term and on the elementary level – in the summer term. The specialisation subjects are taught in Polish.

The courses, thanks to the fact that they are carried out on different levels, guarantee a communicative dexterity in both official and unofficial situations. At the same time, the courses prepare the candidates for studying on different faculties. The students improve basic linguistic competences: listening comprehension, reading comprehension, speaking and writing different kinds of text. Additionally, some lectures and classes on Polish history and culture are carried out in Polish and English.

The course finishes with a written and oral examination in Polish language and with examinations in all chosen subjects. The Department of Polish Language for Foreigners provides also additional activities, such as: tourist tours to the most interesting regions of Poland, visiting some historical places in Wrocław and participating in different cultural events. Taking part in the course, the students learn about important traditions and customs of the Poles.

ENTRY INFORMATION

The university admission procedure based on secondary education certificate or degree certificate. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

» Mode of study:
Full time, 600 or 900 hours

» Duration; start date:
1 academic year (2 semesters)
- 1st October 2021
1.5 academic year (3 semesters) -
- 1st October 2021 or
- 1st Februar 2022

» Tuition fee*:
2000 EUR - 1-year course
3000 EUR - 1.5-year course

» Deadline for application:
admission.pwr.edu.pl

» Language of instruction:
Polish

» Application fee:
EU/EFTA students: 150 EUR
Non-EU/EFTA students: 150 EUR

» Contact:
International Relations Office
Division of Foreign Students Admission and Support
e-mail: admission@pwr.edu.pl

*** Fee also includes:**
Textbooks, trips to the ZOO, water knowledge centre „Hydropolis", the Four Domes Pavilion, tours around Wrocław and hiking trips and much more.

CONTENT

The curriculum of learning Polish as a foreign language on the elementary level A includes individual-connected topics primarily (personal data, education, general look, family relations, leisure time activities, health, etc.). Subsequent subjects include: one's surroundings (both immediate: living place, students' hostel, etc., and more distant: city and its institutions), everyday routines, plants, animals, the weather and climate.

THE GRAMMATICAL MATERIAL INCLUDES:

» declination of nouns, adjectives, pronouns and numerals;
» verb inflexion, transitive and intransitive verbs, voices and moods of verbs, impersonal forms of verbs, modals and verbs connected with movement;
» comparison of adjectives and adverbs;
» classifying words into different parts of speech;
» syntax of a single and compound sentence, double negation, punctuation.

The curriculum includes also typical communicative situations.

THE GRAMMATICAL MATERIAL INCLUDES:

» declination of nouns, adjectives, pronouns and numerals;

COURSES:

» Polish history has been presented from the oldest to the contemporary times. The course has been divided into parts determined by dates of great significance to the society and the state.

» The purpose of the geography course is to present the social and economic situation of the world with a special emphasis on Poland.

» The most important chemistry problems are the following: atoms, solutions, electrolytes, hydrolysis, matter, reactions of oxidation and reduction, electrochemical processes and organic chemistry.

» Selected areas of biology cover, among others, the skeletal system, muscular system, cardiovascular system, lymphatic system, digestive system, nervous system and reproductive system.

» Participants of mathematics classes will have an opportunity to get to know the language and terminology used in mathematics. They will also have a chance to make up for the secondary school knowledge they miss (e.g. digits, geometric figures, fractions, mathematical actions, functions, sequences, etc.).

» The purpose of the physics course is giving participants an opportunity to understand the phenomena of the surrounding world and nature, the structures of physics and its connections with other natural sciences (kinematics, dynamics, thermodynamics, electrostatics, optics, contemporary physics, electric current).

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

PREPARATORY
ENGLISH LANGUAGE COURSE

DESCRIPTION

The Department of Foreign Languages at Wrocław University of Science and Technology offers preparatory courses to foreigners who want to study BSc and MSc courses in English at Wrocław University of Science and Technology. The course includes 600 hours of English (20 hours of English per week 5 times x 4 hours a day), 120 hours of Polish (4 hours a week) as well as 90 hours of mathematics and 60 hours of physics.

To start the course of English students should be at intermediate level B1 as set forth in Common European Framework for Language, Teaching and Assessment. The aim of the course is to help the students improve their language skills and reach B2 level (B2 level ACERT Exam) and to introduce English for academic purposes in order to enable them to follow the university courses in English.

The preparatory English course lasts for the whole academic year (from October to June) and is divided into two semesters. In the first semester the students learn general English with professional language elements. The second semester covers a balance of language skills (speaking, listening, reading, writing), grammar and vocabulary with a special focus on academic language.

The course builds the skills required for understanding lectures, tutorials, research papers and written assignments in English. At the end of the course students take examinations in English, physics and mathematics. The English examination is at B2 level and consists of two parts, a written test and an interview. The participants will be provided with coursebooks and other teaching materials to be used at the preparatory English course all free of charge. The final examination is ACERT Academic exam. It tests listening and reading skills, speaking, knowledge of grammar and vocabulary.

The exam registration fee is included in the price of the course. Throughout the academic year the students will be provided with an opportunity to go on 1-2 day trips to discover the most beautiful places in the region.

The students will also be able to take part in talks and lectures about history of Wrocław and Poland, cultural events, technical English and more.

ENTRY INFORMATION

The university admission procedure based on secondary education certificate or degree certificate. Each application is assessed individually on its merits. If in doubt, please contact an Admission Officer, e-mail: **admission@pwr.edu.pl**

- Mode of study:
  Full time, 600 hours
- Duration; start date:
  1 academic year (2 semesters)
  - 1st October 2021
  or 1 semester - February 2022
- Deadline for application:
  admission.pwr.edu.pl
- Tuition fee*:
  3300 EUR per year;
  1650 EUR per semester
- Application fee:
  150 EUR
- Contact:
  International Relations Office
  Division of Foreign Students Admission and Support
  e-mail: admission@pwr.edu.pl,
  lukasz.mally@pwr.edu.pl

*** Fee also includes:**
Textbooks, trips to the ZOO, water knowledge centre „Hydropolis" and the Four Domes Pavilion, tours around Wrocław, hiking trips and much more.

CONTENT

ENGLISH COURSE SYLLABUS 1ST TERM

SPEAKING

» communicating in social situations
» communicating in professional and intercultural environment
» telephoning: making enquiries, making arrangements, complaining
» focusing on functions: agreeing and disagreeing, giving opinions, interrupting and dealing with interruptions, asking for clarification
» discussing a wide range of personal and study/work-related topics: culture and cross-cultural relations, university and business-related environment, training and development, describing innovative products and services, business travel, buying and selling
» focusing on pronunciation: word and sentence stress, sound linking

LISTENING

» understanding real life situations
» following instructions
» listening for general meaning, details, pronunciation, stress and intonation reading
» understanding written instructions
» understanding story sequence
» understanding authentic writing

WRITING

» organising writing
» using a range of styles
» writing formal and informal letters and emails
» writing CVs and letters of application

GRAMMAR

» revision of tenses
» conditionals
» question forms
» comparatives
» dependent prepositions
» relative clauses
» indirect speech

VOCABULARY

» building a personal lexicon based on topical vocabulary
» business vocabulary
» formal and informal vocabulary

ENGLISH COURSE SYLLABUS 2ND TERM

ACADEMIC SPEAKING

» communicating in seminars and tutorials
» delivering an oral presentation
» focusing on functions: expressing and justifying opinions, explaining, suggesting, speculating, analysing, summarising, narrating
» recognising a range of styles
» speaking without hesitating

ACADEMIC LISTENING

» understanding lectures and tutorials
» following presentations
» note taking

ACADEMIC READING

» understanding specialist and non-specialist academic writing
» identifying text types
» scanning and skimming

ACADEMIC WRITING

» organising writing
» expressing fact and opinion
» describing and comparing graphs and tables
» describing processes
» writing a report
» writing a summary
» writing an argumentative essay
» using quotations
» paraphrasing
» recognising levels of formality

GRAMMAR FOR ACADEMIC PURPOSES

» understanding choice of tense
» impersonal style and passive constructions
» modal verbs
» forming complex noun phrases
» changing emphasis in a sentence
» expressing causality and purpose

VOCABULARY FOR ACADEMIC PURPOSES

» language for classifying
» word formation
» confusable words
» technical and semi-technical vocabulary
» researching specialist vocabulary

Questions? Please contact the Admission Officers e-mail: admission@pwr.edu.pl, phone: +48 71 320 37 11, +48 71 320 31 70, +48 71 320 37 19, +48 71 320 44 39

Wrocław a great place to be

Wrocław University of Science and Technology
International Relations Office
Division of Foreign Students Admission
and Support
www.pwr.edu.pl
www.admission.pwr.edu.pl
e-mail: admission@pwr.edu.pl
telephone:
+48 71 320 37 11
+48 71 320 31 70
+48 71 320 37 19
+48 71 320 44 39

You can find us at: