6

# APPLIED COMPUTER SCIENCE

**FACULTY OF COMPUTER SCIENCE AND MANAGEMENT |**
**FIELD OF STUDY: APPLIED COMPUTER SCIENCE | APPLIED COMPUTER SCIENCE |**
BACHELOR'S DEGREE PROGRAMME

7

## DESCRIPTION

The programme emphasizes 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 analog 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, safe and meeting users requirements information systems; 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 2020
- » **Programme coordinator:**
  Marek Krótkiewicz, Ph.D., D.Sc.
  marek.krotkiewicz@pwr.edu.pl

## JOB PROSPECTS

Employment in informatics companies that build, deploy and maintain IT tools and systems, particularly employment in project teams, especially programming teams, in organizations 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 recognized 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 the Admission Officer.

- » **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 EC TS ). 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 Organization

### 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

BACHELOR'S DEGREE PROGRAMMES

WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

BACHELOR'S DEGREE PROGRAMMES