



Cybersecurity

Field of study: Computing



Programme description

Specialization in Cyber Security was created in response to the demand for specialists in the field of security both future researchers and employees of various organizations or companies, both in Poland and abroad. The need for these professionals is growing all over the world, including Europe and Poland. A significant part of job offers for IT specialists in Poland are offers for specialists in the field of cyber security or job offers in which one of the requirements is the knowledge of security issues in information systems.

Students of the Cyber Security specialization will have such subjects as: general introduction to cyber security issues (developed in detail in subsequent courses); cryptography and cryptanalysis (design and analysis of cryptographic algorithms and protocols); advanced security of IT systems; theoretical and practical functional security; network security, including security of wireless networks, security of software-defined networks; development, testing and evaluation of application security; security of the Internet of Things; security of Big Data analysis, security breaches in Clouds and Data Centers. They will also learn about issues concerning the latest trends and emerging technologies, such as blockchain and smart contracts.

Within the framework of each specialization subject great emphasis is placed on the practical application of the given subject matter. Courses providing broad practical knowledge will be conducted in specialized laboratories equipped with equipment from Cisco Systems, Huawei, and Juniper Networks. Graduates will be prepared to conduct penetration tests, analyze malicious software, and manage IT systems, as well as take courses that prepare them for certification exams of such companies as Cisco or Huawei. In the future, graduates of this specialization will know the principles and best practices of cyber security, to effectively analyze, design, and protect ICT systems.

The proposed specialization is implemented in cooperation with domestic and foreign partners (Intel, Global Cybersecurity Institute Rochester, Florida International University).

The candidates should hold a bachelor's degree in Computer Science, Computer Engineering, Informatics or related fields.

Course summary:

Semester 1

- Introduction to Cybersecurity
- Cryptography and Basics of Cryptanalysis
- Innovation and creative thinking
- Advanced System Security
- Functional Safety
- Wireless Communication Security
- Communication in English

Semester 2

- Application Security
- Network Security
- IoT Security
- Methodology of research projects
- Elective course: Security of software defined networks/Side Channel Attacks
- Elective course: Security of Big Data Analytics
- Elective course: Mechanisms of violations and ensuring security in cloud and DC
- Elective course: Security of data storage systems
- Elective course: Security of Industrial IoT
- Elective course: Blockchain Technology and cryptocurrency
- Elective course: Cyber Warfare/Digital Forensics
- Scientific & Technical Writing

Semester 3

- Diploma Seminar
- Research and Implementation Project
- IT Security Management and Penetration Testing
- Malicious Software Analysis
- Master's Thesis Preparation



M.Sc. Programmes

Cybersecurity

Field of study: Computing

University	Poznan University of Technology Poznan, POLAND
Degree to be obtained	Master of Science
Programme website	https://www.put.poznan.pl/en
Contact	International Relations Office Piotrowo 5 61-138 Poznan, Poland
Phone	+48 61 665 3544
Fax	+48 61 665 3956
E-mail	study@put.poznan.pl
Language of instruction	English
ECTS points	90
Duration	1.5 years (3 semesters)
Programme begins	end of February
Programme ends	end of June
Deadline for application	3 months before the course starts – end of November
Education requirements	English language – level B2 (Common European Framework), Bachelor of Science degree (or equivalent). Full list of the required documents is available at: https://www.put.poznan.pl/en
Mode of instruction	Lectures, classes, laboratory classes, projects

