Courses available in English
@ **Computer Science / Artificial Intelligence**

Poznan University of Technology

Note*: Courses marked as Elective N are run as either/or option (we don't know a priori which one will be available).*

Course	ECTS
Polish (obligatory for Erasmus+ students)	2

Artificial Intelligence, B.Sc.

ECTS cards: https://www.put.poznan.pl/karty-ects/20212022/sztuczna-inteligencja---artificial-intelligence/stacjonarne/studia-pierwszego-stopnia

Summer / Spring:

Course	ECTS
Linear Algebra	5
Introduction to probability	5
Calculus II	5
Computer architecture with low-level programming	3
Algorithms and data structures	6
Operating systems with concurrency programming	5
Software engineering	4
Computer networks	4
Machine learning	5
Elective 3: Elements of convex optimization / Optimization methods for data analysis	3
Data mining	5
Elective 4: Data visualization / Graphics	3
Robotics I	4
Natural language processing	4
Elective 8: Decision analysis / Decision support	5
Elective 9: Big data and distributed processing / Theory and practice of processing big data	5
Elective 10: Reinforcement learning and multi-agent systems / Computational intelligence	4
Robotics II	4
Elective 11: Problem classes II: machine learning / Problem classes II: artificial intelligence	2
Ethics and research	2
Methodology of writing scientific thesis	0
English	1-2

Winter / Autumn:

Course	ECTS
Introduction to mathematics for computer science	5
Calculus I	5
Introduction to Artificial Intelligence	3
Discrete mathematics	5
Introduction to programming	5
Introduction to computing	3
Artificial life with cognitive sciences	3
Statistics	5
Elective 1: Information theory / Data compression methods	3
Object programming	4
Database systems	5

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Artificial intelligence	5
Elective 2: Combinatorial optimization / Discrete optimization	5
Career resources	2
Deep learning	5
Internet applications	5
Elective 5: Operational research / Industrial engineering	5
Information retrieval	3
Innovative enterpreneurship	4
Elective 6: Problem classes I: data analysis / Problem classes I: artificial intelligence	3
Elective 7: Computer vision / Signal processing	5
English	1
Cybersecurity	5
Elective 12: Semantic web and social networks / Man-machine interaction / Declarative programming and expert systems	5
Elective 13: AI and games / Evolutionary computation	4
Elective 14: Internet of things / Spiking neural networks	3

Software Engineering M.Sc.

ECTS cards: https://www.put.poznan.pl/karty-ects/20212022/informatyka/stacjonarne/studia-drugiego-stopnia

Summer / Spring:

Course	ECTS
Software Design and Modeling	4
Project Management	4
Software Development Studio 1	6
Technologies of Software Development	6
Database Performance	5
Communication in English	2
New Trends in Multimedia Technologies	3
Diploma Seminar	2
IT in Administration	3
Frontend Development	5
Concept and Tools of Modern Enterprise Management	3
Interpersonal Communication / Intercultural Communication	2

Winter / Autumn:

Course	ECTS
Software Architecture and Verification	6
Software Development Studio 2	6
Software Evolution and Maintenance	6
Pre-diploma Seminar	3
Quality Management & Experimental Software Engineering	5
Scientific & Technical Writing	2

Cyber Security M.Sc.

ECTS cards: https://www.put.poznan.pl/karty-ects/20212022/informatyka/stacjonarne/studia-drugiego-stopnia

Summer / Spring:

Course	ECTS
Introduction to Cybersecurity	5
Cryptography and Basics of Cryptanalysis	6

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Innovation and Creative Thinking	3
Advanced System Security	6
Functional Safety	4
Wireless Communication Security	4
Communication in English	2

Winter / Autumn:

Course	ECTS
Application Security	5
Network Security	5
IoT Security	6
Elective 1: Security of Software-Defined Networks / Side-channel Attacks	3
Elective 2: Security of Big Data Analytics / Mechanisms of Violations and Ensuring Security in Cloud and DC / Security in Data Storage Systems	4
Methodology of research projects	2
Elective 3: Security of Industrial IoT / Blockchain Technology and Cryptocurrency	2
Elective 4: Digital Forensics / Cyber Warfare	1
Scientific & Technical Writing	2

Computer Science, B.Sc.

ECTS cards: https://www.put.poznan.pl/karty-ects/20212022/informatyka/stacjonarne/studia-pierwszego-stopnia

Summer / Spring:

Course	ECTS
Computer Graphics and Visualization	4
Advanced Internet Applications	4

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