SWPS University

Faculty of Design in Warsaw

FIELD OF STUDY: Computer Science

PROFILE: practical

LEVEL: bachelor degree

MODE: full-time

Programme starts in 2025/2026

SEMESTER 1					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Linear Algebra	lecture, tutorial	60	credit with grade	6
2	Elements of Logic and Set Theory	lecture, tutorial	60	credit with grade	6
3	Introduction to Programming	lecture, lab	60	credit with grade	6
4	Developer Tools	lab	24	credit with grade	3
5	Social and Group Processes, Communication in Organizations	lecture, tutorial	48	credit with grade	4
6	Academic Skills	lecture	24	credit with grade	2
7	Foreign Language 1	tutorial	30	credit with grade	3
	No. of hours and credits		306		30

SEMESTER 2					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Theoretical Foundations of Computer Science	lecture, tutorial	48	credit with grade	5
2	Discrete Mathematics	lecture, tutorial	60	credit with grade	6
3	Mathematical Analysis 1	lecture, tutorial	48	credit with grade	6
4	Programming in C	lecture, lab	48	credit with grade	5
5	Computer Architecture and Organization	lecture, lab	48	credit with grade	5
6	Foreign Language 2	tutorial	30	credit with grade	3
	No. of hours and credits		282		30

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SEMESTER 3					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Object-Oriented Programming	lecture, lab	60	credit with grade	5
2	Operating Systems	lecture, lab	48	credit with grade	5
3	Mathematical Analysis 2	lecture, tutorial	48	credit with grade	5
4	Probability and Statistics	lecture, tutorial	48	credit with grade	5
5	Basics of Entrepreneurship and Intellectual Property Protection	lecture	24	credit with grade	3
6	Elective 1	lecture	24	credit with grade	4
7	Foreign Language 3	tutorial	30	credit with grade	3
8	Physical Education 1	tutorial	30	credit without grade	0
	No. of hours and credits		312		30

SEMESTER 4					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Algorithms and Data Structures	lecture, lab	60	credit with grade	6
2	Data Analysis Techniques	lecture, lab	48	credit with grade	5
3	Computer Networks	lecture, lab	48	credit with grade	6
4	Elements of Cryptography and Number Theory	lecture, tutorial	48	credit with grade	6
5	Representations, Cognitive Processes and Learning	lecture, tutorial	48	credit with grade	4
6	Foreign Language 4	tutorial	30	credit with grade	3
7	Physical Education 2	tutorial	30	credit without grade	0
	No. of hours and credits		312		30

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SEMESTER 5					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Databases	lecture, lab	48	credit with grade	6
2	Programming Languages	lecture, lab	48	credit with grade	6
3	Numerical Methods	lecture, lab, tutorial	48	credit with grade	6
4	Software Engineering	lecture, lab, project	48	credit with grade	5
5	Soft Skills in the Work of an IT Specialist	lecture, tutorial	48	credit with grade	3
	SPECIALTY: CYBERSECURITY				
6	Computer Forensics	lecture, lab	48	credit with grade	4
	SPECIALTY: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING				
6	Advanced Data Analysis Methods	lecture, lab	48	credit with grade	4
	No. of hours and credits Speciality: Cybersecurity		288		30
	No. of hours and credits Speciality: Artificial Intelligence and Machine Learning		288		30

SEMESTER 6					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Machine Learning in Data Analysis	lecture, lab	48	credit with grade	4
2	Diploma Project 1	diploma seminar	24	credit with grade	3
4	Humanities and Social Sciences	lecture	24	credit with grade	3
5	Elective 2	lecture	24	credit with grade	4
6	Internship 1	internship	240	credit with grade	8
	SPECIALTY: CYBERSECURITY				
7	Security of Computer Systems	lecture, lab	48	credit with grade	4
8	Introduction to Penetration Testing	lecture, lab	48	credit with grade	4
	SPECIALTY: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING				
7	Cloud Computing	lecture, lab	48	credit with grade	4
8	Explainability of AI Models	lecture, lab	48	credit with grade	4
	No. of hours and credits Speciality: Cybersecurity		456		30
	No. of hours and credits Speciality: Artificial Intelligence and Machine Learning		456		30

SEMESTER 7					
No.	Course title	Course form	Hours Total	Credit type	ECTS credits
1	Diploma Project 2	diploma seminar	24	credit with grade	3
2	Internship 2	internship	540	credit with grade	18
	SPECIALTY: CYBERSECURITY				
3	Cryptographic Methods and Techniques	lecture, lab	48	credit with grade	3
4	Security of Web Applications	lecture, lab	48	credit with grade	3
5	Data Protection Systems	lecture, lab	48	credit with grade	3
	SPECIALTY: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING				
3	Computer Vision	lecture, lab	48	credit with grade	3
4	Natural Language Processing	lecture, lab	48	credit with grade	3
5	Selected Advanced Machine Learning Methods in Data Analysis	lecture, lab	48	credit with grade	3
	No. of hours and credits Speciality: Cybersecurity		708		30
	No. of hours and credits Speciality: Artificial Intelligence and Machine Learning		708		30

	Hours Total		ECTS credits
Total contact hours and credits Speciality: Cybersecurity	2664		210
Total contact hours and credits Speciality: Artificial Intelligence and Machine Learning	2664		210