



**Informatics in English – first-cycle study programme, full-time studies,
BEng**

Department	Faculty of Informatics
Field of study	Computer Science
Level of studies	First-cycle study programme
Profile of studies	Practical
Form of studies	Full-time studies
Duration of studies	7 semesters
Degree	Bachelor of Engineering
ECTS	210
The total number of hours	2340
Length of apprenticeships	6 months (24 weeks – 720 hours)

Lp.	Nazwa przedmiotu	Semestr	ECTS
1	OSH and Ergonomics	1	1
2	Busines and Enterprise in Practise	1	3
3	Physical Education	1	0
4	Basics of Logic and Set Theory	1	4





5	Basics of Mathematics	1	3
6	Computer Architecture	1	5
7	Operating Systems	1	4
8	Theoretical Foundations of Informatics	1	6
9	Modern Language of Choice I	2	2
10	Physical Education	2	0
11	Linear Algebra with Analytic Geometry	2	4
12	Mathematical Analysis I	2	6
13	C++	2	5
14	Raster Graphics	2	3
15	Computer Networks	2	3
16	Apprenticeships	2	6
17	Project (Introduction to the Specialty)	2	1
18	Modern Language of Choice II	3	2
19	Legal Aspects of Informatics	3	4
20	Mathematical Analysis II	3	4
21	Discreet Mathematics	3	2





22	Java	3	5
23	CCNA 1	3	4
24	Vector Graphics	3	3
25	Introduction to Software Engineering	3	3
26	Front-end Technologies	3	3
27	Modern Language of Choice III	4	2
28	Elements of Sociology and Social Communication	4	3
29	Physics I	4	4
30	Numerical Methods	4	5
31	Algorithms and Data Structures	4	5
32	Databases	4	3
33	Systems and Programming in the Cloud	4	3
34	Apprenticeships	4	6
35	Specialty Classes*	4	4
36	Modern Language of Choice IV	5	2
37	Physics II	5	3
38	Basics of Probabilistic Methods and Statistics	5	6
42	Containerization and Orchestration of IT Services	5	3





43	Artificial Intelligence	5	7
44	Team Project	5	5
45	Specialty Classes*	5	4
46	Basics of Electronics and Measuring	6	4
47	Introduction to Desktop Publishing	6	3
48	Neural Networks	6	5
49	English – Terminology in Computer Science	6	2
50	Diploma Workshop	6	4
51	Apprenticeships	6	4
52	Diploma Seminar	6	4
53	Specialty Classes*	6	4
54	Monograph Course	6	2
55	Professional and Ethical Responsibility of IT Professionals	7	2
56	Diploma Workshop	7	13
57	Diploma Seminar	7	13
58	Monograph Course	7	2





Specialties

Computer Network Administrator			
Class	No. of hours	No. of ECTS	Form of classes
TCP/IP Networks	30	3	lab
Switched Networks	30	3	lab
Network Systems Administration	30	3	lab
Network Diagnostics	30	3	lab
Network Services Security	30	3	lab
Internet of Things Technologies	30	3	lab
Computer Graphics			
Class	No. of hours	No. of ECTS	Form of classes
Advanced Vector Graphics	30	3	lab
Advanced Raster Graphics	30	3	lab
3D Graphics	30	3	lab
Interface Design	30	3	lab
Project 1 – Visual Identification	30	3	lab
Project 2 – Digital Imaging	30	3	lab





Website Design			
Class	No. of hours	No. of ECTS	Form of classes
Advanced Vector Graphics	30	3	lab
Mobile Interface Design	30	3	lab
Desktop Interface Design	30	3	lab
Advanced Interface Design	30	3	lab
Project 1 – Mobile Application	30	3	lab
Project 2 – Website Design	30	3	lab
Security of Computer Systems			
Class	No. of hours	No. of ECTS	Form of classes
Advanced Networking Methods	30	3	lab
Optimal Design of Teleinformatics Networks	30	3	lab
Management and Exploitation of IT Systems and Teleinformatics Networks	30	3	lab
Effective Protection of Networks and IT Systems from Attacks	30	3	lab
Network Validation	30	3	lab
Trends in IP Networks	30	3	lab
Programming			
Class	No. of	No. of	Form of





	hours	ECTS	classes
Frontend Technologies	30	3	lab
Backend Technologies	30	3	lab
Desktop Application Development	30	3	lab
Web Application Development	30	3	lab
Mobile Application Development	30	3	lab
Advanced Cloud Programming	30	3	lab
Databases			
Class	No. of hours	No. of ECTS	Form of classes
Advanced Relational Database Technologies	30	3	lab
Advanced Non-relational Database Technologies	30	3	lab
ORM – Object-Relational Mapping	30	3	lab
Data Warehouses and OLAP Systems	30	3	lab
Design and Implementation of Database Applications	30	3	lab
Data Visualization and Reporting	30	3	lab
Software Tester			
Class	No. of hours	No. of ECTS	Form of classes
Introduction to Software Testing	30	3	lab
Manual Testing	30	3	lab





Test Automation I	30	3	lab
Test Automation II	30	3	lab
Mobile Application Testing	30	3	lab
Web Application Testing	30	3	lab
Computer Games Programming			
Class	No. of hours	No. of ECTS	Form of classes
Computer Game Architecture and Programming Languages Game	30	3	lab
Programming in a Selected Environment	30	3	lab
Artificial Intelligence Programming in Computer Games	30	3	lab
Computer Animation and Visualization	30	3	lab
Games in Web and Mobile Environments	30	3	lab
New Technologies in Computer Games	30	3	lab
IT Project Management			
Class	No. of hours	No. of ECTS	Form of classes
Software Engineering in PM	30	3	lab
System and Application Architecture in PM	30	3	lab
Object Modeling in PM	30	3	lab
Planning Techniques in PM A	30	3	lab





Analytical Methods in PM	30	3	lab
Management Theories in PM	30	3	lab
Programming Mobile Devices			
Class	No. of hours	No. of ECTS	Form of classes
Introduction to Mobile Systems	30	3	lab
Android Programming	30	3	lab
IOS Programming	30	3	lab
Mobile Game Programming	30	3	lab
Web Programming for Mobile Devices	30	3	lab
Security and Testing in Mobile Systems	30	3	lab
Java EE Business Applications			
Class	No. of hours	No. of ECTS	Form of classes
Java Enterprise Edition	30	3	lab
Oracle Databases	30	3	lab
Object-Relational Mapping	30	3	lab
Enterprise Java Beans	30	3	lab
Business Application Programming	30	3	lab
Web Application Programming	30	3	lab





Logical Programming in Artificial Intelligence (specialty carried out in semesters V-VII)

Class	No. of hours	No. of ECTS	Form of classes
Logical Programming and Neural Networks	30	3	lab
Logical Programming in PROLOG Language	30	3	lab
Design of Artificial Intelligence Applications	30	3	lab
Programming in LISP	30	3	lab
Programming Languages for Controllers	30	3	lab
Programming in JESS Language	30	3	lab

