COMPUTER SCIENCE
FIRST DEGREE STUDIES

PROFILE: PRACTICAL | **DEGREE:** ENGINEER | **PROGRAM FOR 2023/2024 INTAKE:** 2023/2024

FULL-TIME STUDIES

3.5-year studies – 7 semesters

TOTAL NUMBER OF HOURS AND ECTS

ECTS credits: 210
No. of hours: 3275

LEGEND

FORM OF CREDIT: E – Exam, **ZO** – Graded credit, **Z** – Non-graded credit

COURSE TITLE	SEMESTER I FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Introduction Module: • Introduction to Vistula University • OHS training; • Library training; • Business etiquette; • Introduction to Intercultural Communication	2			60	ZO
Mathematic Analysis	6	30	30		E
Introduction to Programming	6	30	30		E
Introduction to Database	6	30	30		E
Electronics for IT	6	30	30		E
Foreign Language 1	4		30	60	ZO
	TOTAL: 30	TOTAL: 120	TOTAL: 150	TOTAL: 120	

COURSE TITLE	SEMESTER II FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Algebra	6	30	30		E
Object Oriented Programming	6	30	30		E
Introduction to Internet Technologies	6	30	30		E
Digital Technologies	6	30	30		E
Introduction to Management in IT	2	30	15		ZO
Foreign Language 2	4		30	60	E
	TOTAL: 30	TOTAL: 150	TOTAL: 165	TOTAL: 60	

COURSE TITLE	SEMESTER III FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Discrete Mathematics	5	30	30		E
Computer Networks	5	30	30		E
Architecture of Computers	5	30	30		E
Java Programming	5	30	30		ZO
Operating Systems	5	30	30		E
SET1:Security of computer systems-IT Elective I	5	30	30		E
SET2:Artificial Intelligence--IT Elective I		30	30		E
SET3:Introduction to computer Games-IT Elective I		30	30		E
SET4:IT project management-IT Elective I		30	30		ZO
Physical Education 1			30		Z
	TOTAL: 30	TOTAL: 270	TOTAL: 300	TOTAL:0	

COURSE TITLE	SEMESTER IV FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Probabilistic Methods and Statistics	5	30	30		E
Software Engineering	5	30	30		ZO
Algorithm and Complexity	5	30	30		ZO
Embedded Systems	5	30	30		E
SET1:Wireless ICT network-IT Elective II	5	30	30		E
SET1:Introduction to Cryptology in IT-IT Elective III	5	30	30		E
SET2:Big Data Management-IT Elective II	5	30	30		E
SET2:Application of Python language for Data Science and Artificial Intelligence-IT Elective III	5	30	30		E
SET3:Mobile device software design-IT Elective II	5	30	30		E
SET3:Introduction to mobile Games-IT Elective III	5	30	30		E
SET4:Processing and transmission of multimedia data-IT Elective II	5	30	30		E
SET4:Graphics and Human-Computer interacion-IT Elective III	5	30	30		ZO
Physical Education 2			30		Z
	TOTAL: 60	TOTAL: 360	TOTAL: 390	TOTAL: 0	

COURSE TITLE	SEMESTER V FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Engineering Diploma Project	5			60	ZO
Distributed Computer Systems	5	30	30		E
SET1:Introduction to Cloud Technologies-IT Elective IV	5	30	30		E
SET2:Introduction to Cloud Technologies-IT Elective IV	5	30	30		E
SET3:Team Project-IT Elective IV	5	30	30		E
SET4:Team Project-IT Elective IV	5	30	30		E
SPECIALIZATIONS TO CHOOSE					
SPECIALIZATION Database engineering					
Database design	5	30	30		
Database server administration	5	30	30		
Web service design for databases	5	30	30		
SPECIALIZATION Web technologies engineering					
Design of multi-tier Internet applications	5	30	30		
Advanced Internet technologies	5	30	30		
Corporate portal design	5	30	30		
SPECIALIZATION Cybersecurity and Computer networks engineering					
Switching and routing technologies for local area networks	5	30	30		
Network infrastructure management	5	30	30		
Wide area network technologies	5	30	30		
SPECIALIZATION Information systems engineering					
Design, development, and maintenance of application software	5	30	30		
Analysis and modeling of business processes	5	30	30		
Teamwork technologies	5	30	30		
SPECIALIZATION Computer Game Development Engineering					
Design methodology for computer games	5	30	30		
Designing computer games	5	30	30		
Prototyping game mechanics and managing a team assignment project	5	30	30		
SPECIALIZATION Artificial Intelligence in Engineering					
Artificial Intelligence in management	5	30	30		
Expert systems and their applications	5	30	30		
Fuzzy logic and its applications	5	30	30		
	TOTAL: 120	TOTAL: 690	TOTAL: 690	TOTAL: 60	

COURSE TITLE	SEMESTER VI FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Proseminar				5	Z
Engineering Diploma seminar I	2			50	ZO
INTERNSHIP					
Student internship	13		330		ZO
SPECIALIZATIONS TO CHOOSE					
SPECIALIZATION Database engineering					
Data warehouse design	5	30	30		
Advanced database design	5	30	30		
Methods of exploration and analysis of business data	5	30	30		
SPECIALIZATION Web technologies engineering					
Website design for multimedia	5	30	30		
Website design for mobile devices	5	30	30		
Techniques and tools for testing web and mobile applications	5	30	30		
SPECIALIZATION Cybersecurity and Computer networks engineering					
Security of systems and telecommunication networks	5	30	30		
Protocols and tools for network security	5	30	30		
Identification and analysis of threats in communication and electronic transactions	5	30	30		
SPECIALIZATION Information systems engineering					
Techniques and tools for the automation of software testing	5	30	30		
Tools and methods of software engineering	5	30	30		
Methods of estimating the effects of IT investments	5	30	30		
SPECIALIZATION Computer Game Development Engineering					
Designing and balancing complex games with dynamic gameplay	5	30	30		
Designing and programming a multiplayer for an assignment project	5	30	30		
Production and publication of computer games	5	30	30		
SPECIALIZATION Artificial Intelligence in Engineering					
Machine learning and its applications	5	30	30		
Neural networks and their applications	5	30	30		
Robotics	5	30	30		
	TOTAL: 105	**TOTAL: 540**	**TOTAL: 870**	**TOTAL: 55**	

COURSE TITLE	SEMESTER VII FULL-TIME STUDIES				
	ECTS	Lecture	Practical classes (eg. workshop)	Other	Form of credit
Engineering Diploma seminar II	5			125	ZO
INTERNSHIP					
Student internship	25		630		ZO
	TOTAL: 30	**TOTAL: 60**	**TOTAL: 630**	**TOTAL: 125**	