COURSE DESCRIPTION

Course code	full-time studies	
	part-time-studies	
Course name	**Programowanie obiektowe 2**	
Course name in English	**Object-oriented programming 2**	
Valid from academic year	**2023/24**	

PLACEMENT IN THE TEACHING PROGRAM

Field of study	Computer Science
Level of education	1st degree
Studies profile	General
Form and method of teaching classes	**Full-time and part-time studies**
Specialization	**All specializations**
Organizational unit responsible for the course	**Department of Computer Systems**
Course coordinator	**Dr inż. Mariusz Bedla**
Approved by	**Dean of the Faculty of Electrical Engineering, Automatic Control and Computer Science Roman Deniziak, KUT prof., DSc, PhD**

GENERAL CHARACTERISTIC OF THE COURSE

Course affiliation		**Major subject**
Course status		**Obligatory**
Language		**English**
Semester	full-time studies	**III**
	part-time-studies	**III**
Requirements		**Algorithms and data structures Fundamentals of Programming 1 Object-oriented programming 1**
Exam (YES/NO)		**YES**
ECTS		**6**

Course form		**lecture**	**classes**	**laboratory**	**project**	**other**
Hours per semester	full-time studies	**30**	**0**	**30**	**15**	**0**
	part-time-studies	**18**	**0**	**18**	**9**	**0**

LEARNING RESULTS

Category	Result Symbol	Learning Results	References to the field of study results
Knowledge	W01	Student knows and understands basics of the object-oriented programming paradigm.	INF1_W09
	W02	Student knows and understands programming techniques and constructions related to object-oriented programming.	INF1_W09
Skills	U01	Students can design, implement, test and debug object-oriented programs.	INF1_W09
	U02	Student can assess the suitability of different paradigms for solving various types of problems.	INF1_W09
Social competence	K01	Student is ready to use his knowledge in professional life.	INF1_K01, INF1_K02

COURSE CONTENT

Course Form	Content
lecture	• Programming constructs in object-oriented programming • Overview of the paradigm elements and principles of object-oriented programming • Transient storage of objects • Persistent storage of objects • Concurrent access to objects • Implementation of a multi-platform graphical interface in object-oriented applications • Network communication in object-oriented programming • Implementation of typical programming tasks with the use of object-oriented programming
laboratory	• Programming constructs in object-oriented programming • Overview of the paradigm elements and principles of object-oriented programming • Transient storage of objects • Persistent storage of objects • Concurrent access to objects • Implementation of a multi-platform graphical interface in object-oriented applications • Network communication in object-oriented programming • Implementation of typical programming tasks with the use of object-oriented programming
project	The project tasks includes the creation of an object-oriented application.

LEARNING RESULTS VERIFICATION METHODS

Result Symbol	Learning results verification methods					
	Oral Exam	Written Exam	Midterm	Project	Report	Other
W01		X				
W02		X				
U01			X	X		X
U02				X		
K01				X		

ASSESSMENT FORMS AND CRITERIA

Course Form	Assessment Form	Assessment Criteria
lecture	Passing grade	The student should have at least 50% of points at the final test.
laboratory	Passing grade	The student should obtain at least 50% points from laboratory tasks and tests.
project	Passing grade	The student should obtain at least 50% points from project tasks.

STUDENT'S VOLUME OF WORK

ECTS Balance												
No.	Activity Type	Student Involvement										Unit
		full-time studies					part-time-studies					
1.	Participation in classes according to the schedule	Lec	C	Lab	P	S	Lec	C	Lab	P	S	h
		30	0	30	15	0	18	0	18	9	0	
2.	Other (consultations, exams)	2	0	2	1	0	2	0	2	1	0	h
3.	**Total with the direct assist of an academic teacher**	**80**					**50**					h
4.	**Number of ECTS, that students obtains with the direct assist of an academic teacher**	**3.2**					**2**					ECTS
5.	**Hours of unassisted student work**	**70**					**100**					h
6.	**Number of ECTS that student obtains working unassisted**	**2.8**					**4**					ECTS
7.	**Practical classes volume of work**	**45**					**27**					h
8.	**Number of ECTS obtained by student at practical classes**	**1.8**					**1.08**					ECTS
9.	**Total student's volume of work expressed in hours**	**150**					**150**					h
10.	**ECTS**	**6**										ECTS

BIBLIOGRAPHY

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7. Learn JavaFX 17: Building User Experience and Interfaces with Java 2nd ed. Edition, Kishori Sharan, Peter Späth, Apress, 2022
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10. Head First Design Patterns: A Brain-Friendly Guide, Eric Freeman, Bert Bates, Kathy Sierra, Elisabeth Robson, O'Reilly Media, 2004
11. Object-Oriented Software Engineering Using UML, Patterns, and Java 3rd Edition, Bruegge, Allen Dutoit, Pearson, 2009
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