



Subject card

Subject name and code	Object-oriented Programming Languages, PG_00047824						
Field of study	Informatics						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
Education level	first-cycle studies	Subject group			Optional subject group		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			6.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Moszyński					
	Teachers	dr hab. inż. Marek Moszyński dr inż. Andrzej Chybicki					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0	0.0	45
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Języki programowania obiektowego 2021 - Moodle ID: 19456 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19456">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19456</a>						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		15.0		90.0	150
Subject objectives	Theory and practice on object oriented programming						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	The student gets acquainted with the basics of object oriented programming on the example of four object oriented programming languages	[SW1] Assessment of factual knowledge
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	The student acquires practical skills by performing laboratory tasks in specific object-oriented programming languages	[SU1] Assessment of task fulfilment
	[K6_U41] can produce, test or evaluate software using modern programming platforms, tools, languages and paradigms of different levels, as well as use software packages supporting scientific and research processes as well as business decision-making processes and teamwork	The student acquires practical skills by performing sample tasks in several object-oriented programming languages	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
Subject contents	<ol style="list-style-type: none"> <li>1. Programming paradigms with particular emphasis on the object-oriented paradigm</li> <li>2. Implementation of encapsulation, inheritance, abstraction and polymorphism in C++</li> <li>3. Specificity of object-oriented implementation in C++</li> <li>4. Java language and its comparison with the C++ language</li> <li>5. The C# language and as the successor to the C language and comparison with the Java language</li> <li>6. Python as a representative of script-oriented object-oriented programming languages</li> </ol>		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	55.0%	60.0%
	Midterm colloquium	55.0%	40.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Bjarne Stroustrup, The C++ Programming Language</li> <li>2. Bruce Eckel, Thinking in Java</li> <li>3. Andy Harris, Microsoft C# for absolute beginner</li> <li>4. Mark Lutz, Programming Python</li> </ol>	
	Supplementary literature	1. John Hunt, Smalltalk and Object Orientation 2. Bruce Eckel, Thinking in C++	
	eResources addresses	Języki programowania obiektowego 2021 - Moodle ID: 19456 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=19456">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=19456</a>	
Example issues/ example questions/ tasks being completed	<p>Sample question: In what direction is C++ developing?</p> <p>Sample task: Implementation of a simple object-oriented program using object-oriented programming paradigms in various programming languages.</p>		
Work placement	Not applicable		