

## Subject card

Subject name and code	Object-oriented Programming, PG_00047644								
Field of study	Informatics								
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023				
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study			
					Subject group related to scientific research in the field of study				
Mode of study	Full-time studies		Mode of delivery			at the	at the university		
Year of study	1		Language of instruction			Polish	Polish		
Semester of study	2		ECTS credits			4.0	4.0		
Learning profile	general academic profile Ass		Assessme	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 inż. Andrzej Chybicki						
			dr hab. inż. Marek Moszyński						
			dr hab. Marcin Ciecholewski						
			dr inż. Emilia Lubecka						
			mgr inż. Tomasz Bieliński						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	15.0	0.0	10.0	30.0		0.0	55	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation i classes including		Participation in consultation hours		Self-study		SUM	
	Number of study hours	55		10.0		35.0		100	
Subject objectives	Theory and practice	on object orien	ted programmi	ng					

Data wydruku: 28.04.2024 12:02 Strona 1 z 3

The student acquires practical students acquires practical students enforces and search programming platforms, looks different levels, as will as use software packages supporting accentific and reasers processes making processes and tearnwood.    FOR, OW49   Fronse and tearnwood and understands, to an advanced extent. the principles methods and understands, to an advanced extent. the principles of compute software development or programming devices or or programming devices or or programming devices or or programming devices or or programming methods and techniques as will as a seed and apply appropriate programming achievance or controllers using microprocessors systems specific to the field of study, and organization or electrollers and techniques as will as a seed and apply appropriate programming methods and techniques as will as seed and apply appropriate programming and programming acquires practical study appropriate programming methods and techniques as will as seeds and apply appropriate programming an application of programming devices or controllers using microprocessors systems specific to the field of study.    Subject contents   1. Software programming paradigms including object oriented approach programming and programming analysies.   1. Software programming paradigms including object oriented approach programming paradigms including object oriented approach programming analysies.   1. Software programming paradigms including object oriented approach programming paradigms including object oriented approach programming analysies.   1. Software programming paradigms including object oriented approach programming analysies.   1. Software programming paradigms including object oriented approach   2. Encapsulation, inheritance, abstraction and polymorphism in C++ language   3. Specific features of C++ object-orientation and cortents   1. Software programming paradigms including object oriented approach   1. Software programming paradigms including object oriented approach   1. Software programming ob	Learning outcomes	Course outcome	Subject outcome Method of verification				
understands, to an advanced settent, the principles, methods and techniques of programming orgamming in the example of and techniques of programming programming in the example of tour object-oriented programming controllers using microprocessors or programmable elements or systems specific to the field of systems using computers or such devices  IKE_U04] can apply knowledge of programming languages  IKE_U04] can apply knowledge of programming languages  IKE_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming software development or programming elements or systems specific to the field of subject contents  1. Software programming paradigms including object oriented approach controllers using microprocessors or programming paradigms including object oriented approach systems specific to the field of subject oriented supplements or systems specific to the field of subject oriented approach as specific features of C++ object-orientation  1. Software programming paradigms including object oriented approach systems specific to the field of subject oriented approach as specific features of C++ object-orientation  2. Encapsulation, inheritance, abstraction and polymorphism in C++ language  3. Specific features of C++ object-oriented languages  5. C# language as successor of C++ and Java languages  6. Python as a scripting object oriented language  Prerequisites  Knowledge on non-object oriented language i.e. C language.  Subject oriented language i.e. C language.  Recommended reading  Basic Iterature  Basic Iterature  Basic Iterature  By Basic I		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 decisionmaking processes and teamwork	skills by performing sample tasks in several object-oriented programming languages.	fulfilment			
programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or programming paradigms including object oriented approach    Subject contents		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	the basics of object-oriented programming on the example of four object-oriented programming				
2. Encapsulation, inheritance, abstraction and polymorphism in C++ language  3. Specific features of C++ obiect-orientation  4. Java language and its comparison to C++ language  5. C# language as successor of C++ and Java languages  6. Python as a scripting object oriented language  Knowledge on non-object oriented language  Assessment methods and criteria  Subject passing criteria  Passing threshold  Percentage of the final grade  lecture  60.0%  34.0%  project  laboratory  60.0%  33.0%  Recommended reading  Basic literature  Bijame Strastroup - The C++ programming language  Bruce Eckel - Thinking in Java  Andy Harris - Macrosoft C# for absolute beginner  Mark Lutz - Programming Python  Supplementary literature  Supplementary literature  Frogramowanie Object Orientation  Adresy na platformie eNauczanie:  Programowanie Objectoue - 2023 - Moodle ID: 25830		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	skills by performing laboratory tasks in specific object-oriented				
3. Specific features of C++ obiect-orientation  4. Java language and its comparison to C++ language  5. C# language as succesor of C++ and Java languages  6. Python as a scripting object oriented language  Knowledge on non-object oriented language i.e. C language.  Assessment methods and criteria  Subject passing criteria Passing threshold Percentage of the final grade lecture 60.0% 34.0% project 60.0% 33.0% laboratory 60.0% 33.0%  Recommended reading  Basic literature  Bjarne Strastroup - The C++ programming language  Bruce Eckel - Thinking in Java  Andy Harris - Macrosoft C# for absolute beginner  Mark Lutz - Programming Python  Supplementary literature John Hunt - Smalltalk and Object Orientation eResources addresses  Adresy na platformie eNauczanie:  Programowanie Objektowe - 2023 - Moodle ID: 25830	Subject contents	Software programming paradigms	s including object oriented approach				
Assessment methods and criteria    Subject passing criteria		<ul> <li>3. Specific features of C++ object-orientation</li> <li>4. Java language and its comparison to C++ language</li> <li>5. C# language as successor of C++ and Java languages</li> </ul>					
Assessment methods and criteria    Subject passing criteria		Knowledge on non-object oriented language i.e. C language.					
and criteria    lecture	•	Cubicat acceptant 19.1	Descion formal 11	Demander f. H f.			
Project   Solution   S			-				
Recommended reading  Basic literature  Bijarne Strastroup - The C++ programming language  Bruce Eckel - Thinking in Java  Andy Harris - Macrosoft C# for absolute beginner  Mark Lutz - Programming Python  Supplementary literature  eResources addresses  John Hunt - Smalltalk and Object Orientation  eResources addresses  Addresy na platformie eNauczanie:  Programowanie Obiektowe - 2023 - Moodle ID: 25830							
Recommended reading  Basic literature  Bijarne Strastroup - The C++ programming language  Bruce Eckel - Thinking in Java  Andy Harris - Macrosoft C# for absolute beginner  Mark Lutz - Programming Python  Supplementary literature  Programowanie Object Orientation  Adresy na platformie eNauczanie:  Programowanie Object Oriented ID: 25830							
Bruce Eckel - Thinking in Java  Andy Harris - Macrosoft C# for absolute beginner  Mark Lutz - Programming Python  Supplementary literature  eResources addresses  John Hunt - Smalltalk and Object Orientation  eResources addresses  Adresy na platformie eNauczanie:  Programowanie Obiektowe - 2023 - Moodle ID: 25830	Recommended reading	<u> </u>					
eResources addresses  Adresy na platformie eNauczanie:  Programowanie Obiektowe - 2023 - Moodle ID: 25830			Andy Harris - Macrosoft C# for absolute beginner				
eResources addresses  Adresy na platformie eNauczanie:  Programowanie Obiektowe - 2023 - Moodle ID: 25830		Supplementary literature John Hunt - Smalltalk and Object Orientation					
		· · · · · · · · · · · · · · · · · · ·	•				

Data wydruku: 28.04.2024 12:02 Strona 2 z 3

Example issues/ example questions/ tasks being completed	Sample question: What are the trends of C++ evolution?
	Sample task: implementation of simple object oriented software module using object oriented paradigms in different languages
Work placement	Not applicable

Data wydruku: 28.04.2024 12:02 Strona 3 z 3