GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Object-oriented programming languages III, PG_00020777		
Field of study	Technical Physics		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	English
Semester of study	5	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Instytut Fizyki i Informatyki Stosowanej -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Jan Franz	
	Teachers	dr hab. Jan Franz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	60.0	0.0	0.0	75

E-learning hours included: 0.0

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	75	15.0	60.0	150

Subject objectives

- The students will know about the principle of object oriented programming and how they are realized in Java.
- The students will be able to write object oriented programs using the Java programming language.
- The students will be able to apply concepts, for example exceptions, generics and collections.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U03	The students will be able to write object oriented programs using the Java programming language. he students will be able to apply concepts, for example exceptions, generics and collections.	[SU1] Assessment of task fulfilment
K6_W05	The students will know about the principle of object oriented programming and how they are realized in Java. The students can make usage of the IDE.	[SW1] Assessment of factual knowledge

Subject contents

1. The Java ecosystem.
2. A first look at classes and objects in Java.
3. Objects, primitive types, wrapper classes and arrays.
4. Inheritance and interfaces.
5. Introduction to the collections framework.
6. Design patterns.
7. Generic classes and methods.
8. Collections.
9. Additional topics on object oriented design and re-factoring.
10. Introduction to Lambda expressions.
11. Application of Lambda expressions.
12. Exceptions.
13. Some useful Java libraries.
14. Summary.
15. Advanced topics.

Prerequisites and co-requisites

Object-oriented programming languages 1 and 2

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lab credit	50.0%	50.0%
	final exam	50.0%	50.0%
Recommended reading	Basic literature	1. Joshua Bloch, Effective Java, 3rd Edition, Addison-Wesley, 2017 2. Raoul-Gabriel Urma, Mario Fusco, Alan Mycroft, Modern Java in Action, Manning Publications, 2018	
	Supplementary literature	1. Cay S. Horstmann, Core Java Volume 1 Fundamentals. 11Th edition, Prentice Hall, 2018 2. Cay S. Horstmann, Core Java Volume 2 Advanced Features. 11Th edition, Prentice Hall, 2018 3. Herbert Schildt, Java: The Complete Reference. 11Th edition, McGraw-Hill, 2019	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	The computer code of a small class is shown. The class has a method for dividing two numbers. The division by zero is not safe and can cause a program crash. Please write a class DivideByZeroException, which extends the class Exception. Please modify the method so, that it can throw a DivideByZeroException.		
Work placement	Not applicable		