POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

Programming II

Course

Field of study	Year/Semester
Mathematics in Technology	2/4
Area of study (specialization)	Profile of study
	general academic
Level of study	Course offered in
First-cycle studies	Polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	30	
Tutorials	Projects/seminars	

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

Karol Gajda, Ph.D.,Eng.

Faculty of Control, Robotics and Electrical Engineering

Institute of Mathematics

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tel. 61 665 2805

Responsible for the course/lecturer:

Prerequisites

Knowledge and skills from the Programming I and Information Technology courses. Computer skills, including programming. The ability to effectively self-educate. Knowing the limitations of your own knowledge and understanding the need for further education.

Course objective

Acquiring object-oriented programming skills.

Course-related learning outcomes

Knowledge

1. has extended and deepened knowledge of various branches of higher mathematics and detailed knowledge of the application of mathematical methods and tools in technical sciences,

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2. has a structured and theoretical knowledge of computer science, knows at least one software package or programming language.

Skills

1. is able to construct an algorithm for solving a simple engineering task and implement and test it in a selected programming environment,

2.can use devices in accordance with the general requirements and technical documentation, can apply the principles of occupational health and safety,

3. can work individually and in a team; knows how to estimate the time needed to complete the commissioned task; is able to develop and implement a work schedule that ensures meeting the deadline.

Social competences

1. is aware of the level of his / her knowledge in relation to the research conducted in science and technology.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired during the lecture is verified by a 45-minute test consisting of variously scored questions. Passing issues on the basis of which the questions are developed will be given to students during the lecture preceding the colloquium, or sent by e-mail using the university's e-mail system.

The skills acquired during the laboratory classes are verified on the basis of the developed projects or final test.

Programme content

Objects and Classes

Static Fields and Methods

Method Parameters

Object Construction

Packages

Documentation Comments

Inheritance

Polymorphism

Projectors

Abstract classes

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Object Class

Array Lists

Object Wrappers

Interfaces

Exceptions

Teaching methods

1) lectures:

- lecture with presentation supplemented with examples given on the board,

- a lecture conducted in an interactive manner with formulating questions to a group of students or to specific students indicated,

- students' activity during classes is taken into account when issuing the final mark,

- during the lecture initiating the discussion,

- theory presented in close connection with practice,

- theory presented in connection with the current knowledge of students,

- presenting a new topic preceded by a reminder of related content known to students in other subjects.

2) laboratory:

- detailed reviewing of reports by the laboratory chair and discussions on comments,

- using tools that enable students to perform tasks at home (eg open source software),

- demonstrations,

- work in teams,

- computational experiments.

Bibliography

Basic

1. G. Cornell, C. Horstmann, Core Java Volume I - Fundamentals (11th Edition),

2. R. Sedgewick, K. Wayne, Introduction to Programming in Java: An Interdisciplinary Approach (2nd Edition).

Additional

http://wazniak.mimuw.edu.pl/index.php?title=Programowanie_obiektowe

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Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for laboratory classes, preparation for tests) [1]	55	2,0

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[1] delete or add other activities as appropriate