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
Introduction to programming

Course

Field of study	Year/Semester
Mathematics in Technology	1/1
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:

dr inż. Barbara Szyszka

email: barbara.szyszka@put.poznan.pl

tel. 61665 2763

Faculty of Control, Robotics and Electrical Engineering

ul. Piotrowo 3A 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Basic knowledge of high school.
Computer skills. The ability to effectively self-education in a field related to the chosen field of study.
Knowledge of the limits of their knowledge and understanding of the need for further education.
Ability to obtain information from indicated sources.

Course objective

Familiarize students with the concepts of algorithm and program/script. Teach, how to design simple algorithms, write them down and prove their correctness.

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Course-related learning outcomes

Knowledge

1. The student has knowledge about the use of mathematical tools.

2. The student knows the basics of computational and programming techniques.

Skills

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

2. The student is able to operate the devices in accordance with general requirements and knows how to apply the principles of health and safety at work in a computer laboratory.

Social competences

1. The student is aware of the level of his knowledge.

2. The student is aware of deepening and broadening the knowledge of programming.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures:

* assessment of knowledge and skills demonstrated on the test.

* control of perception during lectures.

Laboratory exercises:

* assessment of student preparation for laboratory classes .

* assessment of skills related to the implementation of laboratory exercises and tasks.

* assessment of skills related to the implementation of project task.

* assessment of teamwork skills.

Programme content

Update 31.08.2021
Computer arithmetic
Introduction to work in the Matlab environment
Syntax and semantics of expressions
Number representations
Instructions: if, for, while, switch
Graphics
Correctness of programs / scripts
Functions, local and global variables
Introduction to algorithms

Teaching methods

Lecture with multimedia presentation supplemented by examples given on the blackboard.
Lecture conducted in an interactive manner with the formulation of student questions.
The initiating of discussion during the lecture.

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Theory presented in connection with practice.

Theory presented in connection with the current knowledge of students.

Taking into consideration various aspects of the presented issues.

Presenting a new topic preceded by a reminder of related content known to students from other subjects;

Laboratories:

Laboratories supplemented with multimedia presentations.

Detailed review of the reports by the teacher and discussion of the comments.

Computational experiments.

Bibliography

Basic

1. Ćwiczenia z Matlab: przykłady i zadania; Anna Kamińska, Beata Pańczyk, Warszawa : Wydaw. MIKOM, 2002.

2. MATLAB : środowisko obliczeń naukowo-technicznych; Jerzy Brzózka, Lech Dorobczyński, Warszawa : Wydaw. MIKOM, 2005.

Additional

1. MATLAB : dla naukowców i inżynierów; Rudra Pratap, Warszawa : Wydawnictwo Naukowe PWN, 2015.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	50	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) [1]	50	2,0

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[1] delete or add other activities as appropriate