STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Introduction to programming**		Code **1010341711010349406**	
Field of study **Mathematics in Technology**	Profile of study (general academic, practical) **general academic**		Year /Semester **1 / 1**
Elective path/specialty **-**	Subject offered in: **Polish**		Course (compulsory, elective) **obligatory**
Cycle of study: **First-cycle studies** **(Polish Qualifications Framework level six)**		Form of study (full-time,part-time) **full-time**	

No. of hours				No. of credits **4**
Lecture: **30** Classes: **-** Laboratory: **30** Project/seminars: **-**				

Status of the course in the study program (Basic, major, other) **Basic**	(university-wide, from another field) **university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
The sciences	**4 100%**
Mathematical sciences	**4 100%**

Responsible for subject / lecturer:

dr inż. Barbara Szyszka
email: barbara.szyszka@put.poznan.pl
tel. 61665 2763
Faculty of Electrical Engineering
ul. Piotrowo 3A 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of high school [PQF 4]
2	**Skills**	Computer skills. The ability to effectively self-education in a field related to the chosen field of study. [PQF 4]
3	**Social competencies**	Knowledge of the limits of their knowledge and understanding of the need for further education. [PQF 4]

Assumptions and objectives of the course:

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

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. The student has knowledge about the use of mathematical tools [K_W01 (P6S_WG)]
2. The student knows the basics of computational and programming techniques [K_W06 (P6S_WG)]

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 [K_U04 (P6S_UW)]
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 [K_U09 (P6S_UW)]

Social competencies:

1. The student is aware of the level of his knowledge [K_K01 (P6S_KK)]
2. The student is aware of deepening and broadening the knowledge of programming [K_K02 (P6S_KK)]

Assessment methods of study outcomes

- assessment of knowledge gained during the lecture
- assessment of skills related to the implementation of project tasks
- assessment of student preparation for laboratory classes and assessment of skills related to the implementation of laboratory exercises
- assessment of teamwork skills

Course description

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

Applied learning methods:
lectures:

Lecture with multimedia presentation supplemented by examples given on the board,

Lecture conducted in an interactive manner with the formulation of student questions,

Student activity is taken into account during the course of the assessment,

The initiating of discussion during the lecture,

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,

Work in teams,

Computational experiments.

Update 2018.

Basic bibliography:

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 bibliography:

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

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Participation in laboratory classes	30
3. participation in lecture consultations	2
4. participation in consultations regarding laboratories	2
5. preparation for laboratory classes and for completion of laboratories	38
6. Preparation for passing the lecture	12

Student's workload

Source of workload	hours	ECTS
Total workload	114	4
Contact hours	64	2
Practical activities	70	3

http://www.put.poznan.pl/