

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Introduction to computer-aided computations		Code 1010341711010349407
Field of study Mathematics in technology	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: - Laboratory: 15 Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 2 100%
Responsible for subject / lecturer: dr Marian Dondajewski email: marian.dondajewski@put.poznan.pl tel. 61 665-2805 FACULTY OF ELECTRICAL ENGINEERING ul. Piotrowo 3A, 60-965 Poznań tel.: 61 665-2320		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of mathematics of secondary school
2	Skills	He knows the basics of computer. Can the simple problems to formulate ways to solve them by describing the various stages of the implementation of these methods.
3	Social competencies	It has a willingness to cooperate within the team. Understands the role of the process of computerization. Understands the need for lifelong learning.
Assumptions and objectives of the course: To be familiar with the capabilities of the Math package (MATLAB) and its use in solving mathematical problems. To acquaint students with classical computational algorithms. Presentation of typical data structures. Develop skills to construct algorithms		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. He knows the basics of programming and can use the package supporting technical and scientific calculations (MATLAB) . - [K_W06]		
2. Knows the basic data structures and algorithms of classical computing . - [K_W05]		
Skills:		
1. Knows how to construct a simple calculation algorithms by selecting appropriate data structure. - [K_U08]		
2. Able to solve mathematical problems using the software package supporting math . - [K_U20]		
Social competencies:		
1. Understands the need for lifelong learning. - [K_K01]		
2. Able to use the technical documentation and search for the information you need in the literature (also in foreign languages). - [K_K05]		
Assessment methods of study outcomes		

<p>Laboratory: ? Test and favoring knowledge necessary to perform the tasks of laboratory ? Continuous evaluation for each course - rewarding gain skills they met the principles and methods ? Assess the knowledge and skills associated with the implementation of the tasks your practice, the assessment report performed exercise. Get extra points for the activity in the classroom, and in particular for: ? Propose to discuss further aspects of the subject; ? The effectiveness of the application of the knowledge gained during solving the given problem; ? Subsequent to the improvement of teaching materials; ? Developed aesthetic diligence reports and jobs - in the self-study.</p>		
Course description		
<p>Ways to write numbers in a computer and the properties of floating point operations . Basic instructions and data structures in MATLAB. Examples of classical algorithms and their analysis. Opportunities mathematical package MATLAB. Graphical presentation of the results of calculations.</p>		
Basic bibliography:		
<p>1. Brzóska J., Dobraczyński L.: MATLAB - Środowisko obliczeń naukowo-technicznych. MIKOM, Warszawa, 2008 2. Mrozek B., Mrozek Z.; MATLAB i Simulink Poradnik użytkownika. Wydanie II, Helion, Wrocław, 2004.</p>		
Additional bibliography:		
<p>1. praca zbiorowa pod redakcją Ewy Magnuckiej-Blandzi: Metody numeryczne w MatLabie ? Wybrane zagadnienia. Wydawnictwo Politechniki Poznańskiej, Poznań, 2013.</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in class lecture	15	
2. Participation in laboratory classes	15	
3. Participation in the consultations related to the implementation of the education process , in particular laboratory / project	2 4	
4. Completion (within own work) reports on laboratory exercises	10	
5. Write a program / programs testing and verification (time outside of the classroom laboratory)	2	
6. Preparation for exercises / laboratory	2	
7. Preparation for tests	8	
8. Familiarization with the indicated literature / teaching materials		
Student's workload		
Source of workload	hours	ECTS
Total workload	58	2
Contact hours	34	1
Practical activities	27	1