

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject The elements of computer science techniques		Code 1010331211010335032
Field of study Automatic Control and Robotics	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: - Project/seminars: 15		No. of credits 3
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 Technical sciences		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: dr inż. Piotr Kaczmarek email: piotr.kaczmarek@put.poznan.pl tel. +48616652886 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has a basic knowledge resulting from upper
2	Skills	Student is able to obtain information from the literature , databases, and other sources; has the skills of self-education in order to improve and update professional competence . He speaks English at a level sufficient to B2 communication , as well as reading comprehension cards catalog , application notes , manuals, equipment and descriptions of tools.
3	Social competencies	The student understands and knows the need for continuous training opportunities - improving professional skills , personal and social , can inspire and organize the learning of others.
Assumptions and objectives of the course: The aim of the course is to familiarize students with basic computer tools used in the later part of the learning process for the preparation and presentation of technical documentation (LaTeX) , documenting the program code (doxygen) , calculations and numerical simulation (MATLAB) and version management of projects and the basics of group work (SVN) presentation capabilities and support Linux		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. The student has an elementary knowledge of the operation and use of tools for rapid prototyping and design , simulation and visualization systems , and automation and robotics and mechanical design of the project record . - [K_W14]		
Skills: 1. Student is able to compile the results and give a presentation on the implementation of engineering tasks . - [K_U10] 2. The student is able to work individually and in a team; is able to estimate the time needed for the commissioned work; able to develop and implement a work schedule to ensure deadlines - [K_U02]		
Social competencies: 1. The student has awareness of the importance and understand non-technical aspects and effects of engineering activities including its impact on the environment and the resulting responsibility for the decisions - [K_K02]		
Assessment methods of study outcomes		

Lecture : credit practical skills such as checking the tools discussed in the lecture		
Project: Preparation of documents and presentations in LaTeX with the data generated from other tools (MATLAB , doxygen)		
Course description		
Lecture: The package MATLAB : basics of scripting language , basic functions , matrix operations , presentation of results , export and import data , the base of symbolic computation , presentation package Simulink . Doxygen : rules for the preparation of documentation programistycznej , commenting code. SVN : version management of the project and the basics of working in a group. LaTeX : Document preparation , the creation of bibliographies , mathematical formulas , embedding graphics , tables , prepare a presentation in the package Beamer .		
Project: It is practical to use the content presented in the lecture , by solving a problem and preparation of documentation and presentation of programming		
Basic bibliography:		
1. Documentation for MATLAB environment: http://www.mathworks.com		
2. Documentation for LaTeX package: www.ctan.org/tex-archive/info/lshort/english/		
3. Documentation for doxygen: http://www.doxygen.org		
4. e-learning platform https://moodle-c.cie.put.poznan.pl		
Additional bibliography:		
1. P. Kaczmarek, D. Belter :podstawy programowania C i C++? - skrypt, Wydawnictwo Politechniki Poznańskiej 2011		
2. Rober Love, ?Linux- programowanie systemowe? - Helion 2009		
Result of average student's workload		
Activity	Time (working hours)	
1. Lecture	15	
2. Participation in project activities	15	
3. Preparation for the exercise and performance of reports	30	
4. Preparation for exam	5	
5. Consultation	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	70	3
Contact hours	35	1
Practical activities	35	1