

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Computer aided design in industrial automation		Code 1010335121010335173
Field of study Control Engineering and Robotics	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty -	Subject offered in: polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 15 Classes: - Laboratory: - Project/seminars: 15		No. of credits 4
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 %) 4 100%
Responsible for subject / lecturer: dr inż. Konrad Urbański email: konrad.urbanski@put.poznan.pl tel. 61 6652 810 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K_W04: He has specialized knowledge in the field of microprocessor systems for steering and control and measurement systems. K_W08: He has extended knowledge of modeling and identification of linear and nonlinear systems.
2	Skills	K_U01: Can critical use of information literature, databases, and other sources, has a self-learning skills in order to improve and update professional skills. K_U04: Can set models of complex systems and processes, and use them for the purposes of analysis and design of control systems and robotics.
3	Social competencies	K_K01: Understands and knows the need for continuous training opportunities - improving professional skills, personal and social, can inspire and organize the learning process of others.
Assumptions and objectives of the course: To familiarize students with the methods of solving complex problems, and computational simulation using programming languages. Purchase of application development skills. Familiarize with programs supporting complex calculations.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. He has knowledge of the methods of analysis and design of control systems - [K_W02+++]		
Skills:		
1. Can construct a solution algorithm for complex engineering tasks and simple research problem and to implement, test and run it in the selected programming environment for selected operating systems. - [K_U07+++]		
Social competencies:		
1. He can think and act in a creative and enterprising. - [K_K05++]		
Assessment methods of study outcomes		
Lecture: credit project: design tasks		
Course description		

Introduction: examples of applications of intelligent computational methods, the creation of knowledge bases and the construction quality criteria.
 RWC algorithm: the use of an algorithm RWC (Random Weight Change) to solve problems based on quality indicators developed, creating the rule base.
 Support applications: the use of technical programming languages??, create your own applications in multi-threaded environment, the use of programming environments, and specialized programs for solving simulation and perform advanced calculations. Systems supporting the development of research results.

Basic bibliography:

1. MATLAB. Ćwiczenia, Czajka M., Helion, Gliwice, 2005
2. Mathcad. Ćwiczenia. Wydanie II, Jacek Pietraszek, Helion 2008

Additional bibliography:

1. Język ANSI C, Kernighan B.W., Ritchie D.M., WNT, Warszawa, 2004
2. MATLAB The Language of Technical Computing, The Math Works, Inc., (up 2008)

Result of average student's workload

Activity	Time (working hours)	
Student's workload		
Source of workload	hours	ECTS
Total workload	100	4
Contact hours	27	1
Practical activities	35	1