DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR/TEAM/ DECLARING/CONDUCTING COURSE: **Artur Wymysłowski**
DEPARTMENT **Z7/W12**

COURSE CARD

Course name in Polish: Systemy mechatroniczne
Course name in English: Mechatronic systems
Course language: Polish
University-wide general course type*:
1) basic science course (mathematics, physics, chemistry, computer science or other) : **other**

Subject code: AEQ100150W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	15			15
Grading	Exam	Exam	Oral presentation	Presentation + project

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic and advanced knoeledge on mathematics and physics
2. Interdyscyplinary knowledge on mechanics, electronics and computer engineering

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COURSE OBJECTIVES

C1: Theoretical and practical studies on mechatronic systems and their application in automation and robotics
C2: Theoretical and practical studies on methods, techniques and tools concerning prototyping of mechatronic systems
C3: Gaining knowledge and skills on using advanced numerical tools for prototyping mechatronic systems (eg Autodesk Inventor, Autodesk Fusion, Autodesk EAGLE, LTspice, etc.)

PROGRAM CONTENTS

Form of classes – lecture (Lec)		Number of hours
Lec1	Introduction to mechatronic systems and individual projects	1
Lec2	Electronics and informatics	2
Lec3	Mechanics and material engineering	2
Lec4	Control systems	

Lec5	Analog, digital and mixed electronics	
Lec6	Software engineering	
Lec7	Automatics and robotics	
	Total hours:	**15**

Form of classes – foreign language course (Lng)		Number of hours
Lng1		
Lng2		
Lng3		
..		
	Total hours:	

Form of classes – seminar (Sem)		Number of hours
Sem1		
Sem2		
Sem3		
…		
	Total hours:	

Form of classes – mixed forms (mix)		Number of hours
Mix1	Numerical prototyping of mechatronic systems – assigment of individual projects	1
Mix2	Numerical prototyping of electronic systems	2
Mix3	Numerical prototyping of mechanical systems	2
Mix4	Sensors and detectors	2
Mix5	DC motors, step motors and servomotors	2
Mix6	Logic circuits in automation	2
Mix7	Methods and algorithms used in robotics	2
	Total hours	**15**

TEACHING TOOLS USED
N1. Multimedia presentations N2. Instructions for programs and exercises N3. ePortal of Wroclaw University of Science and Technology

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8S_WG	Exam
Skills	P8S_UW	Individual project
Social competence	P8S_KK	Multimedia presentation

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Lecture presentation
[2] Instruction for programs and exercises
[3] Literature and materials prepared by the lecturer

SECONDARY LITERATURE:

[1] Manuals and technical documentation to computer programs concerning interdisciplinary prototyping of mechatronic systems

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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