a) General			
School	ENGINEERING		
Academic unit	MECHANICAL ENGINEERING		
Level of studies	Undergraduate		
Course code	MM209Y01	*Semester*	9
Course title	**Mechatronics**		

Independent teaching activities	*Weekly teaching hours*	*ECTS*
Lectures	4	7.0
Laboratory exercises	1	

Course type	Knowledge deepening / consolidation
Course category	Compulsory for Direction 2
Prerequisite courses	-
Language of instruction and examinations	Greek
Is the course offered to Erasmus students	Yes (EN)
Course website (url)	https://eclass.uniwa.gr/courses/MECH156/

b) Learning outcomes and general competences

b1. Learning outcomes

Upon successful completion of this course, the student will be able to:
- Recognize the parts of a Mechatronic system and identify the component sub-systems.
- Interpret the structure of a mechatronic system in terms of blocks and signal flows.
- Develop interfaces for common sensors and actuators.
- Develop real-time software for mechatronics applications.
- Implement simple control systems using mechatronics technologies and methods.

b2. General competences

- Search for, analysis and synthesis of data and information with the use of the necessary technology
- Adapting to new situations
- Decision making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment.

c) Syllabus

Introduction to Mechatronics, basic mechatronic system layout, sensors, actuators, micro-controllers, programming for real-time, mechatronics applications.

d) Teaching and learning methods - Evaluation

Delivery	Live lectures
Use of information and communications technology	- Commercial and free / open source software - Multimedia applications - MS Teams, eClass

Teaching methods	*Activity*	*Semester workload*
	Lectures	39
	Tutorials	
	Laboratory exercises	26

	Computational exercises	
	Individual work	91
	Course total	156
Student performance evaluation	Written final examination and student project (coursework).	

e) Suggested bibliography

1. Nesculescu D. (2001). *Mechatronics*. Pearson.
2. Auslander D.M. & Kempf C.J. (2000). *Mechatronics: Mechanical Systems Interfacing*. Prentice Hall.
3. Stifler K. (1992). *Design with Microprocessors for Mechanical Engineers*. McGraw Hill