

COURSE OUTLINE

1. GENERAL

ΣΧΟΛΗ	AGRICULTURAL SCIENCES		
ΤΜΗΜΑ	FOOD SCIENCE AND TECHNOLOGY		
ΕΠΙΠΕΔΟ ΣΠΟΥΔΩΝ	UNDERGRADUATE		
ΚΩΔΙΚΟΣ ΜΑΘΗΜΑΤΟΣ	FST_E11	ΕΞΑΜΗΝΟ ΣΠΟΥΔΩΝ	SPRING
ΤΙΤΛΟΣ ΜΑΘΗΜΑΤΟΣ	AUTOMATIC CONTROL SYSTEMS IN THE FOOD INDUSTRY		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	3		
Laboratory exercises	2		
TOTAL	5	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at 4.</i>			
COURSE TYPE <i>Background, General knowledge, Field of Science, Skills development</i>	ELECTIVE <i>Field of Science, Skills development</i>		
PREREQUISITE COURSES:	There are not prerequisite courses		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.upatras.gr/		

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

The purpose of this course is to give students the basic knowledge in the field of mechanical engineering of food industries, and automatic control systems in them. After successful completion of the course, students will be able to:

- possess the basic mechanical engineering knowledge that governs automatic control systems in food
- know automatic control systems after educational visits to food industries
- have experience to apply the above knowledge and analytical skills in an industrial setting process

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology Adapting to new situations Decision-making Working independently Teamwork Working in an international environment Working in an interdisciplinary environment Production of new research ideas	Project planning and management Respect for difference and multiculturalism Respect for the natural environment Showing social, professional and ethical responsibility and sensitivity to gender issues Criticism and self-criticism Production of free, creative and inductive thinking
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- The specific course aims at the acquisition of the following general skills by the graduate:
- Development of critical thinking
- Decision making
- Project planning and management
- Problem solving skill
- Work in an interdisciplinary environment

3. SYLLABUS

Course contents include the following:

1. Introduction to control systems. 2. Examples of control systems. 3. Closed loop control and open loop control. 4. Design and compensation of control systems. 5. Mathematical Modeling of control systems. 6. Electrical system. 7. Mechanical components of displacement and torsion. 8. Thermal and hydraulic systems. 9. Sensitivity of automatic control systems. 10. Applications in the food industry. 11. Examples-Case Studies. 12. Presentation of work.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc..</i>	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Lectures with the use of Power Point presentations, Educational visits, posting of educational material in the e - class
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other Specifically-defined evaluation criteria are given, and if and where they are accessible to students,</i>	It is carried out based on the following criteria (combined or not) depending on the number of students who will participate in the course.

	<p>End-of-semester written exam with development questions, short</p> <ul style="list-style-type: none"><input type="checkbox"/> answer questions and/or multiple-choice questions, or a combination of the above<input type="checkbox"/> Evaluation of laboratory work
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5. ATTACHED BIBLIOGRAPHY

- Suggested Bibliography:

- Modern Control Engineering . K. Ogata. Publisher: Fountas,
- Modern automatic control system. Dorf, Richard C. Publisher: Tziola, 2016
- Automatic control system. Veloni, Anastasia N. Publisher: Tziola, 2017