AGRICULTURAL MACHINERY

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	CROP SCIENCE		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	CRS_1004	**SEMESTER OF STUDIES**	10th
COURSE TITLE	Agricultural Machinery		

INDEPENDENT TEACHING ACTIVITIES *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*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
Lectures	3	
Tutorial	1	
Total	4	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialized general knowledge
PREREQUISITE COURSES:	Typically, there are not prerequisite courses.
TEACHING AND ASSESSMENT LANGUAGE:	Greek. Teaching may be however performed in English in case foreign students attend the course.
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBPAGE (URL)	

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 course aims to provide expertise in the field of mechanization of agriculture and of farm machinery.
By the end of this course the students will be able to:

1. Identify the farm machines and equipment, their parts and their operation
2. Adjust and utilize farm machinery to meet specific needs of crops
3. Estimate the farm machinery cost of use, estimate fixed and variable costs, as well as calculate the required engine power for new agricultural tractors acquisition

General Abilities

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
Team work
Working in an international environment
Working in an interdisciplinary environment
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

Production of new research ideas
Search for, analysis and synthesis of data and information, with the use of the necessary technology *Adapting to new situations* *Decision-making* *Working independently* *Production of free, creative and inductive thinking* *Respect for the natural environment*

3. SYLLABUS

1. Agricultural mechanization
2. Agricultural tractor and its uses
3. Internal combustion engines (Part I)
4. Internal combustion engines (Part II)
5. Parts of the agricultural tractor
6. Farm machinery for soil cultivation
7. Sowers and sowing machines
8. Fertilizing machinery
9. Crop protection machinery
10. Harvesters
11. Hay making machinery
12. Power of agricultural tractors and selection of agricultural implements
13. Costs and replacement of farm machinery

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD *Face-to-face, Distance learning, etc.*	Lectures in class, in the laboratory and in the field (face to face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. Direct communication with the students (face to face and by e-mail), Support of the learning process and uploading of the educational material to the electronic platform (e-class): https://eclass.upatras.gr
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures (3 contact hours per week x 13 weeks)	39
Tutorial (1 contact hours per week x 13 weeks)	13
Mid-term examinations (2 mid-term examinations x 2 contact hours each)	4
Hours for private study of the student and preparation for mid-term or/and final examination / Final examination	69
Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125 hours (total student work-load)***

STUDENT PERFORMANCE EVALUATION *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*	Optionally, two mid-term examinations with the final examination grade to be the mean mark. It is mandatory to obtain pass grade (≥5) in each examination. Written examination after the end of the semester. Minimum passing grade: 5. **Evaluation of theoretical part (50%)** Written examination. It is mandatory to obtain pass grade (≥5).

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.*	**Evaluation of the laboratory work (50%)** Written examination. It is mandatory to obtain pass grade (≥5). All the above are taking place in Greek as well as in English for foreign students (e.g. ERASMUS students) if any.

5. RECOMMENDED LITERATURE

1. Τσατσαρέλης, Κ., " Γεωργικοί Ελκυστήρες", 2η έκδοση, Εκδόσεις Γιαχούδη, Θεσσαλονίκη, 2011
2. Τσατσαρέλης, Κ., "Αρχές Μηχανικής Κατεργασίας του Εδάφους και Σπορά", Εκδόσεις Γιαχούδη, Θεσσαλονίκη,