

Agricultural Machinery (Farm Tractors-Farm Machinery) [183]

COURSE OUTLINE

(1) GENERAL

SCHOOL	ANIMAL BIOSCIENCES		
ACADEMIC UNIT	DEPARTMENT OF ANIMAL SCIENCE		
LEVEL OF STUDIES	Undergraduate [Free Elective]		
COURSE CODE	183	SEMESTER	3 rd
COURSE TITLE	AGRICULTURAL MACHINERY (FARM TRACTORS – FARM MACHINERY)		
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 (ECTS)
Lectures		3	3
Laboratory and practice		2	2
Total		5	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Scientific expertise		
PREREQUISITE COURSES:	Physics		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS:	YES (With individual lectures and assignments)		
COURSE WEBSITE (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	
Specialised knowledge in the field of mechanisation of agriculture and agricultural machinery. The student will be able to identify agricultural machinery, their parts and their operation. They will be able to adjust and utilize agricultural machinery to meet specific crop needs. They will be able to supervise their maintenance and repairs. Finally, he will be able to calculate the cost of using farm machinery, calculating fixed and variable costs, as well as calculate the power to purchase new farm tractors.	
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 Team work 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 Others...
-Search, analysis and synthesis of data and information, using the necessary technologies -Autonomous Work -Project design and management -Teamwork -Decision making -Promoting free, creative and inductive thinking	

(3) SYLLABUS

- Agricultural mechanization, advantages, disadvantages, problems, stages of agricultural mechanization, standardization and its importance
- The agricultural tractor and its use (types, characteristics, general comparison)
- The internal combustion engine characteristics - operation, systems (cooling, lubrication, fuel transport, electrical)
- Systems of the agricultural tractor. Mechanical transmission, hydraulic system, dynamo, steering system, braking system
- Soil tillage machinery. Importance of soil tillage, effect on physical and other soil properties, tillage systems. Primary and secondary tillage machinery. Exercises.
- Seedbed preparation machinery, PTO driven machinery
- Plantation establishment. Methods and their use, sowing, sowing of cereals and small grains Exercises
- Seed drills, planters and transplanters Exercises
- Crop care machinery. Fertiliser spreaders, hoeing machines. Exercises.
- Plant protection machinery. High pressure sprayers, mistsprayers, sprayers, applicators. Exercises.
- Crop harvesting machinery - combine harvesters, cotton harvesters, beet harvesters, potato harvesters, fruit harvesters
- Machinery for forage plants - mowers, forage handlers, forage harvesters, stalk crushers, silage machine
- Precision farming basics
- Calculation of the cost of using agricultural tractors and machinery. Fixed and variable costs.
- Method of calculating power of agricultural tractors and selection of machinery attachments.

(4) TEACHING and LEARNING METHODS - EVALUATION

TEACHING METHOD <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>	Exploitation of Information and Communication Technologies in teaching, and in the communication with students.	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>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.</i> <i>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</i>	Activity	Semester workload
	Lectures	75
	Laboratory work and practice	50
	Course total (25 h of workload per ECTS)	125
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>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</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	I. Theory Final written Exam, of increasing difficulty, which may include: - Questions to develop a topic and Multiple-choice test - Exercise solving of graded difficulty. II. Laboratory Oral exam	

(5) ATTACHED BIBLIOGRAPHY

- Online notes for laboratory exercises and lecture presentations.
- Τσατσαρέλης, Κωνσταντίνος (2000). Αρχές Μηχανικής Κατεργασίας του Εδάφους και Σπορά. Θεσσαλονίκη. ISBN: 960-7425-25-1
- Τσατσαρέλης, Κωνσταντίνος Α (2011). Γεωργικοί Ελκυστήρες. Εκδόσεις Γιαχούδη. Θεσσαλονίκη, ISBN: 960-6700-51-4