

COURSE OUTLINE

1. GENERAL

SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Biosystems & Agricultural Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	BAE 820	SEMESTER	8 th
COURSE TITLE	TRACTORS-AGRICULTURAL MACHINES		
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		
Tutorials	2		
Laboratory	0		
TOTAL	5	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Special background Skills Development		
PREREQUISITE COURSES:	There are no prerequisite courses.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek .-For Erasmus students in English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 		
<p>The course offers specialized knowledge in the field of agricultural mechanization and agricultural machinery. The student will be able to recognize agricultural machines, their parts and their function. He will be able to adjust and utilize agricultural machinery to meet specific crop needs. He will be able to supervise their maintenance and repairs. Finally, it will be able to calculate the cost of using agricultural machinery, calculating fixed and variable costs, as well as calculating the power to buy new agricultural tractors</p>		
<p>General Competences</p> <p><i>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?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 50%;"> <i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i> </td> <td style="vertical-align: top; width: 50%;"> <i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>.....</i> </td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i>	<i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>.....</i>
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<i>Working in an interdisciplinary environment</i>	<i>Others ...</i>
<i>Production of new research ideas</i>	<i>.....</i>
<p>At the end of this course the student will have further developed the following general skills: <i>Search, analysis and synthesis of data and information, also using the necessary technologies</i> <i>Adaptation to new situations</i> <i>Decision making</i> <i>Autonomous work</i> <i>Teamwork</i> <i>Generating new research ideas</i> <i>Respect for the natural environment</i> <i>Exercise criticism and self-criticism</i> <i>Promotion of free, creative and inductive thinking</i></p>	

3. SYLLABUS

<p>Mechanization of Agriculture, advantages, disadvantages, problems, stages mechanization of agriculture, its standardization and importance.</p> <ul style="list-style-type: none"> • The agricultural tractor and its use (types, characteristics). • The Internal Combustion Engine, characteristics – operation, systems (cooling, lubrication, fuel transfer, electrical) • Agricultural tractor systems. Mechanical transmission, hydraulic system, power take-off, steering system, braking system. • Soil cultivation machinery. Importance of tillage, effect on physical and other soil properties, tillage systems. <p>Primary and secondary processing machinery. Exercises.</p> <ul style="list-style-type: none"> • Machines for preparing the seed bed, machines driven by the power take-off. • Installation of plantations. Methods and their use, sowing, seeding of grains and small Seeds. <p>Exercises</p> <ul style="list-style-type: none"> • Seedlings of carving crops, planting and post-planting. Exercises. • Cultivation machinery. Fertilizer distributors, growers. Exercises. • Plant protection machinery. High pressure sprayers, mist sprinklers, sprayers. Exercises. • Crop harvesting machines – combine harvesters, • Calculation of the cost of using agricultural tractors and machinery. Stable and variable costs. • How to calculate power of agricultural tractors and selection of accessories machines.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face to face deliveries. Exercises in Irrigation Systems	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	<ul style="list-style-type: none"> • Use of ICT (power point) in Teaching • Use of ICT (power point) in Laboratory Training • Use of ICT in Communication with students (Learning process support through the electronic platform e-class). 	
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>	<i>Activity</i>	<i>Semester workload</i>
	Lectures	39
	Tutorials	26
	Writing short reports of project work	13
	Final Exams	3
	Study hours and preparation for the laboratory exercises and the final examination	44
Course total	125	
STUDENT PERFORMANCE	1. The main assessment criteria focus on understanding and correlating the knowledge that students gain from the course with	

<p style="text-align: center;">EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p> <p>1</p>	<p>other knowledge. Particular emphasis is placed on whether they have developed the ability to apply this knowledge to crop selection and to assess the impact of these changes on the environment. Emphasis is also placed on demonstrating critical ability and justifying the choices they make in each problem.</p> <p>2. Evaluation is dynamic. It mainly involves problem solving. is done orally or in writing or with a combination of the two, with or without pre-examination on the basic principles of the course, with or without exculpatory advances and with other test or inventive methods, depending on the composition of the dynamics and the needs of the audience.</p> <p>3. The above are done in the Greek language. For foreign language students (eg Erasmus students) conducted in English</p>
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5. RECOMMENDED LITERATURE in Greek

- 1. Τσατσαρέλης, Κωνσταντίνος (2000). Αρχές Μηχανικής Κατεργασίας του Εδάφους και Σπορά. Θεσσαλονίκη. ISBN: 960-7425-25-1
- 2. Τσατσαρέλης, Κωνσταντίνος Α (2011). Γεωργικοί Ελκυστήρες. Εκδόσεις Γιαχούδη. Θεσσαλονίκη, ISBN: 960-6700-51-4

