

COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGR_801	SEMESTER	8 th
COURSE TITLE	Citrus and Olive Culture		
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 (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	SPECIALISED GENERAL KNOWLEDGE SKILLS DEVELOPMENT		
PREREQUISITE COURSES:	Typically, there are not prerequisite course.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek.		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

<p>Learning outcomes <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> <i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • 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 			
<p>The aim of the course is to introduce the students to the citrus and olive trees cultivation methods. By the end of this course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Know the basic physiological procedures of citrus and olive trees. 2. Know the basic tools and techniques for the sustainable cultivation of citrus and olive trees. 3. Recognize and evaluate the effect of abiotic or abiotic factors on the crop. 			
<p>General Competences <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="width: 50%; border: none;"> <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>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i> </td> <td style="width: 50%; border: none;"> <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>Others...</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>Working in an interdisciplinary environment</i> <i>Production of new research ideas</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>Others...</i>
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By the end of this course the student will, furthermore, have developed the following skills (general abilities):

1. Skills for the management of a citrus or olive tree cultivation.
2. Ability to search, evaluate and use relevant knowledge from different bibliography sources.
3. Skills to interact with his/her co-students, professor and possible stakeholders in citrus and olive tree cultivation matters.

Generally, by the end of this course the student will, furthermore, have developed the following general abilities (from the list above):

1. Search for, analysis and synthesis of data and information, with the use of the necessary technology
2. Decision-making
3. Working independently
4. Teamwork
5. Respect for the natural environment
6. Production of free, creative and inductive thinking

3. SYLLABUS

Part A: The citrus trees

1. Introduction, history and the origin of citrus trees. Geographical distribution in Greece and world-wide. Current trends and prospects of Greek citrus cultivation.
2. Morphology and taxonomy, climatic and soil conditions.
3. Citrus species, classification and characterization of varieties and rootstocks.
4. Cultivation techniques: mineral nutrition, water requirements - irrigation, pruning, weed management and soil cultivation, low temperatures stress, methods of frost protection.
5. Fruit thinning, fruit development and composition, fruit ripening.
6. Fruit harvesting of high quality products, postharvest management and storage of products.
7. Propagation techniques.

Part B: The olive tree

1. History of olive culture, the olive origin and classification. Olive production in Greece and world-wide, major trends in olive farming systems.
2. Morphology and taxonomy of the olive, climatic and soil conditions.
3. Flower bud induction and differentiation. Flowering, pollination, fertilization and fruiting.
4. Factors affecting olive tree productivity.
5. Fruit development, components of the olive fruit, olive ripening and, structure and composition of the olive fruit.
6. Cultivation techniques: mineral nutrition, water requirements - irrigation, pruning, growth and salt tolerance, weed management and soil cultivation.
7. Olive varieties, classification and characterization.
8. Low temperatures stress, methods of protecting olive trees against frost, management of frost and fire damaged trees.
9. High density olive planting systems.
10. Olive fruit harvesting, production of high quality olive oil, categories of oils, oil packing-bottling, labelling and storage of olive products.

Laboratory exercises:

Part A: The citrus trees

- Establishment of a commercial orchard, planting systems, selection of the most appropriate varieties and rootstocks, bioclimatic indices, climate factors, planting techniques.
- Pruning during the training period and pruning of mature trees.
- Propagation and grafting techniques.
- Classification and characterization of varieties and rootstocks.

Part B: The olive tree

- Establishment of a commercial orchard, planting systems, selection of the most appropriate varieties, bioclimatic indices.
- Pruning during the training period, pruning of mature olive trees, rejuvenation of old trees and pruning shapes.
- Methods for evaluation of maturation stage.
- Olive tree propagation techniques.

4. TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;">DELIVERY</p> <p style="text-align: center;"><i>Face-to-face, Distance learning, etc.</i></p>	Face-to-face lectures and laboratory exercises.	
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</p> <p style="text-align: center;"><i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<ul style="list-style-type: none"> • Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. • Use of ICTs in student communication (learning support through the e-class platform). 	
<p style="text-align: center;">TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><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></p> <p><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></p>	Activity	Semester workload
	Lectures (3 conduct hours per week x 13 weeks)	39
	Field and laboratory exercises (2 conduct hours per week x 8 weeks)	16
	Hours for private study of the student and preparation for mid-term or/and final examination – Participation in the examinations	70
	Course total	125 hours
<p style="text-align: center;">STUDENT PERFORMANCE 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>	<ol style="list-style-type: none"> 1. Optionally, two mid-term examinations, the first in the middle and the second at the end of the semester. The evaluation procedure is conducted with short answer questions and/or open-ended questions and/or multiple choice questionnaires and/or oral examination, as well as questions based on laboratory exercises. The final examination grade is the mean mark. It is mandatory to obtain pass grade (≥ 5) in each examination. 2. Written examination after the end of the semester. The evaluation procedure is conducted with short answer questions and/or open-ended questions and/or multiple choice questionnaires and/or oral examination, as well as questions based on laboratory exercises (unless the student has successfully participated the mid-term examinations). Minimum passing grade: 5. 3. All the above are taking place in Greek. 	

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Part A: The citrus trees

1. K.A. Pontikis, 2003, Citrus Cultivation, Stamoulis Publ.
2. M.D. Vasilakakis and J.N. Therios, 2006, Specific Pomology – Citrus, Gartaganis Publ.
3. E. Protopapadakis, 2010, The citrus trees, Psichallos Publ.

Part B: The olive tree

1. K.A. Pontikis, 2000. Olive Cultivation, Stamoulis Publ.
2. J.N. Therios, 2007. Olive Cultivation, Gartaganis Publ.

- Related academic journals:

1. Acta Horticulturae
2. HortScience
3. Scientia Horticulturae
4. Journal of Plant Growth Regulation
5. Tree Physiology
6. Fruits
7. European Journal of Horticultural Science
8. HortTechnology