

## COURSE OUTLINE

### 1. GENERAL INFORMATION

<b>FACULTY/SCHOOL</b>	SCHOOL OF PLANT SCIENCES		
<b>DEPARTMENT</b>	CROP SCIENCE		
<b>LEVEL OF STUDY</b>	Pregraduate		
<b>COURSE UNIT CODE</b>	750	<b>Semester:</b>	6 <sup>th</sup>
<b>COURSE TITLE</b>	DECIDUOUS FRUIT TREES		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>ECTS</b>
Lectures		5	5
Laboratory Exercises			
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
<b>COURSE TYPE</b> Background knowledge, Scientific expertise, General Knowledge, Skills Development	Scientific expertise		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION:</b>	Greek		
<b>LANGUAGE OF EXAMINATION/ASSESSMENT:</b>			
<b>THE COURSE IS OFFERED TO ERASMUS STUDENTS</b>	NO		
<b>COURSE WEBSITE (URL)</b>	<a href="https://www.aua.gr/roussos/Roussos/6SEM.php">https://www.aua.gr/roussos/Roussos/6SEM.php</a> (PART OF THE THEORY)		

### 2. LEARNING OUTCOMES

#### **Learning Outcomes**

The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

#### **APPENDIX A**

- Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.
- Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and

#### **APPENDIX B**

- Guidelines for writing Learning Outcomes

The subject of the present course is the teaching of cultivation techniques of the major fruit trees which are cultivated in Greece. The aim of the course is for the students to get familiar with both the theoretic as well as the practical aspects of fruit tree cultivation including their special needs in pedoclimatic conditions, irrigation, fertilization, pruning as well as fruit thinning and harvesting, storage and fruit quality indexes. Special attention is given to the following fruit trees, which have great economic importance for Greece, i.e. peach, plum, apricot, cherry, almond, kiwifruit, pistachio, walnut, hazelnut, apple, pear, fig, etc).

More specifically the species whose cultivation and pedoclimatic needs are taught are

1. Stone fruits (plum, peach, apricot, sweet cherry, sour cherry, almond)
2. Pome fruits (apple, pear, quince)

3. Nuts (pistachio, walnut, chestnut, hazelnut)
4. Various others (fig, pomegranate, kiwifruit, persimmon etc)

The aim of the laboratory courses is for the students to get familiar with basic cultivation techniques such as plant propagation (cuttings, budding and grafting, sexual propagation), training and pruning, orchard design and establishment, fruit tree planting, fruit thinning etc).

### General Competences

*Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?*

*Search for, analysis and synthesis of data and information by the use of appropriate technologies,*

*Adapting to new situations*

*Decision-making*

*Individual/Independent work*

*Group/Team work*

*Working in an international environment*

*Working in an interdisciplinary environment*

*Introduction of innovative research*

*Project planning and management*

*Respect for diversity and multiculturalism*

*Environmental awareness*

*Social, professional and ethical responsibility and sensitivity to gender issues*

*Critical thinking*

*Development of free, creative and inductive thinking*

*.....*

*(Other.....citizenship, spiritual freedom, social awareness, altruism etc.)*

*.....*

*Decision-making, Individual/Independent work, Group/Team work, Development of free, creative and inductive thinking*

### 3. COURSE CONTENT

#### THEORY

1<sup>st</sup>-5<sup>th</sup> week: Stone fruit and kiwifruit cultivation management

6<sup>th</sup>- 8<sup>th</sup> week: Pome fruit and fig

9<sup>th</sup>-13<sup>th</sup> week: Nuts and other fruit trees

For each fruit tree the following course are taught

1. Origin and domestication
2. Botanical aspects
3. Morphology and main organs
4. Flower bud differentiation
5. Flowering, pollination and fruit set
6. Fruit growth and maturation
7. Propagation and rootstocks
8. Major cultivars
9. Pedoclimatic conditions
10. Orchard establishment (soil selection, soil preparation, rootstock selection, cultivar(s) selection, planting density, training system)
11. Pruning
12. Fruit thinning
13. Fertilization
14. Weed control
15. Irrigation
16. Fruit maturation, harvesting techniques and storage conditions

17. Special needs or state-of-the-art techniques such as fruit maturation advancement, protected cultivation, biennial bearing management, cultivar evaluation etc0

## LABORATORY

1<sup>st</sup>-3<sup>rd</sup> week: Training and pruning  
 4<sup>th</sup>-5<sup>th</sup> week: Orchard design and planting  
 6<sup>h</sup>-7<sup>th</sup> week: sexual plant propagation  
 8<sup>th</sup>-9<sup>th</sup> week: asexual plant propagation by cuttings  
 10<sup>th</sup>-11<sup>th</sup> week: budding  
 12<sup>th</sup>-13<sup>th</sup> week: grafting

## 4. TEACHING METHODS--ASSESSMENT

<b>MODES OF DELIVERY</b> <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i>	In-class lecturing																		
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</b> <i>Use of ICT in teaching, Laboratory Education, Communication with students</i>	Use of slide presentation and blackboard. Communication with students. Learning process support by access to e-class asynchronous distance learning platform.																		
<b>COURSE DESIGN</b> <i>Description of teaching techniques, practices and methods:            Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.</i>  <i>The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</i>	<table border="1"> <thead> <tr> <th>Activity/ Method</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Laboratory practice</td><td>26</td></tr> <tr> <td>Individual laboratory project (data processing and commenting)</td><td>7</td></tr> <tr> <td>Personal study</td><td>43</td></tr> <tr> <td>Group project</td><td>10</td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td><b>Total of Course (25 hours of workload per ECTS)</b></td><td><b>125</b></td></tr> </tbody> </table>	Activity/ Method	Semester workload	Lectures	39	Laboratory practice	26	Individual laboratory project (data processing and commenting)	7	Personal study	43	Group project	10					<b>Total of Course (25 hours of workload per ECTS)</b>	<b>125</b>
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<b>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</b> <i>Detailed description of the evaluation procedures:</i>  <i>Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other.....etc.</i>	<p><b>I. One or two mid-term exams or Final written exam in the theory of the course</b> including a combination of short-answer questions, open-ended questions and multiple choice questions.</p> <p><b>II. The laboratory examination includes</b></p> <p>a) the evaluation of the work of the students in the orchard during the course (0-20%),</p> <p>b) the work of the students with trees</p>
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Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.	c) undertaken by them (30%) as well as the written examination in the laboratory part of the course, which may include questions of short answer, open-ended, problem solving and multiple choice questions.
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## 5. SUGGESTED BIBLIOGRAPHY:

<p>Specific Pomology – Pome fruits, Pontikis Konstantinos  General and Specific Pomology, Miltiadis Vasilakakis  Specific Pomology – Deciduous Fruit Trees, Therios Ioannis and Dimassi-Theriou Kortessa, 2013.</p> <p><i>-Scientific Journals</i>  Scientia Horticulturae (<a href="http://www.journals.elsevier.com/scientia-horticulturae/">http://www.journals.elsevier.com/scientia-horticulturae/</a>)  Acta Horticulturae (<a href="http://www.actahort.org/">http://www.actahort.org/</a>)  HortScience (<a href="http://hortsci.ashspublications.org/">http://hortsci.ashspublications.org/</a>)  Fruits (<a href="http://journals.cambridge.org/action/displayJournal?jid=FRU">http://journals.cambridge.org/action/displayJournal?jid=FRU</a>)  Experimental Agriculture (<a href="http://journals.cambridge.org/action/displayJournal?jid=EAG">http://journals.cambridge.org/action/displayJournal?jid=EAG</a>)  Agriculture (<a href="https://www.mdpi.com/journal/agriculture">https://www.mdpi.com/journal/agriculture</a>)  Horticulture (<a href="https://www.mdpi.com/journal/horticulturae">https://www.mdpi.com/journal/horticulturae</a>)  Plants (<a href="https://www.mdpi.com/journal/plants">https://www.mdpi.com/journal/plants</a>)</p>
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## 6. TEACHERS:

<p><b>-Theory:</b> Roussos A. Petros, Professor  Tsantili Eleni, Professor  Kafkaletou Mina, Assistant Professor</p> <p><b>-Laboratory:</b> Roussos A. Petros, Professor  Tsantili Eleni, Professor  Kafkaletou Mina, Assistant Professor</p>
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