

COURSE OUTLINE

1. GENERAL INFORMATION

FACULTY/SCHOOL	SCHOOL OF PLANT SCIENCES		
DEPARTMENT	CROP SCIENCE		
LEVEL OF STUDY	Pregraduate		
COURSE UNIT CODE	785	Semester:	9 th
COURSE TITLE	FRUIT TREE PROPAGATION		
INDEPENDENT TEACHING ACTIVITIES <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>		WEEKLY TEACHING HOURS	ECTS
Lectures		3	5
Laboratory Exercises		2	
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development	Scientific expertise		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION:	Greek		
LANGUAGE OF EXAMINATION/ASSESSMENT:			
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://www.aua.gr/roussos/Roussos/pdf/Printing%20Lessons/Semester%209%20Lessons.pdf https://www.aua.gr/roussos/Roussos/Lab_Excs_9.php		

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 plant propagation techniques, including sexual and asexual plant propagation, nursery organization and aspects of the physiology, anatomy and biochemistry of plants and the mechanisms involved in plant propagation.

The aim of the laboratory courses is for the students to get familiar with basic plant propagation techniques, such as sexual propagation and seed dormancy breaking, layering, cuttings, budding and grafting, *in vitro* culture.

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

The following courses are taught

1. Anatomy and physiology of plants in relation to plant propagation
2. Substrates use in plant propagation and their properties
3. Sexual plant propagation
4. Asexual plant propagation - layering
5. Budding
6. Grafting
7. Propagation through cuttings (leafy or hardwood cuttings)
8. In vitro culture
9. Plant propagation facilities and units (mist, bottom heated frames etc)
10. Nursery organizations
11. Yearly cultivation techniques in a nursery

LABORATORY

- 1st week: Sexual propagation
2nd week: Budding
3rd week: Grafting
4th week: Hardwood cuttings
5th week: Softwood cuttings
6th week: Facilities in plant propagation
7th week: In vitro culture (1st part)
8th week: In vitro culture (2nd part)
9th week: layering
10th week: cultivation techniques in the nursery

4. TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i>	In-class lecturing																		
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <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.																		
COURSE DESIGN <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>30</td></tr> <tr> <td>Individual laboratory project (data processing and commenting)</td><td>11</td></tr> <tr> <td>Personal study</td><td>30</td></tr> <tr> <td>Group project</td><td>15</td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td>Total of Course (25 hours of workload per ECTS)</td><td>125</td></tr> </tbody> </table>	Activity/ Method	Semester workload	Lectures	39	Laboratory practice	30	Individual laboratory project (data processing and commenting)	11	Personal study	30	Group project	15					Total of Course (25 hours of workload per ECTS)	125
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STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS <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> <i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i>	<p>I. One or two mid-term exams or Final written exam in the theory of the course including a combination of short-answer questions, open-ended questions and multiple choice questions.</p> <p>II. The laboratory examination includes</p> <p>a) the evaluation of the work of the students in the orchard during the course (0-20%),</p> <p>b) 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.</p>
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5. SUGGESTED BIBLIOGRAPHY:

<p>Fruit tree and shrubs propagation techniques, Pontikis Konstantinos</p> <p>Fruit tree and shrubs propagation, Therios Ioannis and Kortessa Dimassi-Theriou</p> <p>Plant propagation, principles and Practices, Hartmann, Kester, Davis and Geneve</p> <p>-Scientific Journals</p> <p>Scientia Horticulturae (http://www.journals.elsevier.com/scientia-horticulturae/)</p> <p>Acta Horticulturae (http://www.actahort.org/)</p> <p>HortScience (http://hortsci.ashspublications.org/)</p> <p>Experimental Agriculture (http://journals.cambridge.org/action/displayJournal?jid=EAG)</p>

Agriculture (<https://www.mdpi.com/journal/agriculture>)
Horticulture (<https://www.mdpi.com/journal/horticulturae>)
Plants (<https://www.mdpi.com/journal/plants>)

6. TEACHERS:

-Theory: Roussos A. Petros, Professor

-Laboratory: Roussos A. Petros, Professor