COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGRI 602	**SEMESTER OF STUDIES**	SIXTH
COURSE TITLE	SPECIALIZED POMOLOGY		
FACULTY MEMBER	ELENI KALORIZOU		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	2	
Lab exercises	2	
Total	4	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	*Specialized general knowledge,*
PREREQUISITE COURSES:	Typically, there are no prerequisite courses
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (English)
COURSE WEBPAGE (URL)	

2. LEARNING OUTCOMES

Learning outcomes

• 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

The specialized pomology course aims to train students on new cultivation systems of deciduous fruit trees offering fundamental aspects and managerial skills for commercial orchards. Strong focus is provided on pome, stone fruits, nuts and other fruit trees (kiwi, fig, pomegranate, loquat, dogwood) for optimized entrepreneurial production and use. Emphasis is given on cultivational practices coupled with emerging links to circular economy. Attention is provided on available environmental resilience tools in order to secure fruit production under stressful biotic and abiotic conditions.

By the end of this course the student will have developed the following skills:

1. Understanding of physiological and ecological requirements of deciduous fruit trees
2. Understanding and applying techniques of environmental optimization for deciduous fruit trees cultivation purposes.
3. Be able to design and manage and operate large scale of deciduous fruit trees orchards for local, national and global firms.

4. Be able to supervise and adapt plant material to farm conditions, applying novel all year around, techniques.
5. Be able to produce high quality fruits in terms of nutritional value, postharvest handling and aesthetics.

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

- Autonomous (Independent) work
- Team work
- Project planning and management
- Respect for the environment
- Adaptation to environmental changes under optimum, suboptimum and extreme conditions.
- Production of new research ideas
- Promotion of free, creative and inductive thinking

3. SYLLABUS

Lectures

1. Apple tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
2. Pear and Quince trees cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
3. Peach tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
4. Apricot tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
5. Plum tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
6. Cherry and Sour cherry tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
7. Almond tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
8. Walnut tree cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
9. Pistachio tree cultivation Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
10. Chestnut tree and hazelnut cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
11. Kiwi-fruit cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.
12. Fig tree and pomegranate cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.

13. Loquat tree and dogwood cultivation: Morphological – anatomical elements, ecological requirements, rootstocks, cultivational practices, harvest, postharvest optimized processes.

Laboratory exercises

1. High density orchard establishment.
2. Selection for best scions/rootstocks and grafting method per tree species
3. Apple, Pear and Quince pruning
4. Stone fruits pruning
5. Fruit thinning
6. Qualitative characteristics for pome and stone fruits

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face lectures in the classroom and laboratory.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES ***Use of ICT in teaching, laboratory education, communication with students***	Use of Information and Communication Technologies (ICTs) in teaching. Scenarios *in silico* and evaluation of small fruit trees and subtropical trees culture data will be integrated in the course. Exemplary solutions will be provided.
TEACHING METHODS *The manner and methods of teaching are described in detail.* *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.* *The student's study hours for each learning activity are given as well as the hours of nondirected study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures (2 conduct hours per week x 13 weeks)	26
Lab Practice (2 conduct hour per week x 6 weeks)	12
Individual and group lab reports	8
Hours for private study of the student, preparation and attendance mid-term or/and final examinations.	79
Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125 hours (total student work-load)***

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *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* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Student performance evaluation will be explained to the students at the beginning of the course/beginning of the semester. 1. Mandatory final written examination for lectures / theoretical part of the course, comprises 60% of the final mark of the student. 2. Mandatory final written examination for the transferred laboratory skills of the course, comprises 40% of the final mark of the student. Minimum pass mark: 5 (full scale: 0-10) 1. The above mentioned process will be taking place in Greek and for foreign students (eg ERASMUS students) in English.

	Examination will be based on full length questions and / or multiple choice questions. 2. Oral examination could take place if permitted by the legal/regulatory framework under which the student is affiliated (or enrolled) to the department. If permitted, oral examination will take place simultaneously with written exams.

5. ATTACHED BIBLIOGRAPHY

Proposed literature (indicative and not restrictive):

1. Lang G.A., 2019. Achieving Sustainable Cultivation of Temperate Zone Tree Fruits and Berries, Volume 2 : Case Studies, Burleigh Dodds Science Publishing, 340 P.
2. Βασιλακάκης Μ., 2016. Γενική και Ειδική Δενδροκομία, Εκδότης Γαρταγάνης Θεσσαλονίκη, σελ. 1424.
3. Θεριός, Ι., Δημάση-Θεριού Κ., 2012. Ειδική Δενδροκομία: Φυλλοβόλα-Οπωροφόρα Δένδρα. Εκδόσεις Γαρταγάνη, Θεσσαλονίκη, Σελ. 844.
4. Ποντίκης Κ., 1996. Ειδική δενδροκομία, τόμος Β - Ακρόδυα, Πυρηνόκαρπα, Λοιπά Καρποφόρα, Εκδόσεις Σταμούλη, Αθήνα, Σελ. 493
5. Ποντίκης Κ., 2003. Ειδική δενδροκομία τόμος Α – Μηλοειδή, Εκδόσεις Σταμούλη, Αθήνα, Σελ. 208.

Proposed research journals for further reading (indicative and not restrictive):

1. Scientia Horticulturae
2. Acta Horticulturae
3. Tree physiology
4. Plant Physiology and Biochemistry
5. HortScience