COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGR_1007	**SEMESTER**	10th
COURSE TITLE	Small Fruits – Subtropical Plants		

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	3	
Laboratory exercises	2	
Total	5	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	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

Learning outcomes

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.

Consult Appendix A

- *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 aim of the course is to introduce the students to the cultivation of economically important small fruits and subtropical plants.

By the end of this course, the student will be able to:

1. Know the basic physiological procedures of small fruits and subtropical plants.
2. Know the basic tools and techniques for the sustainable cultivation of small fruits and subtropical plants.
3. Recognize and evaluate the effect of abiotic or abiotic factors on the crop.

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…*

By the end of this course the student will, furthermore, have developed the following skills (general abilities):

1. Skills for the management of a small fruit or subtropical plant 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 deciduous fruit 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 – Strawberry:

1. Introduction, origin, geographical distribution and current situation in Greece and world-wide, current trends and prospects.
2. Morphology of organs.
3. Climatic and soil conditions.
4. Annual and reproductive cycle of the strawberry.
5. Flower bud induction and differentiation.
6. Flowering, pollination, fertilization and fruit set.
7. Propagation techniques, establishment of orchard and planting systems, strawberry cultivation in the greenhouse.
8. Cultivation techniques: mineral nutrition, water requirements - irrigation, weed management and soil cultivation.
9. Varieties, selection and classification.
10. Fruit development and composition, fruit ripening, fruit harvesting, postharvest management and storage of fruits.

Part B – Shrubs (Blackberry, Raspberry, Gooseberry, Blueberry, Cranberry, Hippophae, Goji berry):

For each of the species, the following will be studied:

1. Origin, geographical distribution and current situation in Greece and world-wide.
2. Morphology of organs.
3. Environment and fruit production.
4. Flowering, pollination, fertilization and fruit set.
5. Propagation techniques, establishment of orchard and planting systems.
6. Cultivation techniques: mineral nutrition, water requirements - irrigation, weed management and soil cultivation.
7. Varieties, fruit development and composition, fruit ripening, fruit harvesting, postharvest management and storage of fruits.

Part C – Subtropical Plants (banana, avocado, mango, kiwi):

For each of the species, the following will be studied:

1. Origin, geographical distribution and current situation in Greece and world-wide.
2. Morphology of organs.

3. Environment and fruit production.
4. Flowering, pollination, fertilization and fruit set.
5. Propagation techniques, establishment of orchard and planting systems.
6. Cultivation techniques: mineral nutrition, water requirements - irrigation, weed management and soil cultivation.
7. Varieties, fruit development and composition, fruit ripening, fruit harvesting, postharvest management and storage of fruits.

Laboratory exercises:

- Propagation techniques
- Pruning techniques
- Establishment of a commercial orchard, selection of the most appropriate varieties
- Strawberry cultivation on the soil
- Strawberry cultivation in greenhouse conditions
- Hydroponical cultivation of strawberry

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face lectures and laboratory exercises.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• 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).
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 non-directed study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures (3 conduct hours per week x 13 weeks)	39
Field and laboratory exercises (2 conduct hours per week x 6 weeks)	12
Hours for private study of the student and preparation for mid-term or/and final examination – Participation in the examinations	74
Course total	**125 hours**

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.*	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:

1. Vasilakakis, 2006, Small Fruits, Dedousi Publ.
2. Dekazos, 1991. Small Fruits, vol. B, Stamoulis Publ.
3. Pontikis, 2001, Specific Pomology, Tropical Fruits, vol. 5, Stamoulis Publ.
4. Therios and Dimasi-Theriou, 2012, Specific Pomology, Gartaganis Publ.