COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	CROP SCIENCE		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	CRS_ 500	**SEMESTER OF STUDIES**	5th
COURSE TITLE	Aromatic & Medicinal 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*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
Lectures	2	
Laboratory exercises	2	
Tutorials	1	
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*	General Background
PREREQUISITE COURSES:	Typically, there are not prerequisite courses.
TEACHING AND ASSESSMENT LANGUAGE:	Greek. Teaching may be however performed in English in case foreign students attend the course.
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBPAGE (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 purpose of the course is to familiarize students with Aromatic and Medicinal plants. Students after successfully attending the course will be able to know:

• the botanical classification and the basic features of plants (morphology, growth, and environmental requirements - cultivation zones) and their economic importance.
Cultivation techniques, soil requirements and related production technologies
The specific technical knowledge related to the collection, processing, and standardization of aromatic and medicinal products.

• The technologies for isolating essential oils and bioactive substances and their uses in the food, cosmetics, and pharmaceutical industries.

General Abilities

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

Generally, by the end of this course the students will be able to apply and utilize the above knowledge in the production process, acquiring general skills:

Search, analysis and synthesis of data and information, using the necessary technologies

Adaptation to new situations

Decision making

Autonomous work

Exercise criticism and self-criticism

Promotion of free, creative, and inductive thinking

Respect for the natural environment

Project Planning and Management Autonomous and Teamwork in an interdisciplinary environment

3. SYLLABUS

Theory:

1. Historical review and importance of Aromatic and Medicinal plants.
2. Global, European, and Greek reality of Aromatic and Medicinal plants.
3. Botanical classification, description, biology, and ecology.
4. Measures to preserve and utilize native flora in their natural environment.
5. Main cultivated aromatic and medicinal plants.
6. Plant cultivation techniques of great importance for our country (propagating material, selection criteria for aromatic and medicinal plants).
7. Cultivation care, control of weeds, enemies, and diseases).
8. Application of Integrated Management to aromatic and medicinal plants.
9. Collection-harvesting criteria and methods
10. Conservation (fresh and dried aromatic and medicinal plants)
11. Aromatic and medicinal plants of particular economic interest.
12. Isolation technologies of essential oils and bioactive substances.

13. Basic elements of essential oil chemistry and biological action.
Their uses in the food, cosmetic and pharmaceutical industries.

Laboratory Exercises:
1. Terminology, and presentation of aromatic medicinal plants.
2. Cultivation techniques and bioclimatic conditions
3. Cultivation of the main species in Greece.
4. Cultivation of aromatic and medicinal plants in containers.
5. Collection and post-collection management of aromatic products.
6. Technologies for the isolation of essential oils and bioactive substances.
7. Educational Excursion.

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD *Face-to-face, Distance learning, etc.*	Lectures in the class and in the laboratory (face to face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. Direct communication with the students (face to face and by e-mail), Support of the learning process and uploading of the educational material to the electronic platform (e-class): https://eclass.upatras.gr
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 (2 conduct hours per week x 13 weeks)	26
Laboratory practice (2 conduct hours per week x 7 weeks)	14
Tutorials (1 conduct hours per week x 13 weeks)	13
total examinations (2 conduct hours each)	2
Hours for private study of the student and preparation for mid-term or/and final examination / Final examination	70
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.*	The evaluation criteria are presented and analyzed to the students at the beginning of the semester. • Final written theory exam (60%). • Final examination of laboratory exercises (40%). In case of advances, they participate by 30% in the final score, respectively.

5. RECOMMENDED LITERATURE

Books:

1. Δόρδας Χ, (2012), Αρωματικά και Φαρμακευτικά Φυτά. Εκδόσεις Σύγχρονη Παιδεία.

2. Κατσιώτης Σ. & Χατζοπούλου Π., 2013. Αρωματικά Φαρμακευτικά και αιθέρια έλαια. Εκδόσεις Αφοί Κυριακίδη, Θεσσαλονίκη, 978 σελ..
3. Κουτσός Θ, (2006). Αρωματικά και φαρμακευτικά φυτά. Εκδόσεις Ζήτη, 185 σελ.
4. Bogers RJ, Craker LE, and Lange D, (2006). Medicinal and aromatic plants: agricultural, commercial, ecological, legal, pharmacological, and social aspects.
5. Hornok l., 1989. Cultivation and processing of Medicinal Plants. John Wiley & Sons, 230 p