

COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGR_401	SEMESTER	4 th
COURSE TITLE	Weed Science		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>	WEEKLY TEACHING HOURS	CREDITS	
lectures	3		
laboratory exercises	2		
TOTAL	5	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Specialised general knowledge		
PREREQUISITE COURSES:	Typically, there are no prerequisite courses.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. Teaching may be performed in English in case foreign students attend the course.		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

<p>Learning outcomes <i>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.</i> <i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 																
<p>The aim of the course is to introduce students to basic issues of biology of weeds and to make them understand the various methods of weed control. Also, the aim of the course is to let them know the uses and properties of herbicides. After graduating from the course, students will be able to:</p> <ul style="list-style-type: none"> • Recognize the main weeds at all different growth stages • Know the biology of weeds. • Know the management of weeds in various plant growing systems using cultivation media. • Know the interactions of weeds with crops (Competition / Allelopathy). • Know the interactions between herbicides, plants, soil and the environment. • Know the ways of proper application of herbicides 																
<p>General Competences <i>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?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td style="width: 50%; border: none;"><i>Project planning and management</i></td> </tr> <tr> <td style="border: none;"><i>Adapting to new situations</i></td> <td style="border: none;"><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td style="border: none;"><i>Decision-making</i></td> <td style="border: none;"><i>Respect for the natural environment</i></td> </tr> <tr> <td style="border: none;"><i>Working independently</i></td> <td style="border: none;"><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td style="border: none;"><i>Team work</i></td> <td style="border: none;"><i>Criticism and self-criticism</i></td> </tr> <tr> <td style="border: none;"><i>Working in an international environment</i></td> <td style="border: none;"><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td style="border: none;"><i>Working in an interdisciplinary environment</i></td> <td style="border: none;"><i>.....</i></td> </tr> <tr> <td style="border: none;"><i>Production of new research ideas</i></td> <td style="border: none;"><i>Others...</i></td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>.....</i>	<i>Production of new research ideas</i>	<i>Others...</i>
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Decision-making
 Working independently
 Production of free, creative and inductive thinking

3. SYLLABUS

Theory

1. Weed biology (weed classification, weed reproduction, seed viability, lethargy, seed spraying, dispersal).
2. Weeds in Greece
3. Weed - Growing Plant Competition
4. Treatment methods and weed management systems (Preventive measures, Mechanical method, Cultivation measures)
5. Methods of treatment and weed management systems (Physical Method, Biological Method, Chemical Method)
6. Integrated weed management.
7. Interaction of weeds with crops (Competition / Alleopathy).
8. Herbicides: penetration and movement of herbicides in plants, selectivity
9. Herbicides: classification, mechanisms of action, formulation and application of herbicides.
10. Herbicides and soil: herbicides removal processes in soil
11. Behavior of herbicides in the plant
12. Weed resistance in herbicides
13. Ways of proper application of herbicides.

Laboratory Exercises

- Terminology, and presentation of weeds
- Broadleaf weeds. - winter
- Grass weeds - winter
- herbicide formulations - Fulfillment of the Worksheet
- Broadleaf weeds - spring
- Grass weeds - spring
- Selective herbicides.
- Carrying out trials
- Photosynthetic inhibitors

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face (Lectures in the class, lab and field exercises)	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Power point presentations, e-books, videos, Educational process is supported by the online platform e-class.	
TEACHING METHODS <i>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</i>	Semester workload	
	Lectures (3 contact hours per week x 13 weeks)	39
	Laboratory exercises (2 contact hours per week x 9 weeks)	18
	Written assignment	10
	Hours for private study of the student and preparation for mid-term or/and final examination – Participation in the examinations	58
	Course total	125 hours

<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>i. Written final examination of the lesson Minimum probable grade: 5.</p> <p>i. All the above are taking place in the Greek language and for the foreign students (e.g. ERASMUS students) in English.</p> <p>i. Oral examination can be made to students who have written tests on the same day and time that the progress or written examination of the course will take place.</p> <p>v. Theory: Final Exam (60%) written of increasing difficulty, which may include Multiple choice test, Questions of brief answer, Questions to develop a topic, Judgment questions and Exercise solving.</p> <p>v. Laboratory: Final Exam (40%). The examination in the laboratory part of the course includes questions of short answer, questions on topic development, recognition of weed species and preparation of an herbarium.</p> <p>The final Course mark is the average of the marks on Theory and Lab.</p>
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5. ATTACHED BIBLIOGRAPHY

- Naylor, R. E. (Ed.). (2008). *Weed management handbook*. John Wiley & Sons.
- Ελευθεροχωρινός Η., Ζιζανιολογία, Εκδόσεις Αγροτύπος Α.Ε., 4η έκδοση/2014. 2.
- Λόλας Π., Ζιζανιολογία, Ζιζάνια-Ζιζανιοκτόνα, Τύχη και Συμπεριφορά στο Περιβάλλον. Εκδόσεις Σύγχρονη Παιδεία, 2 η έκδοση /2007.