

1. General

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	AGRICULTURE		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	AGR 1005	SEMESTER OF STUDIES	10 ^o
COURSE TITLE	Applied Soil Science		
INDEPENDENT TEACHING ACTIVITIES <i>σε περίπτωση που οι πιστωτικές μονάδες απονέμονται σε διακριτά μέρη του μαθήματος π.χ. Διαλέξεις, Εργαστηριακές Ασκήσεις κ.λπ. Αν οι πιστωτικές μονάδες απονέμονται ενιαία για το σύνολο του μαθήματος αναγράψτε τις εβδομαδιαίες ώρες διδασκαλίας και το σύνολο των πιστωτικών μονάδων</i>		TEACHING HOURS PER WEEK	ECTS CREDITS
Lectures		3	
Seminars		1	
Total		4	5
<i>Προσθέστε σειρές αν χρειαστεί. Η οργάνωση διδασκαλίας και οι διδακτικές μέθοδοι που χρησιμοποιούνται περιγράφονται αναλυτικά στο 4.</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General background, Specialised general knowledge, Skills development		
PREREQUISITE COURSES:	There are no prerequisite courses. Students must have basic knowledge of the courses Soil Science and Soil Fertility - Crop Fertilization.		
TEACHING AND ASSESSMENT LANGUAGE:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (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></p> <p><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 lectures of the course aim to understand and consolidate basic knowledge in soil science. The aim is to deepen students' understanding, especially in the formulation of principles, rules and methodologies for the rational use of land resources. For this purpose, knowledge of the various types of soils, their geographical distribution, their properties, their interactions with other components of the ecosystem, and their reaction to external interventions or effects is necessary.</p> <p>Upon successful completion of the course, the student will be able to:</p> <p>Has acquired knowledge on maximizing the yield of soils by rationally using them, without threatening their sustainability.</p> <p>Has an understanding of the factors and processes that contribute to the genesis of soils as well as their connection with general agricultural and agro-environmental issues.</p> <p>Has an understanding of Land Classification and why it is necessary for Land Management.</p>
<p>General Competences <i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma</i></p>

<i>Supplement and appear below), at which of the following does the course aim?</i>	
<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>Teamwork</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>
	<i>.....</i>

More generally, upon completion of this course, the student will have further developed the following general abilities (from the list above):

- Search, analysis, and synthesis of data and information, using the necessary technologies
- Decision making
- Autonomous work
- Teamwork
- Generating new research ideas
- Work in an interdisciplinary environment
- Promotion of free, creative, and inductive thinking

3. SYLLABUS

- Soil units (description and behavior of soil units).
- Soil genesis and related functions of the main soil units of Greece.
- Processes of soil formation (adding materials to the soil body, loss of materials from the soil body, movement of materials to the soil body, transformation of materials to the soil body).
- Formation of A and B horizons. Clay-calcic horizon formation. Mathematical models of soil genesis. Soil functions.
- Soil classification (Physical classification systems and soil taxonomic units, Numerical soil classification systems.).
- Pedon, levels, and diagnostic horizons. Interpretation of the presence of soil genetic features (iron-manganese outcrops, iron-manganese concretions).
- Fertility - fertilization needs and their fertilization treatment.
- Soil mapping (interpretation of soil data and maps)
- Soil studies. Land use.
- Alternative land resource utilization systems.
- Evaluation of soil resources (evaluation systems).
- Suitability of soil units for specific crops and uses. Cultivation groups.
- Degradation and protection of soil resources (physical, chemical degradation, desertification, erosion).

4. TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face to face lectures.	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of ICT (powerpoint) and panel in teaching. Apiculture and Sericulture operations	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational</i>	Δραστηριότητα	Φόρτος Εργασίας Εξαμήνου
	Lectures (3 conduct hours per week x 13 weeks)	39 hours
	Seminars (1 conduct hour per week x 6 weeks) - solving representative problems	13 hours

<i>visits, project, essay writing, artistic creativity, etc.</i> <i>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>	Project	16 hours
	Educational visits	14 (2 times x 7 hours)
	Job / Job Writing	43 ώρες
	Total number of hours for the Course (25 hours of workload per ECTS credit)	125 hours (total student workload)
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <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> <i>Specifically, defined evaluation criteria are given, and if and where they are accessible to students.</i>	<p>Optionally, two exemplary advances, the first in the middle and the second at the end of the semester. The test is conducted with development questions and/or multiple-choice questions, and questions based on laboratory exercises. In order to participate in the second progression, the student must have achieved at least grade 5 (0-10 scale) in the first progression. The final grade is the average of the two grades, provided that in the second grade, the student achieves at least grade 5. This grade is 100% involved in the final grade of the course.</p> <p>A written examination with development questions and/or multiple-choice questions or problem-solving as well as questions based on laboratory exercises, unless the student participated in semester progress, so the above applies. Minimum achievable grade: 5. This grade is 100% in the final grade of the course.</p> <p>Oral examination or presentation on the theoretical or laboratory part of the course and with questions based on theory or laboratory exercises.</p> <p>All of the above takes place in the Greek language.</p>	

5. ΣΥΝΙΣΤΩΜΕΝΗ ΒΙΒΛΙΟΓΡΑΦΙΑ

Books

N.C Brady and R.R. Weil, 2011. Εδαφολογία, η φύση και οι ιδιότητες των εδαφών. 14th edition, απόδοση στα ελληνικά, Εκδ Έμβρυο
 Το έδαφος - Γένεση-Ιδιότητες -Ταξινόμηση. 2008. Δημ. Αλιφραγκής, Εκδόσεις Αϊβαζή, Θεσ/νικη
 Μαθήματα Εφαρμοσμένης Εδαφολογίας. 1995. Νικ. Γιάσογλου. Πανεπιστημιακές εκδόσεις

Scientific Journals:

Soil Science
 Soil Science Society of America Journal
 Soil and Tillage Research