COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Biosystems & Agricultural Engineering		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**BAE_420**	**SEMESTER**	**4TH**
COURSE TITLE	**SOIL SCIENCE**		

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	
Tutorials	0	
Laboratory	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*	Background General Knowledge Skills development
PREREQUISITE COURSES:	There are no prerequisite courses.
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek .-For Erasmus students in English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
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 material of the course aims at acquiring knowledge and understanding the basic concepts of SOIL. In particular, soil is studied as a means of plant growth and not as an independent natural system.

The soil determines the possibility of agricultural development of an area and participates in geomorphological and hydrological processes.

He has understood the physical properties of it.

. He has understood its chemical properties.

Has understood the mineralogical properties of it.

Has understood the role of soil organic matter.

He has understood the factors involved in his fertility.

He has understood that soil is an irreplaceable and valuable natural resource that should be treated and used with due care so that it is kept in good condition in perpetuity.

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 *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* *……* *Others…* *…….*
Search, analysis and synthesis of data and information, using the necessary technologies Production of new research ideas Respect for the natural environment Promoting free, creative and inductive thinking	

(3) SYLLABUS

- Generally about soil systems
- Soil factors (basic concepts).
- Granular soil texture.
- Mineral composition of soils (Decomposition. Primary minerals: structure and physico-chemical properties thereof. Secondary minerals: structure and physico-chemical properties thereof. Oxides - iron-aluminum-manganese hydroxides). Amorphous minerals.
- Soil chemical properties (Ion exchange and their importance in plant nutrition. Degree of saturation with bases. Electric potential Z, colloid thrombosis. Soil solution and electrolytes. Soil regulation capacity).
- Soil organic matter (Humic - organometallic compounds. Argylohemic complexes. Importance of organic matter).
- Physical properties of soil (Structure, porosity. Structural improvement. Soil temperature and its importance. Soil air and its importance).
- Soil morphology (Soil distribution and its description. Soil color Soil horizons and levels. Soil classification. Greek soil classes. Mapping and description of cartographic units).

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face to face teaching, Experiential activities, Laboratory training</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>• Use of ICT (power point) in Teaching
• Use of ICT (power point) in Laboratory Training
• Use of ICT in Communication with students (Learning process support through the electronic platform e-class).</td></tr>
<tr><td>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</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>39</td></tr>
<tr><td>lab</td><td>26</td></tr>
<tr><td>UNGUIDED STUDY</td><td>30</td></tr>
<tr><td>Study hours. Literature survey</td><td>30</td></tr>
<tr><td>Course total</td><td>125</td></tr>
</table>
</td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION
Description of the evaluation procedure</td><td>1. The laboratories participate by 30% in the final grade. In order to be examined in theory, the student must have</td></tr>
</table>

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.*	completed all the laboratories and have been successfully examined in them. 2. The main assessment criteria focus on understanding and correlating the knowledge that students gain from the course with other knowledge. Particular emphasis is placed on whether they have developed the ability to apply this knowledge to crop selection and to assess the impact of these changes on the environment. Emphasis is also placed on demonstrating critical ability and justifying the choices they make in each problem. 3. Evaluation is dynamic. It mainly involves problem solving. is done orally or in writing or with a combination of the two, with or without pre-examination on the basic principles of the course, with or without exculpatory advances and with other test or inventive methods, depending on the composition of the dynamics and the needs of the audience. 4. The above are done in the Greek language. For foreign language students (eg Erasmus students) conducted in English

(5) ATTACHED BIBLIOGRAPHY

Εδαφολογία. 2008. Κυρ. Παναγιωτόπουλος, Εκδόσεις: Άγις- Σάββας Δ. Γαρταγάνης, Θεσ/νικη