COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	TECHNOLOGY			
DEPARTMENT	ENVIRONMENTAL SCIENCES			
LEVEL OF STUDY	*Undergraduate*			
COURSE UNIT CODE	**NEW COURSE**	**SEMESTER**	**8th**	
COURSE TITLE	MANAGEMENT OF AGRICULTURAL ECOSYSTEMS			
INDEPENDENT TEACHING ACTIVITIES in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits			**WEEKLY TEACHNG HOURS**	**CREDITS**
THEORETICAL BACKGROUND			3	3
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development				
PREREQUISITE COURSES:	NO			
LANGUAGE OF INSTRUCTION &EXAMINATION/ASSESSMENT:	GREEK			
THE COURSE IS 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 (certain) level, which students will acquire upon successful completion of the course, are described in detail.
It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and*

APPENDIX B

- *Guidelines for writing Learning Outcomes*

The course aims to help students understand the modern theories, principles and possibilities for sustainable management of agricultural ecosystems and sustainable agricultural development. It provides the analysis of the concept, the structure and operation of the Agricultural Ecosystem, the management of water and soil resources in the agricultural ecosystem, as well as the impact of air pollution and agrochemicals on the agro-ecosystem, while proposing ways to preserve, promote and restore them. It also analyzes issues related to the definition of sustainable agriculture - Dimensions and objectives of

sustainability - Mechanisms for sustainability and the dissemination of knowledge and information of the rural population in the context of modern agriculture.

Upon successful completion of the course, the student will be able to:

1. To develop and cultivate the necessary knowledge and skills, which will be used as tools to understand the complexity of modern and diachronic agricultural issues and their holistic approach.
2. To understand the principles and procedures of the structure and operation of the agro-ecosystem
3. To assess the threats and risks of natural and man-made pollutants in the rural environment and to rationally address their consequences, based on the sustainable model of agriculture along the way for sustainable sustainability and development.
4. To take action on the basis of sustainable development and strategic planning of innovative sustainable management solutions in degraded agricultural ecosystems as part of environmental agriculture development.
5. To gain knowledge about the ecological and economic value of these ecosystems as well as ways of preserving, highlighting and restoring them.
6. To process and evaluate the results of the management methods that will be applied in each case and to deepen the experiential education of the rural populations in Organic Agriculture and Sustainability.

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies,	*Project planning and management*
Adapting to new situations	*Respect for diversity and multiculturalism*
Decision-making	*Environmental awareness*
Individual/Independent work	*Social, professional and ethical responsibility and sensitivity to gender issues*
Group/Team work	*Critical thinking*
Working in an international environment	*Development of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Introduction of innovative research	*(Other…….citizenship, spiritual freedom, social awareness, altruism etc.)*
	…….

- Adaptation to new situations
- Work in an interdisciplinary environment
- Production of new research ideas
- Respect for the natural environment
- Practice criticism and self-criticism
- Promoting free, creative and inductive thinking

(3) COURSE CONTENT

Theory:

1. Agricultural systems (General concepts). Classification of agroecosystems - Ecological functions in the agroecosystem.
2. Analysis of the structure and operation of the Ecosystem. Management of water and soil resources in natural agro-systems - Erosion and effects on ecosystems.

3. Special features of agro-ecosystems - Protogenic Productivity. Effects of light on the basic metabolic processes of plants, germination, growth and development.
4. Wetlands - Effects of wetland ecosystems on agricultural ecosystems.
5. Combination of agritourism and organic farming. Agriculture and environment interaction.
6. Organic products - Integrated management products - Quality assurance systems.
7. Effect of pollution on agro-ecosystems. Pollution and restoration of agro-ecosystems. - Plant sanitation of polluted soils and water. Management of preparations and packaging of agrochemicals.
8. Agricultural technology and human factor. Systemic approach and sustainable agricultural development. Approaches and methodologies for sustainable management and development.
9. Identification of sustainable agriculture - Dimensions and objectives of sustainability - Mechanisms for sustainability. Dissemination of knowledge and information of the rural population in the context of agricultural agriculture.
10. Agriculture and the rural environment - Aggressiveness and nature - Integrated sustainable management of the agro-ecosystem - Climate change.
11. Management of traditional agroforestry systems. Installation of modern agroforestry systems. Main tree species for modern agroforestry systems.
12. Governance of the rural area. Agri-environmental programs. Areas of agricultural production, as poles of alternative forms of ecotourism.
13. Complete sustainable agroecosystem management. Possibilities of rural restructuring of the countryside. Agri-environmental policies.

(4) TEACHING METHODS-ASSESSMENT

<table>
<tr><td>MODES OF DELIVERY
Face-to-face, in-class lecturing, distance teaching and distance learning etc.</td><td>• Lectures in the classroom or by distance
• Team discussion</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in teaching, Laboratory Education, Communication with students</td><td>• Powerpoint.
• View video material.
• e-mail.
• e-class</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</td><td><table><tr><th>Activity/Method</th><th>Semester workload</th></tr><tr><td>Lectures</td><td>39</td></tr><tr><td>Theory study</td><td>21</td></tr><tr><td>Team working</td><td>15</td></tr><tr><td>Course total
(25 hours of workload per credit unit)</td><td>75</td></tr></table></td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS
Detailed description of the evaluation procedures:

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short-answer questions, open-ended</td><td><u>Students are assessed in Greek. The final grade is formed by tests which include:</u>

• Written exam: 80% of the final grade (A)
• Tasks: 20% of the final grade (B)

Final grade = 80% (A) + 20% (B)</td></tr>
</table>

questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc. **Specifically, defined evaluation criteria are stated, as well as if and where they are accessible by the students.**	

(5) SUGGESTED BIBLIOGRAPHY:

Suggested bibliography:

1**. Siardos G. & Koutsouris A., 2011, (3rd ed. In Greek)** Sustainable Agriculture and Development. ISBN: 978-960-865-82-6. ZYGOS Publications **Eudoxus Code**: 12867128

2**. Polyrakis G., 2003** . Environmental Agriculture (In Greek). ISBN: 978-960-8336-11-2. Publisher Psichalos Bro, Eudoxus Code: 12593

3**. Kizzos A. 2018 (In Greek)** . Rural Development. ISBN: 978-960-418-688-4. Tziolas Publications, Eudoxus Code: 68372845

4. Gerakis P. & Tsiouris S., 2010.(In Greek) Agriculture and Wtelands, Synchroni Paideia Publications

5. Gerakis P. & Kalbourtzi K.,, 2008. (In Greek) Agricultural Ecology, Synchroni Paideia Publications

6. Arabatzis G. & Polyzos S. , 2014. (In Greek) Natural Resources, Environment and Development, Tziolas Publications.

7. **Woods M., 2011 (In Greek) .** Rural Geography. ISBN: 978-960-218-717-3 Kritiki Publications, Eudoxus Code: 7657864