COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	TECHNOLOGY			
DEPARTMENT	ENVIRONMENTAL SCIENCES			
LEVEL OF STUDY	*Undergraduate*			
COURSE UNIT CODE	NEW **COURSE**	**SEMESTER**	5,6,7	
COURSE TITLE	QUALITY ASSURANCE IN ENVIRONMENTAL MANAGEMENT SYSTEMS			
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	4
LABORATORY PRACTICE				
TOTAL			3	4
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development	SCIENTIFIC AREA: (α) ENVIRONMENTAL MANAGEMENT AND RESTORATION (β) WASTE MANAGEMENT (γ) ENVIRONMENTAL PLANNING (δ) ENVIRONMENTAL SOCIOECONOMICS			
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*

An Environmental Management System (EMS) is a Structured Management Framework designed to assist companies/organizations to decrease its environmental impact using suitable business practices. Since EMSs differ in quality and application field, several voluntary standards have been developed, that are recognized at National. European and International levels. The environmental standards are separated in management standards and product standards. The management standards provide a system for the management of environmental impacts while the product standards provide to the consumer the capability to recognize the products that are friendly to the environment. The most widespread EMSs are:

- ISO 14001 – International Standard
- EMAS - (Eco-Management and Audit Scheme), European Standard, which includes EU countries, candidate countries and also countries of the wider European Economic Zone.

The module aim is:
For students to understand the principles of environmental management of businesses and organizations, the concept of an EMS and the methodology being used for its development, establishment and application, to be acquainted with the use of these standards and the application of one of them. This aim is supported with the presentation of analytical case studies for the development and application of EMSs in various organisations.

At the end of the module students will be able to:

- Understand the importance of environmental management for organizations.
- Understand the ISO 14001 environmental management standard.
- Understand the EMAS environmental management standard.
- Understand the sustainability business reports .
- Locate environmental issues and views.
- Draft environmental management programs.
- Review the operation of an EMS.
- Apply an EMS.

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

- Adjust to new situations.
- Work in a mutli-disciplinary environment
- Take decisions
- Work autonomously

- Develop innovative research ideas
- Respect diversity and multiculturalism
- Project planning and management
- Respect for the natural environment
- Apply critique and self-critique
- Promote free, creative and inductive thinking

(3) COURSE CONTENT

1. Introduction - Definitions.
2. Sustainability and Environment.
3. Environmental Management Systems.
4. The ISO 14001 standard
5. Eco-Management and Audit Scheme (EMAS) Regulation.
6. Development stages of an EMS.
7. Environmental Issues and Views.. Risk Analysis.
8. Methodology for EMS development
9. EMS Application tools
10. Review of environmental parameters within an EMS framework.
11. EMS case studies.
12. EMS case studies.
13. EMS case studies.

(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
• Group discussions
• Case studies</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in teaching, Laboratory Education, Communication with students</td><td>• Powerpoint presentations
• Video presentations
• Communication via e-mail
• E-class platform</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>Workshop</td><td>30</td></tr>
<tr><td>Laboratory work</td><td>31</td></tr>
<tr><td>Theory study</td><td>100</td></tr>
<tr><td>Weekly individual evaluation reports for laboratory exercises</td><td>39</td></tr>
<tr><td>Course total
(25 hours of workload per credit unit)</td><td>30</td></tr>
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</td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT</td><td><u>Evaluation can be done in either Greek or English language.</u></td></tr>
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METHODS **Detailed description of the evaluation procedures:** **Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended 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.**	***The final grade is the outcome of the following evaluations:*** • Written exam: 70% of the final grade (A) • Assignments: 30% of the final grade (B) **Final grade = 70% (A) + 30% (B)**

(5) SUGGESTED BIBLIOGRAPHY:

-***Suggested bibliography***

- Arvanitogiannis, I.S., Eystratiadis M.M. & Bourountopoulos I.D>. 2000, ISO 9000 and ISO 14000, University Studio Press
- ISO 14001, Environmental management systems -- Requirements with guidance for use
- Regulation, E. C. No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS), repealing Regulation (EC) No 761/2001 and Commission Decisions 2001/681/EC and 2006/193.
- Sheldon, C., & Yoxon, M., 2012. Environmental management systems: a step-by-step guide to implementation and maintenance. Routledge.

-***Complementary bibliography***