

COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	TECHNOLOGY		
DEPARTMENT	ENVIRONMENTAL SCIENCES		
LEVEL OF STUDY	<i>Undergraduate</i>		
COURSE UNIT CODE	NEW COURSE	SEMESTER	2 th
COURSE TITLE	INTRODUCTION TO ENVIRONMENTAL ENGINEERING		
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 TEACHING HOURS	CREDITS	
THEORETICAL BACKGROUND	4	5	
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development	BACKGROUND		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION & EXAMINATION/ASSESSMENT:	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>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:</p> <p>APPENDIX A</p> <ul style="list-style-type: none"> • 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 <p>APPENDIX B</p> <ul style="list-style-type: none"> • Guidelines for writing Learning Outcomes
<p>Environmental engineering is one of the most popular, complex and fast-growing branches of engineering. The field of environment includes issues of public health, aesthetics and the impact of all development activities, legislation on pollution control, standards, regulations, enforcement. Traditionally, the application of the principles of engineering to protect and improve the quality of the environment and the protection of public health has been called the mechanics of health or public</p>

health. Around 1968 this changed to Environmental Engineering.

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

1. Understand the operation of water, waste and solid waste management units.
2. To control the air pollution.
3. To be able to assess the energy requirements of society and the ways and means to protect the environment from the various pollutants created by the production and consumption of various goods and comfort conditions.

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?

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

- Search, analyze and synthesize data and information, using the necessary technologies
- Decision making
- Autonomous work
- Teamwork
- Project design and management
- Respect for the natural environment
- Promoting free, creative and inductive thinking

(3) COURSE CONTENT

Theory

1. Introduction - General concepts
2. Water pollution
3. Water treatment
4. Wastewater treatment
5. Air pollution
6. Solid waste management
7. Ecology
8. Renewable energy sources
9. Environmental impact assessment
10. Sound pollution

(4) TEACHING METHODS-ASSESSMENT

<p>MODES OF DELIVERY Face-to-face, in-class lecturing, distance teaching and distance learning etc.</p>	<ul style="list-style-type: none"> • Lectures in the classroom or by distance • Team discussion 	
<p>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY Use of ICT in teaching, Laboratory Education, Communication with students</p>	<ul style="list-style-type: none"> • Powerpoint. • View video material • e-mail. • e-class 	
<p>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.</p>	<p>Activity/Method</p>	<p>Semester workload</p>
	<p>Lectures</p>	<p>52</p>
	<p>Theory study</p>	<p>38</p>
	<p>Team working</p>	<p>35</p>
	<p>Course total <i>(25 hours of workload per credit unit)</i></p>	<p>125</p>
<p>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 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.</p>	<p><u>Students are assessed in Greek or English. The final grade is formed by tests which include:</u></p> <ul style="list-style-type: none"> • Written exam: 70% of the final grade (A) • Tasks: 30% of the final grade (B) <p>Final grade = 70% (A) + 30% (B)</p>	

(5) SUGGESTED BIBLIOGRAPHY:

-Suggested bibliography

- Basic Environmental Engineering, R. C. Gaur, Published by New Age International (P) Ltd., Publishers, ISBN (13): 978-81-224-2701-1 - ENVIRONMENTAL SCIENCE and ENGINEERING, EDITED BY JAMES R. PFAFFLIN, EDWARD N. ZIEGLER, Published in 2006 by CRC Press Taylor & Francis Group, ISBN: 13: 978-0-8493-9843-8- Unit Operations in Environmental Engineering Louis Theodore, R. Ryan Dupont and Kumar Ganesan, Wiley, ISBN 978-1-119-28363-8 - HANDBOOK OF CHEMICAL AND ENVIRONMENTAL ENGINEERING CALCULATIONS, Joseph P. Reynolds, John S. Jeris, Louis Theodore, Wiley, ISBN 0-471-40228-1