COURSE OUTLINE

(1) GENERAL

SCHOOL	**UNIVERSITY OF THESSALY**		
ACADEMIC UNIT	DEPARTMENT OF CIVIL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ΓΚ3300	**SEMESTER**	4th
COURSE TITLE	ENVIRONMENTAL ENGINEERING		

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**
	4	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, specialized general knowledge, skills development*	General background
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	
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 course serves as a fundamental introduction and briefing for students on the general principles governing the anthropogenic and natural environment, with an emphasis on the institutional framework of environmental technology and the application of pollution control methods and systems in key areas of environmental impacts related to Civil Engineering projects. Students learn the relevant concepts and terms concerning environmental legislation, natural & anthropogenic ecosystems and their conservation, as well as the principles of sustainable development. The course covers key topics of environmental impact, including air, noise, waste (solid and liquid), flora, fauna, etc. This course is an essential introductory subject for students, providing an overview of the various fields offered by the department of Civil Engineering.

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
thinking 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
……
Others…
…….

- Research, analysis, and synthesis of data and information, utilizing the necessary technologies
- Decision-making
- Independent analytical work at both group and individual levels
- Work in an interdisciplinary environment
- Environmental planning and project management
- Promotion of free, creative, and inductive thinking

(3) SYLLABUS

S/N teaching week	Course Content
1	Basic Concepts of Environmental Protection & Sustainable Development
2	Institutional Framework for Conducting Preliminary & Environmental Impact Studies
3	Environmental Topics – Environmental Impact Assessment
4	Land Uses - Sensitive Areas
5	Natural & Anthropogenic Ecosystems
6	Air Pollutants – Atmospheric Environment: Key Pollutants – Emission Sources
7	Air Pollutants – Atmospheric Environment: Dispersion Models
8	Acoustic Environment: Noise Sources During Construction and Operation
9	Acoustic Environment: Basic Principles of Noise Protection
10	Solid & Liquid Waste: Sources – Disposal – Treatment
11	Solid & Liquid Waste: Waste Transport – Management – Recycling
12	Environmental Parameter Management & Monitoring Programs
13	Environmental Terms Approvals (ETA)
14	Review

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY ***Face-to-face, Distance learning, etc.***	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Lectures with PowerPoint presentations, exercises, and announcements on e-class

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

Activity	*Semester workload*
Lectures - Exercises	14*4=56 hours
Study	14*3=42 hours
Exams	3 hours
Exam preparation	24 hours
Course total	*125*

the hours of non- directed study according to the principles of the ECTS		
STUDENT PERFORMANCE EVALUATION ***Description of the evaluation procedure*** *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.*	**Evaluation language** Greek or English **Assessment methods** 100% written examination: Closed books and notes. No audiovisual aids. Theory questions (essay-type), short-answer questions and problem-solving exercises	

(5) **ATTACHED BIBLIOGRAPHY**

- Δρ. Κ. Βογιατζής, Περιβαλλοντική Τεχνική & Θεσμικό Πλαίσιο Εφαρμογής, Γ' ΕΚΔΟΣΗ, Εκδόσεις ΣΥΜΜΕΤΡΙΑ, 2015, 584 σελ. (ISBN 978-960-266-390-5)
- Δίκαιο Περιβάλλοντος, (Δημόσιο Δίκαιο και Περιβάλλον) Γλυκερία π. Σιουτη Εκδόσεις ΑΝΤ. Ν. ΣΑΚΚΟΥΛΑ, Αθήνα Κομοτηνή 1993
- Η περιβαλλοντική πολιτική στην Ελλάδα ΟΟΣΑ Παρίσι 1983
- Περιβάλλον (Μελέτες Περιβαλλοντικών Επιπτώσεων) Γ. Βαβίζος, Α. Μερτζάνης Εκδόσεις ΠΑΠΑΣΩΤΗΡΙΟΥ, 2002
- Οικολογική Θεωρία και Πράξη στις Περιβαλλοντικές Μελέτες (χλωρίδα, πανίδα και οικοσυστήματα) Γ. Βαβίζος, κ. Ζαννάκη Εκδόσεις ΠΑΠΑΖΗΣΗ,1998
- Υδατικοί πόροι: Ι. Τεχνική Υδρολογία Γ. Τσακίρης, ΚΑΘ. ΕΜΠ (Υπεύθυνος έκδοσης)- Εκδόσεις ΣΥΜΜΕΤΡΙΑ, 1995
- Ατμοσφαιρική Ρύπανση (επιπτώσεις, έλεγχος & εναλλακτικές τεχνολογίες Ι. Β. Γεντεκάκης, Παν. Πάτρας Εκδόσεις ΤΖΙΟΛΑ
- Θάμνοι και δέντρα στην Ελλάδα, Τόμος ΙΙ Θ.Ι. Αραμπατζής Οικολογική κίνηση Δράμας & ΤΕΙ Καβάλας, Δράμα 2001
- Wastewater engineering : treatment, disposal, and reuse, Metcalf & Eddy, Inc. 3rd ed., revised by George Tchobanoglous, Franklin L. Burton. New York : McGraw-Hill, c1991.