COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED SCIENCES		
DEPARTMENT	ENVIRONMENTAL ENGINEERING (DIVISION OF ENVIRONMENTAL GEOTECHNOLOGY ENGINEERING)		
LEVEL OF STUDY	*UNDERGRADUATE*		
COURSE UNIT CODE	**GE5680**	**SEMESTER OF STUDY**	6th
COURSE TITLE	Concrete Technology and Structures		

COURSEWORK BREAKDOWN	**TEACHING WEEKLY HOURS**	**ECTS Credits**
Theory - lectures	2	5
Laboratory exercises	2	
Total (hours)	**4**	

COURSE UNIT TYPE	SC: Specialization Courses
PREREQUISITES :	
LANGUAGE OF INSTRUCTION/EXAMS:	greek
COURSE DELIVERED TO ERASMUS STUDENTS	no
MODULE WEB PAGE (URL)	http://geope.teikoz.gr/undergraduate/ug_studies.htm

2. LEARNING OUTCOMES

Learning Outcomes

On successful completion of this module the learner will be able to Deal with problems that deal with basic problems or definitions about concrete technology and concrete based structures.

General Skills

Upon successful completion of the programme students will:

- have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering

- be able to properly apply the theoretical and practical knowledge acquired during the study period

- be able to cover a wide spectrum of scientific and technical knowledge related to mining and geotechnical projects as well as the sector of environmental reclamation

- have gained the necessary competencies to proceed to their second cycle study
Basic skills about structures, concrete material and concrete technology.

3. COURSE CONTENTS

Introduction. Concrete technology and materials. Composition of concrete. Steel properties and variety. Defining the size of columns, beams and plates made by concrete and steel. Building foundations. Estimating the volume of concrete and the mass of steel needed building a structure. Laws on concrete structures. Concrete and steel faults. Earthquakes and buildings.

- M,Q,N Diagrams
- Steel properties and variety.
- Defining the size of columns, beams and plates made by concrete and steel. Building foundations.
- Estimating the volume of concrete and the mass of steel needed building a structure.
- Types of forces. Static and dynamic conditions.
- Bending on structures
- Shearing on structures

Torsion on structures

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	At class
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	

TEACHING METHODS

Method description	***Semester Workload***
lectures	13
Exercises	13 in theory + 13 at laboratory
Group work	
Educational visit to industries	
Atomic workout	60
Personal study	*26*
Total (ects credits * 25)	125

ASSESSMENT METHODS

- Written final examinations in theory (50 %)
- Written final examinations at laboratory (50 %) (50% exams and 50 % atomic workout).

5. RESOURCES

- *Recommended Book Resources:*
- *Recommended Article/Paper Resources:*

Choice 1 Book title: Κατασκευές και θεμελιώσεις από οπλισμένο σκυρόδεμα, «*Eudoxus*» book code: **45372**, Edition: , Writer: Τάσιος, Θεοδόσιος Π, ISBN: 978-960-266-025-6, Distributor (Edition): Συμμετρία

Choice 2 Book title: Οπλισμένο σκυρόδεμα - Από το Α ως το Ω, «*Eudoxus*» book code: **2106**, Edition: 2009. Writer: Οικονόμου Χρίστος, ISBN: 960-8257-59-X, Distributor (Edition): Σέλκα – 4Μ

Choice 3 Book title: **Ευρωπαϊκές κατασκευές από οπλισμένο σκυρόδεμα**, «*Eudoxus*» book code: **12441** , Edition: 2005, Writer: Avak Ralf, ISBN: 960-512-080-1, Distributor (Edition): Χ. ΓΚΙΟΥΡΔΑ & ΣΙΑ ΕΕ