### COURSE OUTLINE

#### (1) GENERAL

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>ENGINEERING SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC UNIT</td>
<td>CIVIL ENGINEERING DEPARTMENT</td>
</tr>
<tr>
<td>LEVEL OF STUDIES</td>
<td>UNDER GRADUATE</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>2306531</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>6(^{th})</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>Reinforced Concrete II</td>
</tr>
</tbody>
</table>

#### INDEPENDENT TEACHING ACTIVITIES

<table>
<thead>
<tr>
<th></th>
<th>WEEKLY TEACHING HOURS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and classwork</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Laboratory Exercises</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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, specialised general knowledge, skills development

#### PREREQUISITE COURSES:

Yes (Mechanics II)

#### LANGUAGE OF INSTRUCTION and EXAMINATIONS:

Greek (official)

#### IS THE COURSE OFFERED TO ERASMUS STUDENTS?

Yes (in English for ERASMUS students)

#### COURSE WEBSITE (URL)

**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 aim of the course is the comprehension of the behavior of concrete and its use in structures, the ability to evaluate its properties through experimental procedures and the design of members and structures.

Upon completion of the course, students will have:

1. Knowledge of the behavior of reinforced concrete structures.
2. In-depth knowledge and critical understanding of theory and principles of structural design and calculation of reinforced concrete structures, since they could use new technologies and information systems in analysis and design of reinforced concrete structures.
4. Knowledge to put what they learn to solve practical problems of civil engineering.
5. Ability to apply experimental procedures during design and construction process of a structure.
6. Ability to experimentally evaluate the mechanical properties of concrete, rate its quality and evaluate its strength using destructive and non-destructive techniques.
7. Knowledge and skills in evaluating key parameters as the ductility and strength of reinforced concrete members.
8. Skills to determine the need of structural repair and strengthening and knowledge of retrofitting techniques using resins and FRPs.
9. Background knowledge to apply what they learn in courses Repair and Strengthening and Prestressed Concrete.
10. Ability to develop personal responsibility and offer scientific opinion.
11. Ability to manage time in an appropriate manner.

**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?

<table>
<thead>
<tr>
<th>General Competence</th>
<th>Course Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search, analysis and synthesis of data and information,</td>
<td>Project planning and management</td>
</tr>
<tr>
<td>with the use of the necessary technology</td>
<td>Respect for difference and multiculturalism</td>
</tr>
<tr>
<td>Adapting to new situations</td>
<td>Respect for the natural environment</td>
</tr>
<tr>
<td>Decision-making</td>
<td>Showing social, professional and ethical responsibility and</td>
</tr>
<tr>
<td>Working independently</td>
<td>Sensitivity to gender issues</td>
</tr>
<tr>
<td>Team work</td>
<td>Criticism and self-criticism</td>
</tr>
<tr>
<td>Working in an international environment</td>
<td>Production of free, creative and inductive thinking</td>
</tr>
<tr>
<td>Working in an interdisciplinary environment</td>
<td>Others...</td>
</tr>
<tr>
<td>Production of new research ideas</td>
<td>...</td>
</tr>
</tbody>
</table>

Specifically, students will be able to perform:

Search, analysis and synthesis of data and information, using the necessary technologies.
Decision Making.
Autonomous work.
(3) Course Content

**Theory**

**Lab**

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>Face-to-face lectures, laboratories</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</td>
<td>Teaching using ICT, Communication and Electronic Submission</td>
</tr>
<tr>
<td>TEACHING METHODS</td>
<td>Activity</td>
</tr>
<tr>
<td></td>
<td>Lectures</td>
</tr>
<tr>
<td></td>
<td>Classwork</td>
</tr>
<tr>
<td></td>
<td>Laboratory Exercises</td>
</tr>
<tr>
<td></td>
<td>Preparation for writing laboratory reports-homework</td>
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<td></td>
<td>Preparation for Project</td>
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<tr>
<td></td>
<td>Personal Study</td>
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<tr>
<td></td>
<td>Course total</td>
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STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

Language of evaluation: Greek

**Theory:**
Final written examination: 48%
Preparation for Project: 12%

**Laboratory:**
Final written examination: 40%
7. Demakos C., Lecture Notes for Reinforced Concrete Laboratory.