## COURSE OUTLINE

(1) GENERAL

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>ENGINEERING SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPARTMENT</td>
<td>MECHANICAL ENGINEERING DEPARTMENT</td>
</tr>
<tr>
<td>LEVEL OF STUDIES</td>
<td>UNDER GRADUATE</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>2702005</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>2</td>
</tr>
<tr>
<td>COURSE TITLE</td>
<td>Strength of Materials</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>WEEKLY TEACHING HOURS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures 3</td>
<td></td>
</tr>
<tr>
<td>Laboratory 2</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

Specialized Knowledge, skills development

### PREREQUISITE COURSES:

- general background,
- special background,
- specialised general knowledge, skills development

### LANGUAGE OF INSTRUCTION and EXAMINATIONS:

Greek (official)- English (optional)

### IS THE COURSE OFFERED TO ERASMUS STUDENTS

YES

### 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


Upon completion of the course, students will be able to:
1. They have acquired the knowledge and the understanding of issues related to statics and strength of rigid bodies
2. Be able to use all the scientific knowledge in order to understand strength of materials’ problems
3. To have the ability to analyze the problems of mechanisms and resolve them

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, using the necessary technologies.
- Project planning and management
- Respect for difference and multiculturalism
- Adapting to new situations
- Respect for the natural environment
- Decision-making
- Showing social, professional and ethical responsibility and sensitivity to gender issues
- Team work
- Criticism and self-criticism
- Working independently
- Working in an interdisciplinary environment
- Production of free, creative and inductive thinking
- Working in an international environment
- Others...
- Production of new research ideas

(3) SYLLABUS


(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<thead>
<tr>
<th>DELIVERY</th>
<th>Lectures, laboratories, distance learning methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</td>
<td>Use of ICT in teaching, laboratory education, communication with students</td>
</tr>
<tr>
<td>TEACHING METHODS</td>
<td>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 the hours of non-directed study according to the principles of the ECTS</td>
</tr>
<tr>
<td>Activity</td>
<td>Semester workload</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Lectures</td>
<td>26</td>
</tr>
<tr>
<td>Laboratory Exercises</td>
<td>26</td>
</tr>
<tr>
<td>Preparation for Writing laboratory reports-homework</td>
<td>25</td>
</tr>
<tr>
<td>Preparation for Homework on case studies (individual or group work)</td>
<td>25</td>
</tr>
<tr>
<td>Personal study</td>
<td>47.5</td>
</tr>
<tr>
<td>Course total</td>
<td>137.5</td>
</tr>
</tbody>
</table>

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.

Written examination: 60%
Laboratory exercise: 40%
Optional job preparation and presentation of up to 20%, less than the proportion of written examination

(5) ATTACHED BIBLIOGRAPHY

- History of Strength of Materials (Dover Civil and Mechanical Engineering),
• Stephen P. Timoshenko, Dover Publications 1983
• Αντοχή των υλικών, Ευριπίδης Παπαμίχος, Νίκος Χ. Χαραλαμπάκης, εκδ. Τζιόλα
• Τεχνική μηχανική και αντοχή υλικών, Herr Horst, εκδ. Ίων
• Πειραματική Αντοχή των Υλικών, θεωρία και εργαστήριο, Ι.Ν.ΠΡΑΣΙΑΝΑΚΗΣ, Σ.Κ. ΚΟΥΡΟΥΚΛΗΣ
• ΑΝΤΟΧΗ ΤΩΝ ΥΛΙΚΩΝ, Π.Βουθούνης, αυτοέκδοση
• Αντοχή των υλικών, Χαρώνης, Παναγιώτης, Σύγχρονη Εκδοτική