MECHANICAL DESIGN II

COURSE OUTLINE

Responsible: Markos Petousis

1. GENERAL			
SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Mechanical Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0813.8.001.0	**SEMESTER**	2nd
COURSE TITLE	Mechanical Design II		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	5
Total	**0**	**5**

COURSE TYPE general background, special background, specialised general knowledge, skills development	
PREREQUISITE COURSES	3d CAD Machine Elements Mechanical drawing Mechanical Design I
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Spring Semester
COURSE WEBSITE (URL)	

2. LEARNING OUTCOMES

Learning outcomes

"Mechanical Design II" is a continuation of "Mechanical Design I" course, for the acquisition of an integrated knowledge and the development of the skills of the structural Engineer to the students, which aims at:

- the application of the basic engineering knowledge already acquired by the student, for integrated and autonomous management of a technical problem, related to the design of a Mechanical device

- the student's understanding and application of the advanced imaging and computing tools provided by the CAD / CAE platforms in the design and optimization of products and technology systems

General Competences

The student who has successfully completed the Mechanical Design II class, will have the ability to:

- Analyze a technical problem related to the design of a mechanical product
- Seek ideas that lead to the solution of a technical problem
- Select the optimum solution and covert it to a mechanical setup
- Implement full design of the mechanical setup
- Manufacture a prototype model for the mechanical setup

Present the developed solution of the technical problem studied

3. SYLLABUS

The mechanical design process

2. Technical problems formulation and analysis

3. Collection and processing of information

4. Specifications list

5. Conceptual Design

6. Synthesis and evaluation of technical solutions

7. Development and design of a technical solution

- Materials, parts, standardization
- Loads, construction analysis
- Kinematics, mechanisms
- Safety
- Manufacturing and production
- Assembly
- Maintenance, reliability
- Aesthetics, ergonomics
- Billing
- Innovation
- Design optimization

8. Production systems and processes selection

9. Organizing and administration of working groups

10. Mechanical design software tools in the computer

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Project
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	

5. ATTACHED BIBLIOGRAPHY