(B) Course information in english

General course information:

Course title:	Mechanics I	**Course code:**	CE02_UM3
Credits:	6	**Work load (hours):**	125
Course level:	Undergraduate ☑	Graduate ☐	
Course type:	Mandatory ☑	Selective ☐	
Course category:	Basic ☑	Orientation ☐	
Semester:	3o	**Hours per week:**	4

Course objectives (capabilities pursued and learning results):

The course is introductory to mechanics. Physical concepts like force, distributed force, moment, internal forces, work, energy, friction etc are described. The topics that are developed include equilibrium, stability, motion, constraints and virtual work. Planar and three-dimensional structural determinant structures are examined. In particular, techniques are developed for the analysis of beams, cables, arches, frames, trusses.

Prerequisites:

- Mathematics I
- Descriptive Geometry
- Physics I

Instructor's data:

Name:	Antonios Giannakopoulos
Level:	Professor
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Other tutors:	-

Specific course information:

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Forces and Moments.	**4**	**3**
2	Work and Energy.	4	**3**
3	Equilibrium of points.	4	**3**
4	Equilibrium of 2-D bodies.	4	**3**
5	Equilibrium of 3-D bodies.	4	**3**
6	Internal forces and moments.	4	**3**
7	Virtual Work theorem.	4	**3**
8	Beam analysis (statically determinant).	4	**3**
9	Frame analysis (statically determinant).	4	**3**
10	Truss analysis (statically determinant).	4	**3**
11	Potential.	4	**3**
12	Stability.	4	**3**
13	Contact.	4	**3**
14	Friction.	4	**3**

Additional hours for:			
Class project	**Examinations**	**Preparation for examinations**	**Educational visit**
		13	

Suggested literature:

- Vardoulakis J. and Giannakopoulos A. E., 2008, Technical Mechanics I, Publisher Symmetria.
- Beer E. P. and Johnston E. R., 1977, Vector Mechanics for Engineers. Statics and Dynamics, McGraw-Hill.

Teaching method *(select and describe if necessary -* **weight***):*		
Teaching	☑	70%
Seminars	☐	…….%
Demonstrations	☐	…….%
Laboratory	☐	.....%
Exercises	☑	30%
Visits at facilities	☐	…….%
Other *(describe):* ……	☐	…….%
Total		100%

Evaluation method *(select)-* **weight:**				
	written	*%*	*Oral*	*%*
Homework	☐		☐	
Class project	☐		☐	
Interim examination	☐		☐	
Final examinations	☑	100%	☐	
Other *(describe):* ……	☐		☐	