(B) Course information in english

General course information:

Course title:	Rigid Body Mechanics	Course code:	ΓΚ0401
Credits:	6	Work load (hours):	211
Course level:	Undergraduate		
Course type:	Mandatory		
Course category:	Basic		
Semester:	2o	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:	Olympia Panagouli
Level:	Assoc. Professor
Office:	Civil Engineering Faculty University of Thessaly Pedion Areos, 38334 Volos, Greece
Tel. – email:	24210-74146, olapanag@uth.gr
Other tutors:	-

Specific course information:

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Fundamental Concepts and Principles in Mechanics.	4	3
2	Vector Analysis.	4	3
3	Rigid Bodies: Equivalent System of Forces.	4	3
4	Free Body Diagram. Equilibrium of 2-D bodies.	4	3
5	Equilibrium of 3-D bodies.	4	3
6	Distributed Forces.	4	3
7	Truss Analysis (statically determinant).	4	3
8	Internal forces in Members	4	3
9	Beam Analysis (statically determinant).	4	3
10	Frame Analysis (statically determinant).	4	3
11	Curved beams	4	3
12	Centroids of Areas and Lines	4	3
13	Work and Energy. Virtual Work theorem.	4	3
14	Stability. Friction.	4	3

Additional hours for:			
Class project	Examinations	Preparation for examinations	Educational visit
	3	40	

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):*				