TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Cıvıl Engıneerıng (Englısh)

Course Information

DYNAMICS					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
CVE207	Fall	3	0	3	4

Prerequisites and co-requisites	NONE
Language of instruction	Turkish
Type	Required
Level of Course	Bachelor's
Lecturer	Öğr. Gör. S. Süha SARIAKÇALI
Mode of Delivery	Face to Face
Suggested Subject	
Professional practise (internship)	None
Objectives of the Course	To teach fundamentals of engineering mechanics to the civil enginnering students, to help them gain the ability of engineering problem solving strategy within tne framework of mechanics rules
Contents of the Course	Kinetics and kinematics, Absolute motion, relative motion, Kinetics of particles: equations of motion, dynamic equilibrium, curvilinear motion, Work-energy and impulse-momentum, Plane motion of rigid bodies, kinetic energy of rigid bodies, Introduction to the dynamics of vibrating systems

Learning Outcomes of Course

#	Learning Outcomes
1	To understand basic concepts of Dynamics, kinetics and kinematics,
2	To characterize a motion and apply Newton’s equations,
3	To analyze motion of particles and rigid bodies using energy and momentum principles
4	To analyze motion of particles and rigid bodies using energy and momentum principles

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Introduction, motion of a point, rigid body, kinetics, kinematics, fundamental dynamic concepts	Lecture
2	Motion of a point, position, velocity, acceleration, orbit, direction of motion, velocity, acceleration, units	Lecture
3	Kinematics of a point, straight-line motion, straight-line motion with constant acceleration	Lecture
4	Motion of several points, relative motion, curvilinear motion, normal and tangential components	Lecture
5	Kinetics of a point, Newton’s second law, dynamic equilibrium, work and kinetic energy, impuls and momentum	Lecture
6	Newton’s equation of motion, D’alembert theory, equilibrium in curvilinear motion	Lecture
7	Kinematics of rigid bodies, motion of rigid bodies, rotation about a fixed axis	Lecture
8	General motions	Lecture
9	General motions	Lecture
10	Mid-Term Exam	

11	Kinetics of rigid bodies, Newton’s second law, dynamic equilibrium, energy and momentum in rigid body dynamics	Lecture
12	Vibrations, conservative systems	Lecture
13	Damped vibrations	Lecture
14	Forced vibrations	Lecture
15	Forced vibrations	Lecture
16	Final Exam	

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Engineering Mechanics – Dynamics Hibbeler, R. C. 11th Edition, Prentice Hall, 2006.		
2	Engineering Mechanics: Statics and Dynamics Shames, I.H. Fourth Edition., Prentice Hall, 1996.		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	To understand basic concepts of Dynamics, kinetics and kinematics,	1	1
2	To characterize a motion and apply Newton’s equations,	2	2
3	To analyze motion of particles and rigid bodies using energy and momentum principles	1	1
4	To analyze motion of particles and rigid bodies using energy and momentum principles	1	1

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	4	56
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	4	4
8	Midterm Exam	1	4	4
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	2	4	8
14	Final Exercise	0	0	0

15	Preparation for Final Exam	1	11	11
16	Final Exam	1	4	4
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