

MM 202 Dynamics				DEPARTMENT OF MECHANICAL ENGINEERING					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project / Field Study	Homework	Other	Total	Credit	ECTS Credit
4	42	14	-	-	69	-	125	4	5.0
Language	Turkish								
Compulsory / Elective	Compulsory								
Prerequisites	FIZ103								
Course Contents	Kinematics of a particle: rectilinear motion, curvilinear motion. Kinetics of a particle. Linear and angular momentum. Force equation of motion. Work-energy theorem. Impulse-momentum theorem for a particle. Collision Kinematics of a rigid body: in the plane and in the space. Linear and angular momentum of a rigid body. Kinetics of a rigid body. Euler’s equations of motion. Work-energy and Impulse-momentum theorems for a rigid body. Principle of Virtual work.								
Course Objectives	To present the basic concepts in the rijid body mechanics								
Learning Outcomes and Competences	Learning to predict the effects of force and motion								
Textbook and / or Reference	1. Engineering Mechanics, Statics and Dynamics, R.C. Hibbeler. 2. Dynamics, J.L. Meriam. 3. Engineering Mechanics, Statics and Dynamics, I.H. Shames								
Assessment Criteria						If any, mark as (x)		Percentage (%)	
	Midterm Exams					X		50	
	Quizzes					X		10	
	Homeworks								
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
	Final Exam					X		40	
Instructors	Prof. Mahmut OZBAY, Assist.Prof. Selim TURKBAS								
Week	Subject								
1	Kinematics of a particle: Rectilinear Kinematics: General Curvilinear Motion: Absolute Dependent Motion Analysis of Two Particles								
2	Kinetics of a Particle: Force and Accelerstion: Newton’s Laws of Motion: Equation of Motion for a System of Particles: Central-Force Motion and Space Mechanics								
3	Kinetics of a particle: Work and Energy: The Work of a Force: Principle of Work and Energy: Conservation of Energy								
4	Kinetics of a Particle: Impulse and Momentum: Principle of Linear Impulse and Momentum								
5	İmpact: Angular Momentum								
6	Planar Kinematics of a Rigid Body: Rigid-Body Motion								
7	Relative-Motion Analysis: Relative-Motion Analysis Using Rotating Axes								
8	Planar Kinetics of a Rigid Body: Force and Acceleration: Moment of Inertia								
9	Equations of Motion:Translation, Rotation About a Fixed Axis, General Plane Motion								
10	Planar Kinetics of a Rigid Body: Work and Energy: Kinetic Energy: The Work of a Force								
11	The Work of a Couple: Principle of Work and Energy: Conservation of Energy								
12	Planar Kinetics of a Rigid Body: Impulse and Momentum: Linear and Angular Momentum								
13	Principle of Impulse an Momentum: Conservation of Momentum: Eccentric Impact								
14	Principle of Virtual Work								