



Engineering Mechanics-Dynamics, Meriam & Kraige, 7th Edition, Wiley, ISBN 9781118083451.

Reference Books:

Vector Mechanics for Engineers: Statics & Dynamics, Beer & Johnston, 9th Edition, McGraw Hill.,2009, ISBN: 978-0-07-352940-0.

Engineering Mechanics, Dynamics, Hibbeler, R.C, 12th edition, Prentice Hall,2010, ISBN -13:978-0-13-607791-6.



Course Schedule



Chapter	Week	Subject
1	1	1/1 History and Modern Applications 1/2 Basic Concepts 1/3 Newton's Laws 1/4 Units 1/5 Gravitation 1/6 Dimensions
2	1	2/1 Introduction 2/2 Rectilinear Motion 2/3 Plane Curvilinear Motion 2/4 Rectangular Coordinates
	2	2/5 Normal and Tangential Coordinates 2/6 Polar Coordinates 2/7 Space Curvilinear Motion
	3	2/8 Relative Motion (Translating Axes) 2/9 Constrained Motion of Connected Particles
3	4	3/1 Introduction SECTION A: FORCE, MASS, AND ACCELERATION 3/2 Newton's Second Law 3/3 Equation of Motion and Solution of Problems 3/4 Rectilinear Motion 3/5 Curvilinear Motion
	5	SECTION B: WORK AND ENERGY 3/6 Work and Kinetic Energy 3/7 Potential Energy
	6	SECTION C: IMPULSE AND MOMENTUM 3/8 Introduction 3/9 Linear Impulse and Linear Momentum 3/10 Angular Impulse and Angular Momentum
	7	SECTION D: SPECIAL APPLICATIONS 3/11 Introduction 3/12 Impact



Course Schedule



Chapter	Week	Subject
4	Kinetics of Systems of Particles	8 4/1 Introduction 4/2 Generalized Newton's Second Law 4/3 Work-Energy 4/4 Impulse-Momentum 4/5 Conservation of Energy and Momentum
5	Part II – Dynamics of Rigid Bodies Plane Kinematics of Rigid Bodies	8 5/1 Introduction 5/2 Rotation
9 5/3 Absolute Motion 5/4 Relative Velocity 5/5 Instantaneous Center of Zero Velocity		
10 5/6 Relative Acceleration 5/7 Motion Relative to Rotating Axes		
11 APPENDIX B MASS MOMENTS OF INERTIA B/1 Mass Moments of Inertia about an Axis B/2 Products of Inertia		
6	Plane Kinetics of Rigid Bodies	12 SECTION A: FORCE, MASS AND ACCELERATION 6/1 Introduction 6/2 General Equations of Motion 6/3 Translation 6/4 Fixed-Axis Rotation
13 6/5 General Plane Motion SECTION B: WORK AND ENERGY Work-Energy Relations		
14 SECTION C: IMPULSE AND MOMENTUM 6/8 Impulse-Momentum Equations		



Examinations



- ⊕ There will be 2 mid-term exams, 1 final exam and quizzes.
- ⊕ Study problems and their solutions will be given during the course. Quiz questions will be chosen among them.
- ⊕ Mid-term I will cover Part 1.
- ⊕ Mid-term II will cover Part 2.
- ⊕ Final exam will cover all the topics.



Grading



	%
MT-1	25
MT-2	25
Final	35
Quiz	10
Attendance	5