Department of Mechanical Engineering
University of California at Berkeley
ME 104 Engineering Mechanics II
Fall Semester 2018

Instructor:	Fai Ma
Office:	6127 Etcheverry Hall
E-mail:	fma@berkeley.edu
Consultation Hours:	M 5.30-6.30 pm, WF 2.30-3.30 pm

Class Location and Website
MWF 1-2 pm, North Gate 105; course website at http://bcourses.berkeley.edu

Course Prerequisite
MEC 85 Introduction to Solid Mechanics

Textbook
J. L. Meriam, L. G. Kraige and J. N. Bolton, *Engineering Mechanics: Dynamics*, 8*th* ed., Wiley, Hoboken, New Jersey, 2015.

Supplementary Reference
R. C. Hibbeler, *Engineering Mechanics: Dynamics*, 14*th* ed., Pearson, Hoboken, New Jersey, 2016.

Course Contents
Newtonian dynamics of particles and rigid bodies in one-dimensional and planar motions. This corresponds to Chapters 1-6 and 8 of textbook, with occasional omissions.

Class Rules
Homework problems will be assigned each week and are due by 11.59 pm on Friday of the following week. Late homework will not be graded. Solutions to homework problems will be posted on the course website. Two Midterm Examinations and a Final Examination are planned. Examinations must be taken as scheduled. Approximate contributions to the final grade are as follows:

Homework	15%
First Midterm on Wednesday, 10/10/2018, 1-2 pm	20%
Second Midterm on Wednesday, 11/7/2018, 1-2 pm	20%
Final Examination on Wednesday, 12/12/2018, 7-10 pm	45%

Course Objectives
To give a compact and consistent account of the principles of Newtonian dynamics. Applications will be mentioned whenever feasible.

Week	Topics	Text Sections	Homework Problems	Due Date
1 8/22	Introduction Kinematics of Particles	1/1-1/8 2/1-2/4	Review of Basic Concepts	
2 8/27	Plane Curvilinear Motion Translating Axes	2/5-2/6 2/8	2/100, 2/114, 2/123, 2/128, 2/134, 2/147, 2/185, 2/190	9/7
3 9/3	Constrained Motion Kinetics of Particles	2/9-2/10 3/1-3/5	2/214, 2/215, 2/217, 2/218, 3/2, 3/35, 3/48	9/14
4 9/10	Work and Energy Impulse and Momentum	3/6-3/7 3/8-3/10	3/79, 3/83, 3/106, 3/140, 3/143, 3/151, 3/322	9/21
5 9/17	Impact Systems of Particles	3/11-3/12 4/1-4/2	3/177, 3/210, 3/232, 3/235, 3/242, 3/260, 3/261	9/28
6 9/24	Kinetics of Systems of Particles	4/3-4/5	4/9, 4/23, 4/27, 4/28, 4/30, 4/33, 4/95, 4/96	10/5
7 10/1	Plane Kinematics of Rigid Bodies	5/1-5/4	5/19, 5/42, 5/51, 5/56, 5/74, 5/78, 5/80, 5/86	10/12
	First Midterm	**Wednesday 10/10/2018**	**1-2 pm**	
8 10/8	Plane Kinematics of Rigid Bodies	5/5-5/6	5/108, 5/113, 5/115, 5/117, 5/143, 5/151	10/19
9 10/15	Rotating Axes Moments of Inertia	5/7-5/8 Appendix B	5/160, 5/165, 5/174, 5/179, B/33, B/42, B/53	10/26
10 10/22	Plane Kinetics of Rigid Bodies	6/1-6/3	6/4, 6/5, 6/7, 6/21, 6/36, 6/38, 6/40, 6/46	11/2
11 10/29	General Equations of Motion	6/4-6/5	6/47, 6/55, 6/58, 6/77, 6/78, 6/79, 6/94	11/9
	Second Midterm	**Wednesday 11/7/2018**	**1-2 pm**	
12 11/5	Kinetics of Rigid Bodies Work and Energy	6/5-6/6	6/93, 6/100, 6/124, 6/133, 6/140, 6/208	11/16
13 11/12	Work and Energy Impulse and Momentum	6/6 6/8	6/171, 6/178, 6/181, 6/183, 6/191, 6/195, 6/199	11/30
14 11/19	Impulse and Momentum	6/8	**Thanksgiving Holidays**	
15 11/26	Conservation of Momentum Vibration	6/8-6/9 8/1-8/2	Topics in Vibration Optional	
	Final Exam	**Wednesday 12/12/2018**	**7-10 pm**	

Graduate Student Instructor

1.	Rubens Salsa		rsalsa@berkeley.edu
	Discussion Hours:	Wed 5-6	155 Donner Lab
		Thu 5-6	150 GSPP
	Consultation Hours:	Wed 4-5	136 Hesse Hall
		Thu 4-5	136 Hesse Hall

Please approach the GSI for any issues concerning homework grading.