

MEC 262 – Engineering Dynamics

The State University of New York, Korea

Spring 2021

Course Title: Engineering Dynamics

Instructor: Prof. Yang, Min Yang

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Lectures: TuTh @ 12:30 AM - 1:50 PM

Recitation: Th @ 3:30 – 4:23 PM

Office Hours: TuTh @ 10:00 - 12:00 AM

Textbook: J. L. Meriam, "Dynamics" 8th Edition in SI Version, Wiley

Course Description:

Engineering dynamics focuses on kinematics and dynamics of particles and rigid bodies in space. The goal of this course is to introduce the physical principles to the analysis of particle and rigid-body motion problems. The students learn to represent and compute displacement, velocity, and acceleration of particles, systems of particles, and rigid bodies in various coordinate systems. The class builds upon Kinematics to include Dynamics of particles and the systems of particles, equation of motion, energy and momentum methods and collisions. In the end, Free, forced, and damped vibrations of particles and rigid bodies are covered.

Topics:

Week	Date	Topic (Subject to change)	Reading
1	2/23	Introduction	Ch1
	2/25	Kinematics of Particles	Ch2
2	3/2	Kinematics of Particles	Ch2
	3/4	Kinematics of Particles	Ch2
3	3/9	Kinetics of Particles	Ch3

	3/11	Kinetics of Particles	Ch3
4	3/16	Kinetics of Particles	Ch3
	3/18	Kinetics of Particles	Ch3
5	3/23	Kinetics of Particles	Ch3
	3/25	Kinetics of Particles	Ch3
6	3/30	Kinetics of Systems of Particles	Ch4
	4/1	Kinetics of Systems of Particles	Ch4
7	4/6	Kinetics of Systems of Particles	Ch4
	4/8	Kinetics of Systems of Particles	Ch4
8	4/13	Review	
	4/15	Midterm Exam.	
9	4/20	Plane Kinematics of Rigid Bodies	Ch5
	4/22	Plane Kinematics of Rigid Bodies	Ch5
10	4/27	Plane Kinematics of Rigid Bodies	Ch5
	4/29	Plane Kinematics of Rigid Bodies	Ch5
11	5/4	Adjustment Day	
	5/6	Adjustment Day	
12	5/11	Plane Kinetics of Rigid Bodies	Ch6
	5/13	Plane Kinetics of Rigid Bodies	Ch6
13	5/18	Plane Kinetics of Rigid Bodies	Ch6
	5/20	Plane Kinetics of Rigid Bodies	Ch6
14	5/25	Introduction to Three-Dimensional Dynamics of Rigid Bodies	Ch7
	5/27	Introduction to Three-Dimensional Dynamics of Rigid Bodies	Ch7
15	6/1	Introduction to Three-Dimensional Dynamics of Rigid Bodies	Ch7
	6/3	Vibration and Time Response	Ch8
16	6/8	Reading Day	
	6/10	Reading Day	
17	6/15	(11-17) Finals	
	6/17	Semester End	

Assignments & Deadlines: Home works are due in class. Home works will not be accepted after the class on the day they are due, and will receive zero in grade.

Examinations: 3 Exams. (Written & Oral)

Grading:

3 Homeworks	30%
3 Exams.	30%
Term project	30%
Attendance	10%

Grading Scale: The grading distribution will be converted to the point with the given weight percentage, and the total point (sum of each point) is to be normalized to 100. Then, the final grade will be given based the following point range. A: 95-100, A-: 90-95 B+: 85-90, B: 80-85, B-: 75-80 C+: 70-75, C: 65-70, C-: 60-65 D+: 55-60, D: 50-55 F: below 50

(Subject to change)

Policies:

- Homework assignments will be posted on the Blackboard.
- The Blackboard can be accessed at <http://blackboard.stonybrook.edu/>
- The time and details about exams will be announced in the class (and also posted on the Blackboard).
- It is the responsibility of students to make sure that they can access the Blackboard and they have a working email registered with it. The blackboard should be checked frequently for new materials.
- Quiz will be closed book and note.