Dynamics

1. COURSE TITLE

- Dynamics 20-012 (98-99 1st Semester)

2. INSTRUCTORS

- Lecturer: M. Ghaemian, Room 421, Ext. 4242
- Teaching assistant: Hamid Madani

3. COURSE OUTLINE

Part I: Dynamics of Particles

Kinematics of Particles
Kinetics of particles
Kinetics of systems of particles

Part II: Dynamics of Rigid bodies

Kinematics of Rigid bodies
Kinetics of Rigid bodies

Vibration and Time Response

4. CLASS-HOURS

Three (3) hours of lectures per week (Sundays and Tuesdays 10:30-12:00)
One (1) hour of tutorial per week (Lecture Room 304)

5. OBJECTIVE AND SCOPE

The main objective of the course is to enable students to perceive, and visualize problems related to engineering mechanics. The course is designed to explain the basic concepts of Dynamics which is related to Civil Engineering field.

6. RELATION OF THE COURSE TO PAST AND FUTURE STUDIES

Students are required to be familiar with the subject of Statics. The course is intended for undergraduate students with interest in structural engineering.

7. TEXT

The material covered in the course follows closely the treatment presented in the following textbook:

Engineering Mechanics, Volume Two, Dynamics, Eigth Edition
By: J.L. Meriam, L.G. Kraige & J. N. Bolton

8. EVALUATION

The course is consisted of 6 assignments (end-of-chapter-assignment), **two mid-term** examination which would be held during the term and a **final** examination.

The evaluation scheme is as follows:	Points
-Assignments (chapters 2, 3, 4, 5, 6 and 8)	5
-Midterm examinations	40
-Final examination	55
-Total	**100**

Assignments have equal weights and each is marked out of (100).

The midterm examinations will be held on Tuesday of Aban 21st and Tuesday of Day 3rd. The first midterm examination is out of chapters 1, 2 and 3. The second midterm examination consists of chapters 4, 5 and 6. Students need to pass the final exam in order to credit the course.

9. COURSE SCHEDULE

Month/day	Chapters	Sub Chapters	Problems
6/31	Introduction		
7/2	Chapter 1	1.1→1.7	2-6-13-15
7/7	Chapter 2	2.1→2.4	7-23-33-44-45-78-87-92-95
7/9		2.5→2.6	112-126-127-128-134-143-150-137
7/14		2.7→2.9	169-174-177-182-202-225
7/16	Problems solving session, Chapter 2		
7/21	Chapter 3	3.1→3.5	13-39-43-69-70-73-80-81-83-87-94
7/23		3.6	106-115-128-130
7/28		3.7	149-152-162-169
7/30		3.8→3.10	177-183-195-207-227-235-238
8/12		3.11→3.12	246-253-258-262-263-267
8/14		3.13→3.14	281-295-298-307-309-310-316
8/19	Problems solving session, Chapter 3		
8/21	First Midterm – Chapters 1, 2 and 3		
8/26	Chapter 4	4.1→4.5	18-24-Proof of obtained equations
8/28	Chapter 5	5.1→5.3	17-20-22-36-51-56
9/3		5.4→5.5	75-77-79-80-82-86-89-90-100-104-103-108-111-119
9/5		5.6	125-127-140-141-144-147-151-
9/10		5.7	159-160-167-179-181
9/12	Problems solving session, Chapter 5		
9/17	Chapter 6	6.1→6.3	6-12-20-26-27
9/19		6.4→6.5	34-40-41-56-61-78-79-80-81-84-86-93
9/24		6.6→6.7	116-118-121-125-126-128-132-139-140-143-156-158
9/26		6.8	174-176-191-194-200
10/1	Problems solving session, Chapter 6		
10/3	Second Midterm - Chapters 4, 5 and 6		
10/8	Chapter 8	8.1→8.2	2-14-17-18-19-22-39-43
10/10		8.3→8.4	56-62-64-67-81-86-90-93-94
10/15		8.5	99-100-103-107-109-113
10/17	Problems solving sessions, Chapters 4,5,6, and 8		