Cairo University
Faculty of Engineering
Mechanical Design Program

MDPN253 - Dynamics of Machine Components- Spring 2016

Lecture: Tuesday 11:00-1:00 PM **– Location:** 14300
Tutorial: Thursday 9:00-11:00 AM **– Location:** 14300

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Office Hours: Tu. 9a-11a, W. 10a-2p, Th. 11a-1p

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Objectives: This course is designed to give the students in Mechanical Design the ability to analyze and simulate the dynamics of plane mechanisms and robots using graphical, analytical and computer assisted method for its design.

Week	Date	Topic
1	16/2	Dynamics Fundamentals and Basic Concepts
2	23/2	Static Force Analysis
3	1/3	Dynamic Force Analysis: Linkage Mechanisms
4	8/3	Dynamic Force Analysis: Gear Trains
5	15/3	Dynamic Force Analysis: Cam-Follower Mechanisms
6	22/3	Plane Kinetics of Rigid Bodies
7	29/3	Plane Kinetics of Rigid Bodies
8	5/4	Midterm Week
9	12/4	Balancing of Machinery
10	19/4	Balancing of Machinery
11	26/4	Balancing of Machinery
12	3/5	Engine Dynamics
13	10/5	Engine Dynamics
14	17/5	Engine Dynamics
15	24/5	Multi-Cylinder Engines
16	31/5	Multi-Cylinder Engines

References:

1. Robert L. Norton, "Design of Machinery-An Introduction to the Synthesis and Analysis of Mechanisms and Machines", 3rd Ed., McGraw Hill, 2004.
2. John Uicker, Gordon Pennock, Joseph Shigley, "Theory of Machines and Mechanisms", 4th Ed., Oxford University Press, 2010.

Grading:

- Attendance 5 %
- Assignments 15 %
- Quizzes 10 %
- Project 10 %
- Midterm 20 %
- Final 40 %

Attendance: Attendance at all lectures and exams is required. The "25%" rule will apply.