Dynamics
The University of Texas at Dallas
Spring 2014

Course Details

Course Number:	**MECH – 2330.002**
Course Discipline:	**Mechanical Engineering**
Lecture Time:	**TR 1:00 pm – 2:15 pm**
Lecture Room:	**ECSN 2.126**

Instructor

Name:	Dr. P.L. Stephan Thamban
Email:	stephan@utdallas.edu
Office:	ECSN 2.124 (office hours) & ECSN 3.214
Office hours:	M 10:30 am - 12:30 pm (or by appointment.)

Teaching Assistant

Information TBA (will be announced)

Required Textbook

Engineering Mechanics: Statics & Dynamics, 13th edition, R.C. Hibbeler, Prentice Hall, ISBN-13 978-0-13-291548-9

Required online course registration (for HW assignments)

Website: www.masteringengineering.com
Course title: SPR_2014_MECH_2330
Course ID: METHAMBAN20459

Prerequisites / Co-requisites

Prerequisites: MECH 2310. Pre/Co-requisites: ENGR 2300 or MATH 2420

Course Description

Kinematics and kinetics of particles, planar rigid bodies, three-dimensional rigid bodies and equations of motion. Methods utilizing force and acceleration, work and energy and impulse and momentum. Single degree of freedom vibration systems are and simulation tools are introduced. (Lecture course: 3 semester hours)

Course Objectives/ Outcomes

- (1) Apply and interpret the principles of work & energy to systems of particles and rigid body dynamic systems. ABET outcome (a,e)
- (2) Apply and interpret the principles of impulse and momentum to systems of particles and rigid body dynamic systems. ABET outcome (a,e)
- (3) Apply Newton's law to derive equation of motion and solve dynamic system problems. ABET outcome (a,e)
- (4) Demonstrate the ability to apply all of the above to realistic dynamic systems and engineering mechanisms and simulate the dynamical systems using modern engineering tools. ABET outcome (a,e,c,k)

Tentative Schedule

COURSE CONTENT, COURSE SCHEDULE	Introduction particle kinematics	Week 1,2
	Particle kinetics	Week 3
	Work & Energy – particle	Week 4
	Impulse & momentum – particle	Week 5
	Midterm I, Tentative Date: Thursday, 1:00 pm-2:15 pm, 2/20	
	Rigid body kinematics – planar	Week 6,7
	Rigid body kinetics – planar	Week 8
	Mass Moment of Inertia	Week 8
	Work & Energy – planar	Week 9,10
	Midterm II, Tentative Date: Thursday, 1:00 pm-2:15 pm, 4/3	
	Impulse & momentum – planar	Week 11
	Rigid body kinematics – 3D	Week 12
	Rigid body kinetics – 3D	Week 13
	Vibrations	Week 14
	Review or special topics	Week 15
	Final Exam, per UTD Schedule, (TBA on Orion)	

Note:

Lecture sequence will be synchronous with the flow adopted in the textbook

Grading Policy

Midterm Tests : 50% (25% each)
Final Exam : 25%
Homework : 20%
Rewritten class notes : 5%

Notes:

- There will be two midterm tests during the semester and a final exam
- Specific details regarding tests/exams will be given as we get closer to the test/exam date

- Instructor reserves the right to flex the grade range slightly to accommodate "borderline" students who have demonstrated effort towards success in the course to the next higher grade

Important Dates

Test 1	: Feb 20, 2014
Test 2	: Apr 3, 2014
Last day of class	: May 3, 2014
Final exam	: Per UTD schedule, (refer Orion)

Course Mechanics

- Homework / Rewritten class notes:
  - Homework is due by midnight on due date (Tuesdays - almost every week)
  - All HW assignments will be assigned through masteringengineering.com and solutions needs to be submitted through masteringengineering.com
  - Solutions for homework problems will be available electronically
  - Once a week (Tuesdays), rewritten class notes needs to be turned in before lecture starts
  - It will be graded on a "Completed"/ "Not Completed" basis
- Websites:
  - Up-to-date information about the course (syllabus, assignments, solutions, handouts, etc.) will be made available on eLearning.utdallas.edu.
  - HW grades will be available at www.masteringengineering.com

Course Policies

- Attendance:
  - While roll will not be taken during class, it will be extremely beneficial for students to be present for all lectures. Tests/exams may include material exclusively (not necessarily in the textbook) covered during lectures. During lecture, instructor will assume that the audience had been present for previous lectures when it pertains to continuity to discussions. Students are expected to be present for lecture on time (**1:00 pm**). Cellular phones and other electronic devices that cause distraction during class **must be turned off**
- Late/missed work:
  - If due to an unavoidable circumstance (health, family emergencies) a student turns-in work after it is due, upon verifying supporting documents that attest such emergency instructor may waive penalty for late work. It will be dealt with on a case by case basis by the instructor
  - Homework will not be accepted a week after the due date
- Academic Honesty
  - While the instructor encourages discussions with peers while working on homework problems, he deems copying solution of a peer as being dishonest
  - Scholastic dishonesty during tests/exams may result in failing the course

Suggestions for Success

Outside class work is critical for success in this course. Develop a habit of keeping up with the reading of the text and reviewing of the notes. This is a fast paced course so there is no room for getting "left behind" and "catching up". If you have difficulties, identify them early and bring it to the attention of the Instructor immediately so remedial measures can be suggested. It requires lot of practice to have a higher percentage success rate in problem-solving in the time frame you will operate in tests/exams. So it is highly recommended that students work on problems beside the ones assigned for homework.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.