Statics
The University of Texas at Dallas
Fall 2016

Course Details

Course Number:	**MECH – 2310.501**
Course Discipline:	**Mechanical Engineering**
Lecture Time:	**TR 5:30 pm – 6:45 am**
Lecture Room:	**SLC 2.302**

Instructor

Name:	Dr. P.L.Stephan Thamban
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Office:	ECSN 2.518
Office hours:	M 1:30 pm- 3:30 pm (or by appointment or during Dynamics office hour session)

Teaching Assistant

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Office:	ECSN 2.232
Office hours:	W 11:45 am- 12:45 pm & T 7 pm – 8 pm

Course materials requirement

You are required to have a copy of the textbook and be registered to the online course (for HW assignments) at www.MasteringEngineering.com

Textbook options:

Engineering Mechanics: Statics & Dynamics plus MasteringEngineering with Pearson etext Access Card package, 14th edition, R.C. Hibbeler, Prentice Hall, ISBN-13 978-0134117003 (or)

Engineering Mechanics: Statics & Dynamics, 14th edition, R.C. Hibbeler, Prentice Hall, ISBN-13 978-0133915426 (or)

Engineering Mechanics: Statics & Dynamics, 14th edition (loose leaf), R.C. Hibbeler, Prentice Hall, ISBN-13 978-0134228242 (or)

Engineering Mechanics: Statics & Dynamics, 14th edition, R.C. Hibbeler, etext with MasteringEngineering access, ISBN-13 978-0133941296

Online registration information: (@ www.MasteringEngineering.com)

Course title: FALL_2016_MECH_2310_SEC501
Course ID: METHAMBAN84159
ISBN-13 9780133952018

Prerequisites / Co-requisites

Prerequisites: MECH 1208 and PHYS 2325/2125. Pre/Co-requisites: MATH 2415 or MATH 2419

Course Description

Course material includes discussions on static equilibrium of particles and rigid bodies in three-dimensional space. Analysis related to structures, such as trusses, frames and machines, will be taught. Internal forces, moments in structural members will be studied. Concepts such as geometric center, center of Mass, moments of Inertia will be covered. Static equilibrium, based on principle of virtual work will be discussed.

Course Objectives/ Outcomes

Introduce various types of force systems at rest using the classical Newtonian mechanics that governs physical systems at rest. Specifically, the course will

1. Apply knowledge in mathematics, science and engineering to understand and formulate relations describing static equilibrium.
2. Solve statics problems for systems modeled as particles and rigid bodies.
3. Work in teams to apply knowledge of statics to solve real-world problems.
4. Apply static equilibrium principles to model mechanisms and various friction effects.
5. Apply computational tools to solve static equilibrium problems.
6. Calculate centroids and mass properties of engineering shapes and bodies.

Tentative Schedule

COURSE CONTENT, COURSE SCHEDULE	Introduction and General Principles	Week 1
	Vectors & Force Vectors	Week 1,2
	Equilibrium of a Particle	Week 2
	Moment of force	Week 2,3
	Force System Resultants	Week 3
	Distributed Forces	Week 3
	Equilibrium of a Rigid Body	Week4
	Truss analysis -Method of Joints	Week 4,5
	Midterm I, Tentative Date: 9/27 (Tue)	
	Truss analysis -Method of Sections	Week 5
	Space Trusses	Week 6
	Frames and Machines	Week 6,7
	Internal Forces	Week 7,8
	Forces in cables	Week 9
	Friction	Week 9,10
	Midterm II, Tentative Date: 11/1 (Tue)	
	Center of Mass	Week 11
	Moment of Inertia	Week 12,13
	Virtual work	Week 14,15
	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

Two midterm tests	: 40%
Final Exam	: 25%
Homework	: 15%
Project	: 15%
Rewritten class notes	: 5%

Notes:

- There will be two midterm tests during the semester and a final exam
- Specific details regarding tests/exam will be given as we get closer to the test/exam date
- During the course of the semester, details regarding the project will be given
- 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
- After final exam no remedial measures can be given to improve the grade. Students are expected to monitor their progress to assess where they stand in the course
- Make-up test/exam will be given only in extreme cases (upon verifying documentation)

Important Dates

Test 1	: Sep 27, 2016
Test 2	: Nov 1, 2016
Last day of class	: Dec 7, 2016
Final exam	: Per UTD schedule (Dec 9-15)

Course Mechanics

- Homework / Rewritten class notes:
    - Homework is due by midnight on due date (most of the weeks on Thursday)
    - All HW except Matlab® exercises will be assigned through masteringengineering.com and solutions needs to be submitted through masteringengineering.com
    - Matlab® related assignments have to be turned-in on due date in class (preferably before lecture begins)
    - Solutions for homework problems will be available with the instructor
    - Rewritten class notes has to be turned-in once a week on Tuesdays (preferably before lecture begins)
    - It will be graded on a "Completed"/ "Not Completed" basis
- Websites:
    - Relevant information about the course (syllabus, specific announcements, handouts, etc.) will be made available on eLearning.utdallas.edu.
    - HW grades will be available at www.masteringengineering.com

Course Policies

- Attendance:
    - It is required to be present for all lectures. Tests/exam may include material exclusively (not in the textbook) covered during lectures. During lecture, instructor will assume that students had been present for previous lectures as it relates to continuity of discussions. Students are expected to be present for lecture on time (**5:30 pm**). Cellular/smart phones can be kept in silent/vibrate mode. All 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
    - Missed tests due to health reasons or family emergencies have to be supported by acceptable documentation to be considered for make-up arrangements. 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.