

**Statics**  
**The University of Texas at Dallas**  
**Fall 2015**

***Course Details***

Course Number: **MECH – 2310.001**  
Course Discipline: **Mechanical Engineering**  
Lecture Time: **TR 10:00 am – 11:15 am**  
Lecture Room: **JSOM 1.117**

***Instructor***

Name: Dr. P.L.Stephon Thamban  
Email: [stephan@utdallas.edu](mailto:stephan@utdallas.edu)  
Phone: 972-883-4687  
Office: ECSN 2.518  
Office hours: M 9:30 am- 11:30 am (or by appointment or during Dynamics office hour session)

***Teaching Assistant***

Name: Chandra Varma Ponnuramam  
Email: [cxp141730@utdallas.edu](mailto:cxp141730@utdallas.edu)  
Office: ECSN 2.232  
Office hours: T&R 4 – 5 pm (tentative)

***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](http://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, 14<sup>th</sup> 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](http://www.MasteringEngineering.com), 978-0133952018)

Course title: FALL\_2015\_MECH\_2310\_SEC1

Course ID: METHAMBAN11515

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***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 and machines, will be conducted. Internal forces, moments in structural members will be studied. Concepts such as center of Mass, moments of Inertia will be covered. Equilibrium analysis employing principle of virtual work will be introduced.

### ***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

- apply knowledge in mathematics, science and engineering to formulate and solve engineering problems in statics
- solve statics problems for systems modeled as particles
- solve statics problems for systems modeled as rigid bodies
- employ engineering principles and friction effects for equilibrium conditions
- calculate centroids, mass and area properties of engineering shapes/bodies
- apply principles of work to systems in equilibrium

### ***Schedule (projected)***

<b>COURSE CONTENT, COURSE SCHEDULE</b>	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
	Method of Joints	Week 4,5
	<u>Midterm I, Tentative Date: 9/29 (Tue), 10:00 am-11:15 am</u>	
	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
	<u>Midterm II, Tentative Date: 11/3 (Tue), 10:00 am-11:15 am</u>	
	Center of Mass	Week 11
	Moment of Inertia	Week 12,13
	Virtual work	Week 14,15
	Review or special topics	Week 15
	<u>Final Exam, per UTD Schedule, (TBA on Orion)</u>	

### **Note:**

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

## ***Grading Policy***

Two midterm tests and a final exam : 75%  
Homework : 20%  
Rewritten class notes : 5%

### Notes:

- There will be two Midterm tests during the semester and a final exam. Unless announced in class, they will carry equal weightage
- Specific details regarding tests/exam 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
- 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 29, 2015  
Test 2 : Nov 3, 2015  
Last day of class : Dec 9, 2015  
Final exam : Per UTD schedule (Dec11-17)

## ***Course Mechanics***

- Homework / Rewritten class notes:
  - Homework is due by midnight on due date (Thursdays - almost every week)
  - All HW except Matlab® exercises will be assigned through [masteringengineering.com](http://masteringengineering.com) and solutions needs to be submitted through [masteringengineering.com](http://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 posted by the TA
  - 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, special assignments, solutions, handouts, etc.) will be made available on [eLearning.utdallas.edu](http://eLearning.utdallas.edu).
  - HW grades will be available at [www.masteringengineering.com](http://www.masteringengineering.com)

## ***Course Policies***

- Attendance:
  - It is required to be present for all lectures. Tests/exam may include material exclusively (not necessarily in the textbook) covered in lectures. During lecture,

instructor will assume that students had been present for previous lectures when it pertains to continuity in discussions. Students are expected to be present for lecture on time (10:00 am). Cellular/smart phones can be kept in silent/vibrate mode. All other electronic devices that cause distraction during class **must be turned off**. Access to internet during lecture period is not allowed

- Late/missed work:
  - If due to an unavoidable circumstance (health, family emergency) 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.***