



ConE 211 - Statics
Course Syllabus: Fall 2012
MWF 10:00 – 10:50AM
Ag/IT 211
Fall 2012

Instructor: Nilo Tsung, CEng, PE, PhD
Assistant Professor
Department of Engineering & Technology

Office Location: Charles J. Austin Industrial Engineering & Technology Building, Room 204

Office Hours: Tuesday/Thursday
1:30 – 4:30 PM or by appointment

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COURSE INFORMATION

Materials – Textbooks:

Textbook(s) Required: Hibbeler, R. C. (2010) *Engineering Mechanics: Statics*, 12th Ed. Upper Saddle River, NJ: Prentice Hall. ISBN-10: 0-13-607790-0.

Course Description:

Credit hours: Three (3) semester hours.

Students in this course will study the theory and application of engineering mechanics - statics. Subjects covered in this class include force vectors, equilibrium of a particle, force system resultants, equilibrium of a rigid body, structural analysis, internal forces, friction, center of gravity and centroid, and moments of inertia.

Prerequisite: PHYS 2425 c or f (mechanics and heat) and consent of instructor

Co-requisite: MATH 192 (calculus II)

Student Learning Outcomes:

Upon satisfactory completion of the course, the student will be able to:

1. Understand Newton's Laws of Motion and Gravitation.

2. Express force and position in Cartesian vector form and explain how to determine the vector's magnitude and direction.
3. Show how to solve particle equilibrium problems using the equations of equilibrium.
4. Indicate how to reduce a simple distributed loading to a resultant force having a specified location.
5. Show how to solve rigid-body equilibrium problems using the equations of equilibrium.
6. Show how to determine the forces in the members of truss using the methods of joints and the method of sections.
7. Show how to use the method of sections to determine the internal loadings in a member.
8. Show how to analyze the equilibrium of rigid bodies subjected to dry friction.
9. Show how to determine the location of the center of gravity and centroid for a system of discrete particles and a body of arbitrary shape.
10. Determine the moment of inertia for an area.

COURSE REQUIREMENTS

Instructional / Methods / Activities Assessments

This course will be presented using formats that include lectures and discussions. Student participation in discussion is expected.

Homework Assignments: 5% of total course grade

Student Learning Outcomes #1, #2, #3, #4, #5, #6, #7, #8, #9, #10

Problems from the textbook will be assigned at the end of each class. Students will apply the theories and mathematical principles taught in this course to solve applied engineering problems.

Assessment Method: For each assignment, the total points are always 10. Students should solve their homework problems independently although discussion during problem solving is encouraged. In short, copying other's homework is prohibited. All assignments are due one week from the day they were assigned unless specified otherwise in the syllabus or by the instructor. Late work will not be accepted and a grade of "0" will be assigned, unless prior arrangements are worked out with the instructor. The instructor has the final decision on whether late work will be accepted. Late penalties will be assessed to any approved late work.

Quizzes: 20% of total course grade

Student Learning Outcomes #1, #2, #3, #5, #6, #7, #8, #9, #10

Quizzes will be frequently conducted. They may last about 10 minutes. The problems in the quizzes will be similar to those assigned for homework.

Assessment Method: For each quiz, the total points are always 10. Quizzes will be graded based on correctness and accuracy. **Students should always bring their own engineering calculators with them to the class.**

Tests & Final Exam: 75% of total course grade**Student Learning Outcome #1, #2, #3, #4, #5, #6, #7, #8, #9, #10**

Tests and a final exam will be used to assess a student's knowledge and skills related to statics.

Assessment Method: Two tests and a final exam will be conducted. Test #1 will assess the material / topics covered in the first five weeks. Test #2 will assess the material / topics covered between weeks six and ten. The final exam will NOT be comprehensive and will assess material / topics between weeks 11 and 15. The tests and final exam will be worth 100 points each. The tests and final exam will each account for 25% of the final grade.

Grading

The **final course grade** will be based upon the following:

Assessments

Homework assignments	5%
Quizzes	20%
Test #1	25%
Test #2	25%
Final Exam	25%

Grading Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
<59	F

TECHNOLOGY REQUIREMENTS

The following technologies will be required for this course.

- Internet access / connection
- Engineering calculator

COMMUNICATION AND SUPPORT**Interaction with Instructor Statement:**

Outside of the classroom, email will be the primary communication tool. Students should communicate with the instructor via email at the address provided in this syllabus. The instructor will communicate with students via email through their myLeo email address.

COURSE AND UNIVERSITY PROCEDURES/POLICIES**Course Specific Procedures:**

Academic Dishonesty

Texas A&M University-Commerce will not condone plagiarism in any form. Plagiarism represents disregard for academic standards and is strictly against University policy. Plagiarized work can result in a "0" on a given assignment(s) or an "F" for the course as well as further administrative sanctions permitted under University policy. You may discuss course work and other course materials with fellow students (except during tests), but it is inappropriate to have another student do your course work or provide you with any portion of it.

Guidelines for properly quoting someone else's writings and the proper citing of sources can be found in the APA Publication Manual. If you do not understand the term "plagiarism", or if you have difficulty summarizing or documenting sources, contact your professor for assistance.

University Specific Procedures:

ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu
[Student Disability Resources & Services](#)

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*).

Students are expected to attend all class periods and to be prepared for each class. Students are expected to refrain from any disruptive behaviors during class, which includes but is not limited to working on assignments/projects from another course, reading non-course materials, or using the computer for non-class purposes. Cell phones, iPods, and other electronic devices should be turned off during class.

COURSE OUTLINE / CALENDAR

Week (mm/dd-mm/dd)	Topic	Assignment(s)
Week 1 (8/27 – 8/31)	- Course introduction - Chapter 1: General Principles	Reading: Chapter 1 Assignment:
Week 2 (9/3 – 9/7)	- Chapter 2: Force Vectors	Reading: Chapter 2 Assignment:
Week 3 (9/10 – 9/14)	- Chapter 3: Equilibrium of a Particle	Reading: Chapter 3 Assignment:
Week 4 (9/17 – 9/21)	- Chapter 4: Force System Resultants	Reading: Chapter 4 (sections 4.1 – 4.6) Assignment:
Week 5 (9/24 – 9/28)	- Chapter 4: Force System Resultants (continued) TEST #1(September 28th)	Reading: Chapter 4 (sections 4.7 – 4.9) Assignment:
Week 6 (10/1 – 10/5)	- Chapter 5: Equilibrium of a Rigid Body	Reading: Chapter 5 (sections 5.1 – 5.4) Assignment:
Week 7 (10/8 – 10/12)	- Chapter 5: Equilibrium of a Rigid Body (continued)	Reading: Chapter 5 (sections 5.5 – 5.7) Assignment:
Week 8 (10/15 – 10/19)	- Chapter 6: Structural Analysis	Reading: Chapter 6 (sections 6.1 – 6.4) Assignment:
Week 9 (10/22 – 10/26)	- Chapter 7: Internal Forces	Reading: Chapter 7 (sections 7.1 – 7.3) Assignment:
Week 10 (10/29 – 11/2)	- Chapter 7: Internal Forces (continued) TEST #2 (November 2nd)	Reading: Chapter 7 (section 7.4) Assignment:
Week 11 (11/5 – 11/9)	- Chapter 8: Friction	Reading: Chapter 8 Assignment:
Week 12 (11/12 – 11/16)	- Chapter 9: Center of Gravity and Centroid	Reading: Chapter 9 (sections 9.1 – 9.3) Assignment:
Week 13 (11/19 – 11/23)	- Chapter 9: Center of Gravity and Centroid (continued)	Reading: Chapter 9 (sections 9.4 – 9.5) Assignment:
Week 14 (11/26 – 11/30)	- Chapter 10: Moments of Inertia Because of Thanksgiving holiday, no class will be held on November 30 th (Friday).	Reading: Chapter 10 (sections 10.1 – 10.4) Assignment:
Week 15 (12/3 – 12/7)	- Chapter 10: Moments of Inertia (continued)	Reading: Chapter 10 (sections 10.5 – 10.8) Assignment:
Week 16 (12/10 – 12/14)	Final Exam will be held from 10:30 AM to 12:30 noon on December 10th (Monday)	