MAE 1312 – Engineering Statics
Spring 2015

Instructor(s): Bo Yang, Ph.D.
Office Number: 202 ELB
Office Telephone Number: 817-272-9335
Email Address: boyang@uta.edu
Faculty Profile: https://www.uta.edu/mentis/profile/?8453

Office Hours: MoWe: 4:00 p.m. - 5:00 p.m., or by appointment

Section Information: MAE 1312 - 003
Time and Place of Class Meetings: MoWe 5:30 p.m. - 6:50 p.m. at WH 208

Description of Course Content: A study of forces and force systems, resultants and components of force systems, forces due to friction, conditions of equilibrium, forces acting on members of trusses and frame structures, centroids and moments of inertia. Vector and index notation introduced.

Student Learning Outcomes: Development of an understanding of the theory and applications of Statics and of skills in the engineering analysis of mechanical systems.

Required Textbooks and Other Course Materials:
R. C. Hibbeler, *Engineering Mechanics: Statics*, **13th ed.**, Pearson Prentice Hall, Upper Saddle River, NJ

Descriptions of major assignments and examinations: There will be two mid-term exams (to be scheduled depending on course progress) and a final exam.

Attendance: Required. Two attendance checks will be counted equally as one quiz towards final grade calculation. For excused absence, the students are expected to obtain approval in advance.

Grading:

Relative Weighting of the Grades:

Homework	15%
Quizzes	15%
Exam-I	20%
Exam-II	20%
Final Exam	30%

Weighted Grade	**Letter Grade**
90 or above	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Make-up Exams: **Makeup exams will be given only under extreme circumstances**. It is expected that the students will contact the instructor sufficiently in advance of an exam or have sufficient reason that they could not do so. Each student is limited to have **only ONE** makeup exam in the course.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be

required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

> *I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*
>
> *I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities

such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Course Schedule

It is highly recommended to read the assigned materials before each class. Problem-solving classes will be given as necessary after a topic is finished. The topics are listed below:

1. Introduction
2. Force vectors
3. Equilibrium of a particle
4. Moment of forces
5. Equilibrium of a rigid body
6. Truss analysis: Methods of joints and sections
7. Frame and machine analyses
8. Internal forces and distributed forces
9. Friction
10. Centroid, center of gravity, and moments of inertia

The first mid-term exam will cover Topics 1-5.
The second mid-term exam will cover Topics 6-7.
The final exam will cover all topics.