ENGR 2301 – Engineering Mechanics I: Statics

Course Syllabus: Fall 2017

"Northeast Texas Community College exists to provide responsible, exemplary learning opportunities."

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	11am-1:30pm 3:30-5:00pm	12:30-1:30pm	11am-1:30pm 3:30-5:00pm	12:30-1:30pm	By Appt.	NA

The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Catalog Course Description (include prerequisites): Basic theory of engineering mechanics, using calculus, involving the description of forces, moments, and couples acting on stationary engineering structures; equilibrium in two and three dimensions; free-body diagrams; friction; centroids; centers of gravity; and moments of inertia. Prerequisite: PHYS 2425, Pre/Co-requisite: MATH 2414 (concurrent enrollment or previous completion). Note: This is a required course for the THECB Engineering Compact Agreement.

Required Textbook(s): *Engineering Mechanics: Statics & Dynamics* (13th Ed.), R. C. Hibbeler, 2012
Publisher: Pearson
ISBN-13 Number: 978-0132915489

Recommended Reading(s): None

Student Learning Outcomes: Upon successful completion of this course, students will be able to:

1. State the fundamental principles used in the study of mechanics.
2. Define magnitude and directions of forces and moments and identify associated scalar and vector products.
3. Draw free body diagrams for two- and three-dimensional force systems.
4. Solve problems using the equations of static equilibrium.
5. Compute the moment of force about a specified point or line.
6. Replace a system of forces by an equivalent simplified system.
7. Analyze the forces and couples acting on a variety of objects.
8. Determine unknown forces and couples acting on objects in equilibrium.
9. Analyze simple trusses using the method of joints or the method of sections.
10. Determine the location of the centroid and the center of mass for a system of discrete particles and for objects of arbitrary shape.
11. Analyze structures with a distributed load.
12. Calculate moments of inertia for lines, areas, and volumes.
13. Apply the parallel axis theorem to compute moments of inertia for composite regions.
14. Solve problems involving equilibrium of rigid bodies subjected to a system of forces and moments that include friction.
15. Solve problems involving dry sliding friction, including problems with wedges and belts.

SCANS Skills: N/A

Course Outline:

Chap.	Title	*Week*	*Key Dates**
1	Course Overview / General Principles	*1, 2*	
2	Force Vectors	*2, 3, 4*	
	Exam 1	***5***	***9/27/17***
3	Equilibrium of a Particle	*4, 5*	
4	Force System Resultants	*5, 6, 7*	
5	Equilibrium of a Rigid Body	*7, 8*	
	Exam 2	***9***	***10/25/17***
6	Structural Analysis	*8, 9, 10*	
7	Internal Forces	*10*	
8	Friction	*11*	
	Exam 3 (two part exam)	***12 & 13***	***11/15/17 & 11/20/17***
9	Center of Gravity and Centroid	*12, 13*	
10	Moments of Inertia / Review for Final Exam	*14, 15*	
	Final Exam	***16***	***12/13/17***

**This calendar will be adjusted to the needs of the course. Changes will be based on the course progress. The in-class exam dates could be moved one or two days up or down. The Final Exam date is fixed and will not change.*

Evaluation/Grading Policy:

Exams (2 @ 12%, 1@16%)	40%	400 pts	
Final Exam	20%	200 pts	
Quizzes/Homework (22, drop 2, @ 2% each)	40%	400 pts	
Total	100%	1000 pts	possible

Grading Scale:

A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%

Other Course Requirements: A scientific graphing calculator is required for this course.

Student Responsibilities/Expectations: Regular and punctual attendance at all scheduled classes is expected. Attendance is necessary for successful completion of course work. There is no make-up on in-class quizzes and no allowance to turn in assignments late. Exams missed will be rescheduled only for instances of obvious emergencies, documented illness, and/or NTCC sponsored activities.

NTCC Academic Honesty Statement:
"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

Academic Ethics:
The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

ADA Statement:
It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to obtain a copy of the Request for Accommodations, please refer to the NTCC website - Special Populations.

Family Educational Rights And Privacy Act (FERPA):
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Other Course Policies:
There will be no cell phone usage in the classroom. Students will be warned if caught using a phone during class. A student will be removed from class if the disruption continues.

The college's official means of communication is via your campus email address. I will use your campus email address and Blackboard to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.