

COURSE INFORMATION

Course:	EGR 190
Course Title:	Statics
Lecture Hours/Week:	3.0
Lab Hours/Week:	0.0
Credit Hours/Semester:	3.0

[DL ATTENDANCE/VA STATEMENT](#)
[TEXTBOOK INFORMATION](#)

COURSE DESCRIPTION

This course is a study of forces and the effect of forces acting on bodies in equilibrium without motion.

COURSE COMPETENCIES

Upon successful completion of this course, the student should be competent to perform the following:

Module 1

- Review math requirements for Statics.
- Define the fundamental terms used in Statics.
- Resolve a force into vector components and the components into a vector.
- Calculate moment and moment of a couple.
- Find the resultant of a concurrent system of forces.
- Apply principles of moments: Varignon's Theorem.

Module 2

- Study the conditions of equilibrium.
- Construct free body diagrams.
- Apply equilibrium equations to rigid body problems.

Module 3

- Define fundamental terms used in friction.
- Apply theories of friction in the following cases.
 - -Belts and pulleys
 - -Wedges
 - -Power screws
 - -Solve friction problems involving the above

Module 4

- Locate the centroid of composite areas and the center of gravity for structural and machine elements.
- Calculate moment of inertia and radius of gyration for composite areas.

MINIMAL STANDARDS / PERFORMANCE OBJECTIVES

Module 1

- On a closed book test, student will define the fundamental terms used to identify types of forces encountered in a statics problem. The student will demonstrate the ability to describe position, forces, and moments in terms of vector components in two dimensions and must explain the application of principles such as, transmissibility of force and Varignon's Theorem, with a minimum accuracy of 70%.

Module 2

- On a closed book test, the students will demonstrate the ability to select suitable reference coordinate axes, construct free body diagrams, and understand the relation between constraints imposed by supports and support forces with a minimum acceptable score of 70%. In a closed book written test, the student will demonstrate the ability to formulate static equilibrium equations for a rigid body and evaluate member forces in trusses, frames, and machines with a score no less than 70%.

Module 3

- In a closed book exam, students will demonstrate the ability to apply Coulomb's dry friction laws to engineering problems involving belts, wedges and power screws with a minimum acceptable score of 70%.

Module 4

- In a closed book exam, students will demonstrate the ability to determine the location of centroid and center of gravity, and calculate moment of inertia, and radius of gyration with a minimum accuracy of 70%.

COURSE REQUIREMENTS

Students are responsible for attaining the course competencies through completion of the following requirements:

ATTENDANCE

Students will be dropped from this class when their unexcused absences exceed the number of contact hours (3) scheduled per week.

Unexcused absence from a scheduled or announced quiz or exam will result in a grade of ZERO.

In the case of the excused absence, it is the responsibility of the student to arrange for make up of the work missed.

PARTICIPATION IN CLASS DISCUSSIONS

ACADEMIC HONESTY

York Technical College adheres to the South Carolina TECH Student Code, approved by the State Board for Technical and Comprehensive Education on March 13, 1974 (revised last April 25, 1984). Copies of this code are available in the Library and from Student Services. ... Any student caught cheating or involved in any other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action.

EVALUATION CRITERIA / GRADING

The grading scale follows:

GRADE	POINTS
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

EVALUATION METHOD	TOTAL POINTS
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Quizzes (4 minimum)	60%
Comprehensive exam score	25%
Problem solution notebook	<u>15%</u>
	100%

ENTRY LEVEL SKILLS

It is recommended that the student be able to demonstrate the capability to solve problems using algebra (including solutions of quadratic equations and solutions of simultaneous linear equations), plane geometry, and basic trigonometry.

PREREQUISITES

PHY 201

CO- REQUISITES

None