

Montgomery County Community College
 EGT 213
 Applied Strength of Materials
 4-3-3

COURSE DESCRIPTION:

This course is an intensive study of the mechanical properties of materials used in engineering. Topics covered include stress-strain relationships, shear and moment diagrams, design of beams and columns, welded connections, pressure vessels, stress concentrations, and material properties. This course is subject to a course fee. Refer to <http://mc3.edu/adm-fin-aid/paying/tuition/course-fees> for current rates.

REQUISITES:*Previous Course Requirements*

- MAT 162 - Precalculus II
- EGT 203 - Applied Statics

Concurrent Course Requirements

None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Demonstrate a complete understanding of the basic principles of real life problems.	Lecture Group Problem Solving Design of Experiments	Exams Problem Set Reviews Design of Experiments Review
2. Use logical and methodical problem solving techniques.	Lecture Group Problem Solving Design of Experiments	Exams Problem Set Reviews Design of Experiments Review

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. Basic Concepts in Strength of Materials
2. Design Properties of Materials
3. Design of Members under Direct Stresses
4. Deformation and Thermal Stresses
5. Torsional, Bending, Deflection and Shearing Forces as Applied to Beams, Machines and Structures

6. Stress and Mohr's Circle
7. Pressure Vessels
8. Connection Analysis

LEARNING MATERIALS:

Textbook:

Molt, Robert L. *Applied Strength of Materials* (5th ed.) 2007. Prentice Hall.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by: H. Thomas Tucker, Jr. Assistant Professor of Engineering	Date: 11/28/2004
Revised by: William H. Brownlowe Associate Professor of Engineering	Date: 7/22/2013
VPAA/Provost or designee Compliance Verification Victoria L. Bastecki-Perez, Ed.D.	Date: 1/15/2014
Revised by: Debbie Dalrymple	Date: 12/17/2017
VPAA/Provost or designee Compliance Verification:	Date: 1/9/2018



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.