

# Hagerstown Community College Master Syllabus

## EGT-231-01 Strength of Materials

### Course Information

EGT 231: Strength of Materials

3 Credits

Spring 2019

January 7, 2019 through April 29, 2019

Class: Online

### Instructor Information

### Course Description

This course is a technical study of the stresses and strain in materials from the action of external forces. The application of these principles is used in the design of structures and machines. Axial loads, torsion, and bending are analyzed individually and in combination. The deflection of beams and stability of columns are studied.

\* Prerequisite: EGT 136

### TEXTBOOK (REQUIRED):

*Statics and Mechanics of Materials, Hibbler, Pearson 5th Edition, ISBN# 0-13-438259-5*

### STUDENT LEARNING OUTCOMES:

Upon completion of this class the student will be able to:

Students will know *HOW* to apply the concepts of stress analysis, theories of failure and material science to analyze, design and/or select commonly used mechanical components.

Students will *UTILIZE* techniques, skills and modern engineering tools, such as MTS testing machine, necessary for modern engineering practice.

Students will *DEMONSTRATE* the application of mechanical engineering design theory to identify and quantify machine elements in the design of commonly used mechanical systems.

Students will *LEARN* to effectively communicate (in written and oral form) proper engineering practices as it relates to structural analysis.

***Revised 01/04/2019***

### TOTAL HOURS REQUIRED FOR THIS COURSEWORK:

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute “academic” hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to do at LEAST 2 hours of coursework outside of class for each hour of in-class coursework.

### Minimum clock hours required for this course

	DIRECT Faculty Instruction In-class 37.5 hours required	Student Work Out of Classroom 100 hours required
In-class “lecture”	37.5 h	
Reading chapters		20 h
Quiz/activity for each chapter		10 h
Homework		30 h
4 lecture exams		40 h
<b>Total Hours</b>	<b>37.5 hours</b>	<b>100 hours</b>

### SERVICES FOR STUDENTS WITH DISABILITIES:

Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at [dss@hagerstowncc.edu](mailto:dss@hagerstowncc.edu) or at 240-500-2530.