

Hagerstown Community College Master Syllabus

EGT-234-01 Machine Design

Course Information

EGT 234: Machine Design

4 Credits

Spring 2109

January 7, 2019 through April 29, 2019

Mondays and Wednesdays, from 1 P.M. to 2: 40 P.M.

Instructor Information

Course Description

This course involves the study of various machine parts that carry loads and transmit power. Strength of material theory is expanded to include stress concentration, fatigue, and failure. Rivets, welds, springs, power transmission threads, chain and belt drives, gears, and bearings are included in an analytical approach to the design process.

***Prerequisite: EGT 231. Semester offered: Periodically.**

Textbook and Course Materials

Machine Elements in Mechanical Design, Mott, Pearson, 6th Edition, ISBN (13) 978-0-13-444118-4

Student Learning Outcomes

EGT-234 Machine Design is the last course in a sequence of courses that include EGT-136 Mechanics and EGT-231 Strength of Materials. EGT-234 is the capstone course in the Mechanical Engineering Technology Program. It is expected that 80% of the students enrolled in this course will complete the MET program and be employed in a related field or continue their education.

The learning outcomes are as follows:

1. 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 machine components.
2. Students will **UTILIZE** techniques, skills and modern engineering tools, such as CAD/CAE software, necessary for modern engineering practice.
3. Students will **DEMONSTRATE** the application of mechanical engineering design theory to identify and quantify machine elements in the design of commonly used mechanical systems.
4. Students will **LEARN** to effectively communicate (in written and oral form) proper engineering practices as it relates to machine design projects.

Definition of Credit Hour: Classroom Courses

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 130 hours REQUIRED
In-class "lecture"	37.5 hours	
Reading chapters		20 hours
Activity for each chapter		30 hours
Research project		30 hours
3 lecture exams		30 hours
Exam Preparation		20 hours
Total Hours	37.5 hours	130 hours

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 or at 240-500-2530.