

## Course Outcomes Guide (COG)

**Course Title:** EGT 234 Machine Design

**Date:** December 20, 2017

**Course Team:** Dr. Olu Bamiduro

### Expected 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. Teach students 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. Utilize techniques, skills and modern engineering tools, such as CAD/CAE software, necessary for modern engineering practice.
3. Teach students how to apply mechanical engineering design theory to identify and quantify machine elements in the design of commonly used mechanical systems.
4. Teach students how to effectively communicate (in written and oral form) proper engineering practices as it relates to machine design projects.

### Assessment

The assessment of the course will be administered to all sections of EGT 234 by the below methods:

1. Examinations
2. Homework Assignments
3. Student assigned Chapter-Section Presentations

### Validation

The following criteria will be used to validate EGT 234:

1. The ability to apply knowledge of mathematics, science, and engineering.
2. The ability to design and conduct experiments, as well as to analyze and interpret data.
3. The ability to identify, formulate, and solve engineering problems.
4. The ability to communicate effectively.
5. The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**Results** Data may be seen in table below:

	<b>FALL 2017</b>	<b>SPRING 2018</b>	<b>FALL 2018</b>
# of Active Students	3	N/A	

# unofficially walked away from class	N/A		
% of success	83.3%		
Final Exam Score (Average)	90.1%		
Mean Course Grade	2.31		
Areas of difficulty in course content	Using Bending Moment to solve design problems		

**Follow-up** (How have you used or how will you use the data to improve student learning?)

Students had a difficult time applying the results from bending moment diagrams solve and analyze beam exercises. As a remedy, an aggressive approach in understanding the fundamentals taught in EGT 231 has to be addressed.

**Budget Justification** (What resources are necessary to improve student learning?)

None at the moment