

Common Course Outline
EGNT 101
Introduction to Engineering Technology
3 Credits

Community College of Baltimore County

Description

EGNT 101 – Introduction to Engineering Technology is a course in which students cover topics in a variety of construction and engineering disciplines. Students examine various careers in engineering and the methods and processes used in the fields of civil, surveying, construction, electrical, mechanical, and other engineering fields. Topics include robotics, soil mechanics, project management, ethics, engineering design, navigation system, and measurement equipment. Skills are applied through engineering challenges and hands on field activities.

3 Credits: *2 lecture hours per week; 2 laboratory hours per week*

Prerequisites: ACLT 052 or ACLT 053 or (ESOL 052 and ESOL 054) and MATH 083

Overall Course Objectives

Upon completion of this course students will be able to:

1. describe several roles and educational requirements of engineers and engineering technicians;
2. describe the major engineering disciplines and engineering careers;
3. describe the steps in the engineering design process;
4. apply basic engineering skills using analytic analysis and dimensional consistency;
5. organize individual activities within a design group;
6. analyze forces on rigid bodies in equilibrium;
7. use Excel to perform calculations and graph data;
8. analyze a soil sample;
9. use surveying equipment;
10. analyze current and voltage in simple circuits;
11. program a robot and track its location using a navigation system;
12. explain analysis results clearly-orally, in writing, and/or through diagrams and calculations; and
13. describe the ethical responsibilities of an engineer or engineering technician.

Major Topics

- I. Engineering disciplines
- II. Roles of engineers and engineering technicians
- III. The engineering design process

IV.Engineering ethics
V.Project management
VI.Engineering analysis and calculations
VII.Engineering measurements and equipment
 A. Systems of units
 B. Dimensional analysis
 C. Accuracy and precision
VIII.Soil mechanics
IX.Statics
X.Electric circuits
XI.Surveying
XII.Robotics
XIII.Global Navigation System

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- A minimum of four homework assignments
- A midterm and final exam
- A minimum of four engineering labs, including robotics, electronics, statics and surveying

Written Assignments: Students are required to use appropriate academic resources.

Other Course Information

This course is a required core course for the A.A.S. in Engineering Technology.
This course serves as the basis for the Engineering Technology curriculum.
Portions of this course will be taught in a computerized environment and in the field.

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