

Course Outline
ENSC 101
Introduction to Engineering Design
3 semester hours

The Community College of Baltimore County

Description

Introduction to Engineering Design

Examines the engineering process, methods of graphical representation and communications skills; students work in teams to design and build a project by utilizing engineering principles and appropriate software.

Prerequisite: MATH 165, or higher level Math, or consent of program coordinator Note: ENSC 101 is for Engineering Transfer program students only

Overall Course Objectives

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

1. Describe the steps in the engineering design process.
2. Apply basic engineering skills in a project environment.
3. Develop, evaluate and select between alternative solutions to a design requirement.
4. Coordinate individual activities within a design group.
5. Utilize CAD to develop and document a design.
6. Utilize an electronic Spreadsheet to analyze design situations.
7. Prepare and present interim and final project briefings.
8. Utilize wordprocessor, email and the internet skills in a project environment.
9. Work in a team to design, build and demonstrate a specific project requirement.
10. Describe the major engineering disciplines.
11. Describe the technical and ethical responsibilities of a professional engineer.

Major Topics

1. Introduction to Engineering
2. Sketching and orthographic projection
3. Scales and scaled drawings
4. Computer-Aided Drafting & Design (CADD) fundamentals
5. Auxiliary and section views
6. Dimensions
7. Using Excel for engineering applications
8. Project organization and development
9. The engineering design process

10. Design team organization and tasks
11. Development and evaluation of design alternatives
12. Project documentation
13. Briefing organization and presentation
14. What do engineers really do
15. Professional responsibilities of engineers

Course Requirements

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

1. Graded exercises
2. Periodic tests
3. Comprehensive final project
4. Class participation

Other Course Information

This course is taught in a computerized environment.

This course is open only to students registered as Engineering Transfer program students

There are 2 lecture and 3 laboratory hours per week.

Banner Short Course Description

Provides students with experience in the engineering process, methods of graphical representation and communications skills. Fulfills ENES 100/101 requirement in University of Maryland system Engineering programs. Prerequisite: Registration as an Engineering Transfer program student