

# Northwest Arkansas Community College

Division of Science and Mathematics

## Discipline Code

GNEG

## Course Number

1103

## Course Title

Introduction to Engineering

## Catalog Description

Intended for potential engineering students in the first year of study. It is designed to introduce these students to the process and diversity of the various engineering fields. It also acquaints students with modeling and problem-solving techniques used by engineers as well as some of the computer tools necessary for pursuing a degree in engineering.

**Prerequisites** MATH 1203, MATH 1203R, or appropriate placement scores.

## Credit hours

3

## Contact hours

45 Lecture and 15 lab

## Load hours

3.67

## Semesters Offered

Fall and Spring

## ACTS Equivalent

GNEG 1103. Introduction to Engineering

## Grade Mode

A-F

## Student Learning Outcomes

Students successfully completing this course will possess an understanding of fundamental engineering concepts demonstrated by the ability to:

- Describe the role of engineers as problem solvers and their professional behavior.
- Describe specifics of the various engineering disciplines and functions,

- Communicate their design in oral and written form,
- Apply problem solving techniques to basic engineering problems,
- Work in teams to solve and present engineering design problem,
- Analyze and judge ethical issues related to engineering field.
- Understand of numbers, units, unit conversion, tables and graphs to solve basic engineering problems.
- Work in team settings to present a physical device or instrument that will be of benefit to the community following EMPACT criteria.

## **General Education Outcomes Supported**

- Students develop higher order thinking skills.
- Students develop information literacy

## **Standard Practices**

### **Topics**

- Description of various engineering disciplines
- Units and unit conversion
- Problem solving techniques for basic engineering problems
- Engineering design
- Engineering ethics
- Engineering Communications
- Tables and Graphs

### **Learning activities**

- Courses must, at a minimum, cover the core learning outcomes for each topic. Faculty may add to these outcomes but may not omit any of them.
- Since developing student higher order thinking skills and information literacy are essential outcomes of this course, all instructors should include learning activities that develop these outcomes in their courses and identify them in course syllabi. Instructors should describe how these activities will be evaluated in their course syllabi and/or reflected in their gradebooks.

### **Assessments**

Three exams will be administered throughout the semester. Assessment questions will be included in the exams. The assessment questions results will be collected each semester.

### **Grading guidelines**

- At least 60% of the grade should come from proctored exams
- Homework assignments will be at least 15% of the final grade.
- Team project will be 20% of the final grade.