NorthWest Arkansas Community College
Division of Science and Mathematics

Course Number and Title
GNEG 1103 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 1204 or MATH 1205 with a grade of C or better or appropriate placement scores.

Credit hours/Contact hours/Load hours
3 credit hours/ 4 contact hours/ 3.34 load hours

Target Audience/Transferability
This course is designed for students who are transferring into an engineering program at a 4-year institution. It should transfer in as 3 a credit hour Intro course for those engineering areas requiring such a course. Transferability, as always, depends on the policy of the senior institution.

Student Learning Outcomes
Students successfully completing this course will possess an understanding of fundamental engineering concepts demonstrated by having:

1. Understand the role of engineers as a problem solvers and their professional behavior.
2. An ability to describe specifics of the various engineering disciplines and functions,
3. An ability to communicate their design in oral and written form,
4. An ability to apply problem solving techniques to basic engineering problems,
5. An ability to work in teams to solve and present engineering design problem,
6. An ability to judge ethical issues related to engineering field.
7. Ability to apply understanding of numbers, units, units conversion, tables and graphs to solve basic engineering problems.
8. Ability to work in teams settings to present a physical device or instrument that will be of benefit to the community following EMPACT criteria.

Topics

1. Description of various engineering disciplines
2. Problem solving techniques for basic engineering problems
3. Engineering design
4. Engineering ethics

Forms of Assessment

1. Each instructor will include a set of departmental final exam questions on his or her final exam. These questions will be in direct support of the Student Learning Outcomes The questions will compose at least 10% of the students' overall grade in the course and will be graded according to a standard grading rubric.
2. A team presentation of a project based on EMPACT Criteria. The team presentation will compose 20% of the student overall grade in the course and will be graded according a standard grading rubric.

The results of these assessments and overall student performance will be reported when final grades are turned in.