

**J. Sargeant Reynolds Community College**  
**Course Content Summary**

**Course Prefix and Number:** EGR 124

**Credits:** 3

**Course Title:** Introduction to Engineering and Engineering Methods

**Course Description**

Introduces the engineering profession, professionalism, and ethics. Covers problem presentation, engineering calculations, digital computer applications, word processing, worksheets, and programming in MATLAB, ALICE, FORTRAN or C++ and elementary numerical methods. Lecture 3 hours per week.

**General Course Purpose**

Introductory Engineering Course for all AS Engineering majors.

**Course Prerequisites:**

Corequisite: MTH 173

**Course Objectives**

Upon completing the course, the student will be able to:

- a. Understand the various branches of the engineering profession, the code of ethics, and engineering professionalism.
- b. Work problems involving algebra, trigonometry, exponential, roots and logarithms.
- c. Work problems using vectors, statics, material balance and energy.
- d. Do technical data presentation and use engineering software such as MATLAB.
- e. Independently develop, test, debug, and operate a computer program on an assigned engineering problem.
- f. Solve engineering problems using worksheet software such as EXCEL.

**Major Topics to be Included**

- a. Introduction to the engineering profession and engineering solutions
- b. Selected topics from algebra, trigonometry, unit conversion, and dimensions
- c. Engineering estimation and approximation
- d. Representation of technical information and curve fitting
- e. Using computer software including equation solvers, word processors, worksheets
- f. Introduction to computer programming: selective execution and repetitive execution
- g. Input/output: list-directed and format directed
- h. Object Oriented Programming
- i. Additional introductory engineering topics such as material balance

**Effective Date of Course Content Summary:** August 2008