**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, programming, and elementary numerical methods. Design project also includes using presentation software, database searching, and prototyping. Prerequisite or Co-requisite: MTH 263. Lecture 3 hours per week.

**General Course Purpose:** Introductory engineering course for Engineering AS majors

**Prerequisite or Co-requisite:**
MTH 263

**Course Objective:**
Upon completing the course, the student will be able to

a. Recognize the various branches of the engineering profession, code of ethics, and engineering professionalism;
b. Work problems involving algebra, trigonometry, exponential, roots, and logarithms;
c. Present technical data, perform dimensional analysis, and use engineering software;
d. Use presentation software and word processing software;
e. Search databases for content related to a specific engineering problem;
f. Independently develop, test, debug, and operate a computer program on an assigned engineering problem; and
g. Solve engineering problems using spreadsheet 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, and presentation software
f. Introduction to computer programming using MATLAB: selective execution and repetitive execution
g. Input/output: list-directed and format directed
h. Research of a real-world problem and alternate design solutions
i. Design project in teams with prototype, final report and presentation

**Effective Date of Course Content Summary:** April 30, 2019