General Information

Date
March 7th, 2018

Author
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Department
Science and Technology

Course Prefix
ESC

Course Number
100

Course Title
Introduction to Engineering

Course Information

Credit Hours
3

Lecture Contact Hours
2

Lab Contact Hours
2

Catalog Description
An introduction to various branches of engineering using descriptive and quantitative perspectives. Topics include modeling and mathematical analysis of basic engineering problems related to chemical, mechanical, and electrical systems with incorporation of topics of sustainability and clean environment. Problem solving, critical thinking, and technical writing skills are emphasized throughout the course.

Key Assessment
This course contains a Key Assessment for the AS Engineering Science program

Prerequisites
None
Co-requisites
MAT 145

Grading Scheme
Letter

First Year Experience/Capstone Designation

This course is designated as satisfying the outcomes applicable for status as a First Year Experience

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category
None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

- Vitality
- Inquiry
- Perseverance
- Interconnectedness

Course Learning Outcomes

1. Define engineering and its various branches

2. Identify the various career paths that can be pursued with an engineering degree

3. Discuss the components of a modern engineering education

4. Use engineering analysis tools to solve basic, introductory level engineering problems involving mechanical or electrical systems

Outline of Topics Covered

I. Introduction to engineering

II. Branches of engineering

III. Engineering education
IV. Mechanical engineering
V. Linear equations in engineering
VI. Quadratic equations in engineering
VII. Trigonometry and vectors in engineering
VIII. Industrial engineering
IX. Data analysis using spreadsheet programs
X. Electrical engineering
XI. Complex numbers in engineering
XII. Sinusoids and harmonic signals in engineering
XIII. Systems of equations and matrices in engineering
XIV. Derivatives in engineering
XV. Civil engineering
XVI. Integrals in engineering
XVII. Chemical engineering
XVIII. Biomedical engineering
XIX. Differential equations in engineering