

**MOHAWK VALLEY COMMUNITY COLLEGE
UTICA AND ROME, NEW YORK**

CWCC Course Syllabus

Course Code: ES151

Course Name: Introduction to Engineering

Course Credit Hours: C - 1, P ☐ 3:1 or ☐ 2:1* – 2, ILS - CR - 2

** For practicum hours, indicate whether the contact to credit is calculated at 3:1 or 2:1.*

Course Prerequisites/Corequisites: None

I. Catalog Description

This is an introductory course designed to meet the needs of Engineering Science students. The course provides a look at the various fields of engineering. Topics include, engineering majors and professions, computer literacy for engineers, working in a team setting, use of practical engineering tools, and engineering ethics.

II. Course Texts or Bibliography:

III. Other Required Course Materials:

IV. Student Learning Outcomes: (verified by Coordinator of Assessment and Academic Programming ☐)

- 1. Differentiate between various engineering fields and career options.**
- 2. Identify and design solutions for Engineering problems.**
- 3. Effectively utilize computer technology for engineering including: spreadsheets (e.g. Excel) and industry standard CAD or Solid Modeling with native parametric capability (e.g. Autodesk Inventor, SolidWorks, OnShape).**
- 4. Apply the team approach to assigned engineering projects.**
- 5. Communicate effectively.**
- 6. Describe ethical conduct in the professional lives of engineers.**
- 7. Explain the transfer process to Bachelor granting institutions.**

V. Detailed Course Outline:

I. Introduction to Engineering

A. History of Engineering

B. Engineering Profession

1. Engineering Majors
2. Engineering Job Market
3. Working as an Engineer

II. Engineering Student Skills

A. Student Success

1. Engineering Curriculum
2. Classroom Strategies
3. Problem Solving

B. Engineering Student Transfer

1. Transfer Schools
2. Transfer Curriculum

C. Teams and Projects

1. Teamwork
2. Project Management

D. Design and Communication

1. Technical Communication
2. Engineering Design
3. CAD and Solid Modeling
4. Spreadsheets

III. Ethics

A. Ethics

1. History of Engineering Ethics
2. Professional Obligations
3. Historic Ethical Failures

IV. Laboratory and Final Project

A. Laboratory Experiments

1. The 2 hour practicum will be devoted to activities that teach the importance of teamwork and problem solving in various engineering fields.

B. Final Project

1. The course will incorporate a significant final project that will require students to design, build, and present on an engineering task. Final project will incorporate use

of CAD/Solid Modeling, physical building of prototypes, demonstration, and formal reports.

VI. *Detailed Practicum Outline*:*

Weeks 1-10 Projects relating to Group Dynamics, Presentation, and Documentation:
-Examples: Group Presentations, Designing engineering solutions with limited resources, Preparing Reports, etc.

Weeks 11-14 Final Project: Students will be given an extensive design project that requires building and demonstrating a prototype.

VII. *Potential Course Assessments:*

Reading Quizzes, Transfer Schedules, Reports (on Engineering Failures for example), Presentations, Career related documents (resume, cover letters, etc.)

VIII. *Sample Grading Scheme, Parameters, or Policies:*

IX. *Course Policies:*

** For courses that include Practicum time separate than Course time, provide as detailed a description or timeline of what the practicum will entail, e.g. laboratory schedules, internship expectations, etc.*

Course Outline Contributors:

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Date Course Outline Was Approved: