MOHAWK VALLEY COMMUNITY COLLEGE

UTICA AND ROME, NEW YORK

COURSE OUTLINE

INTRODUCTION TO ENGINEERING

ES151

REVIEWED AND FOUND ACCEPTABLE  ***04/01/2017***

REVIEWED AND FOUND ACCEPTABLE ***04/24/2017***

I. CATALOG DESCRIPTION:

ES151 INTRODUCTION TO ENGINEERING C‑1, P‑2, CR‑2

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.

Perquisites: None

II. STUDENT LEARNING OUTCOMES

1. Differentiate between various career options they have within the field of engineering through visitations by practicing engineers.

2. Identify, formulate, and solve Engineering problems.

3. Learn computer technology for engineering like, graphical applications software (CAD and/or Solid Modeling), and mathematical or laboratory software applications.

4. Apply the team approach to assigned engineering projects.

5. Communicate effectively.

6. Learn about the ethical conduct in the professional lives of engineers.

III. DETAILED COURSE OUTLINE:

I. Introduction to Engineering

A. History of Engineering

1. Ancient Engineering

B. Engineering Profession

1. Engineering Majors

2. Emerging Fields

3. Job Placement Trends

4. Salaries

5. Diversity

6. Global and International Engineering

7. Future Challenges for Engineers

II. Engineering Student Skills

A. Student Success

1. Engineering Curriculum

2. Classroom Strategies

3. Problem Solving

B. Teams and Projects

1. Teamwork

2. Project Management

C. Design and Communication

1. Technical Communication

2. Engineering Design

3. CAD and Solid Modeling

III. Ethics

A. Ethics

1. History of Engineering Ethics

2. Professional Obligations

3. Historic Ethical Failures

IV. Final Project

IV. LABORATORY EXPERIMENTS:

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