

CATHOLIC CENTRAL COURSE SYLLABUS

INTRODUCTION TO ENGINEERING 1

SCIENCE DEPARTMENT

LENGTH: 1 SEMESTER CREDITS: 0.5

1. Prerequisites: General Physics, Physics or Honors Physics
2. Text Books: There is no official textbook for this course.
3. Course Goals and Objectives: To gain an understanding of the basics of mechanical and industrial engineering.
4. Course Description:

4.1 General Overview:

This course is designed to help students who are interested in mechanical or industrial engineering. We will spend a quarter on each type of engineering, focusing on the types of work these engineers do, the problems that they solve, and the responsibilities that these types of engineers have. Students will use knowledge from this course to help guide their path as to which type of engineering they may be interested in pursuing in college.

4.2 Itemized Details of Course Content

4.2.a First Quarter

1. Mechanical Engineering

- a. What does a mechanical engineer do?
- b. Product design vs. manufacturing
- c. Manufacturing equipment design
- d. Materials
- e. Thermodynamics/heat transfer
- f. Torque and forces

4.2.b Second Quarter

1. Industrial Engineering

- a. What does an industrial engineer do?
- b. Human factors
- c. System optimization
- d. Manufacturing/product data evaluation

4.3 Laboratory Work

Laboratory work will occur every 1-2 weeks and will be used to reinforce topics discussed in the regular classroom session.

5 Course Assignments and Requirements:

5.1 Frequency of Tests

Quizzes/tests will occur every 1-2 weeks. A comprehensive semester exam is given at the end of the semester.

5.2 Frequency of Assignments

Homework will be assigned regularly (generally 3-5x per week) to allow students the opportunity to practice the material.

5.3 Grading

Approximately 60% Tests/Quizzes, 40% Homework/Participation/Laboratories