

**MIAMI UNIVERSITY**  
**SCHOOL OF ENGINEERING AND APPLIED SCIENCE**  
**DEPARTMENT OF ENGINEERING TECHNOLOGY**  
**INTRODUCTION TO ENGINEERING TECHNOLOGY**

**ENT 137**

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**Description:**

An introductory course for students entering Engineering Technology. This course covers broad elementary engineering concepts to include a definition of Engineering Technology, the distinction between the various areas of focus in Engineering Technology, introduction to engineering “terminology”, and a survey of current issues (problems, research efforts, recent developments, etc.) in the engineering field.

**Prerequisite:** High School Algebra

**Text:** Pond, R. Introduction to Engineering Technology, 7<sup>th</sup>, Prentice Hall, 2009. Supplemental readings (via handouts)

**General Objectives:**

Upon completing this course the student will be able to identify and define basic concepts within engineering technology (energy, power, design, maintenance, teamwork, ethics / accountability). In addition, the student will begin to utilize terminology applicable to the field of Engineering Technology. The student will also be able to make a distinction between the various concentrations within Engineering Technology; in particular the mechanical and electrical concentrations.

This course is designed to meet the following competencies in the Engineering Technology program:

- A recognition of the need for and an ability to engage in lifelong learning.
- An ability to understand professional, ethical, and social responsibilities.
- A respect for diversity and knowledge of contemporary professional, societal, and global issues.
- A commitment to quality, timeliness, and continuous improvement.

**Topical Outline:**

1. Engineering Science and Engineering Technology
2. Careers in Engineering Technology (includes Project Management component)  
Advising, Co-op and Career Placement
3. College survival skills, DAR's, majors, etc
4. Lab Safety
5. Measurement Techniques
6. Role of Liberal Education in Engineering Technology
7. History of Technology
8. Ethics in Engineering
9. The Environment
10. Diversity in Engineering and Technology

**Method of presentation:**

Classroom presentations will be primarily lecture, demonstration, and discussions. Plant tours may be scheduled on occasion in order to supplement or replace lectures. These tours will be scheduled as opportunities present themselves throughout the semester.

**Method of Evaluation:**

You will be evaluated on classroom participation and performance on assignments and examinations using the following letter grading system:

Grading scale:

- A – 90% to 100%
- B – 80% to 89%
- C – 70% to 79%
- D – 60% to 69%
- F – below 60%

The following is the distribution of credit for the required tasks:

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| Individual Paper (Careers)   | 15% |
| Team Oral Presentation (History of Technology)                             | 15% |
| Ethics Discussion/Presentations (Ethics)                                   | 15% |
| Team Lab Report (Measurement lab)  | 15% |
| Attendance and Class Participation (all sessions required)                 | 20% |
| HW, classroom discussion, interaction, questions, & classroom contribution |     |
| Individual Final Paper/Final Exam  | 20% |

**ENT 137 Class Schedule**

| Week | Topic  | Reading     | HW   |
|------|--|-------------|--|
| 1    | Engineering Technology as a Career<br><a href="http://www.nyseta.org/et1.htm">http://www.nyseta.org/et1.htm</a>  | Chapters 1  | HW#1-Ch1 #3,7  |
| 2    | Careers Choices in Engineering Technology<br><a href="http://www.collegegrad.com/careers/proft05.shtml">http://www.collegegrad.com/careers/proft05.shtml</a> | Chapter 2,3 | HW#2-Ch 1#10,16  |
| 3    | Co-Op presentation   | Chapter 3   | HW#3-Ch1 #19<br>Careers Paper Due                                    |
| 4    | Survival skills, Advising, Reading your DAR, majors, etc.  | Chapter 4   | Print your DAR(s) and bring to class<br>HW#4-Ch 3 #17, Ch 4 #16, #27 |
| 5    | Using the Engineering Library  | Chapter 3   | HW#5-Ch1 #14   |
| 6    | How to write a lab report  | Chapter 5   | HW#6-Ch 4 #36, 46  |
| 7    | Scientific Notation  | Chapter 6   | HW#7-Ch 5 #34, 39, 42, 47  |

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|-------|--|--------------------|--|
| 7     | Measurement Techniques   | Chapter 7          | HW#8-Ch 6 #30, 41                                  |
| 8     | Significant Digits/Percent Average/Analog and Digital Meter Reading    | Chapter 7          | HW#9-Ch 7 #4, 11                                   |
| 9     | Measurement Lab  |                    | Work on individual lab reports. Due next week,     |
| 10    | History of Technology-Computers  | Chapter 8          | Work on Team History Report with Oral Presentation |
| 11    | History of Technology-Manufacturing                                    | Chapter 9          | Team History Oral Presentations                    |
| 12    | More oral presentations  |                    |  |
| 13    | The Role of Liberal Education in Engineering                           | Chapter 10         | HW#10-Ch 10 #32                                    |
| 14    | The Environment and Technology Diversity in Engineering and Technology | Chapter 10         | HW#11-Ch 10 #23, 27                                |
| 14-15 | Ethics and Engineering Technology                                      | Ethics Discussions | Ethics Handouts                                    |
| 16    | Individual Final Paper Due   |                    |  |

### **Miami University Learning Community**

Miami University is committed to fostering a supportive learning environment for all students irrespective of individual differences in gender, race, national origin, religion, handicapping condition, sexual preference, or age. Students should expect, and help create, a learning environment free from all forms of prejudice. Disparaging comments, sexist or racist humor, or questioning the academic commitment of students based upon these individual differences are behaviors that undermine our learning community. If such behaviors occur in class, please seek the assistance of your instructor or department chair.

Prepared by: R. Speckert January 2009