ME 370: The Mechanical Engineering Profession

Lecture 01: Introduction

Purpose

Prepare you for the non-technical aspects of you career

Course Learning Objectives

Upon complete of this class you should be able to

- I. Develop a five-year career plan
- 2. Demonstrate professional standards of written communication, including email
- 3. Describe the cost of hiring an engineer and other operating costs associated with engineering
- 4. Describe the role of patents and intellectual property rights.
- 5. Perform a preliminary patent search at uspto.gov

Course Learning Objectives

(continued)

- 6. Distinguish between sustaining and disruptive innovation; distinguish between incremental and radical innovation
- 7. Identify the basic tenets of the ASME code of ethics
- 8. Demonstrate basic knowledge of ethical reasoning through the discussion of case studies.
- 9. Discuss the role of ethics in design decisions.

Course Learning Objectives

(continued)

- 10.Describe social, environmental, political and economic factors influencing development and use of technology
- I I.Describe how considerations of sustainability affect engineering decisions

Instructor

Gerry Recktenwald

gerry@pdx.edu

Associate Professor & Department Chair

Engineering Building, Suite 400

503-725-4290

Relationship of ME 370 to the BSME Curriculum

Department of Mechanical and Materials Engineering Mechanical Engineering Program

pdx.edu/mme/undergraduate-mme

Possible 4 Year Course Plan

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Junior year prerequisites

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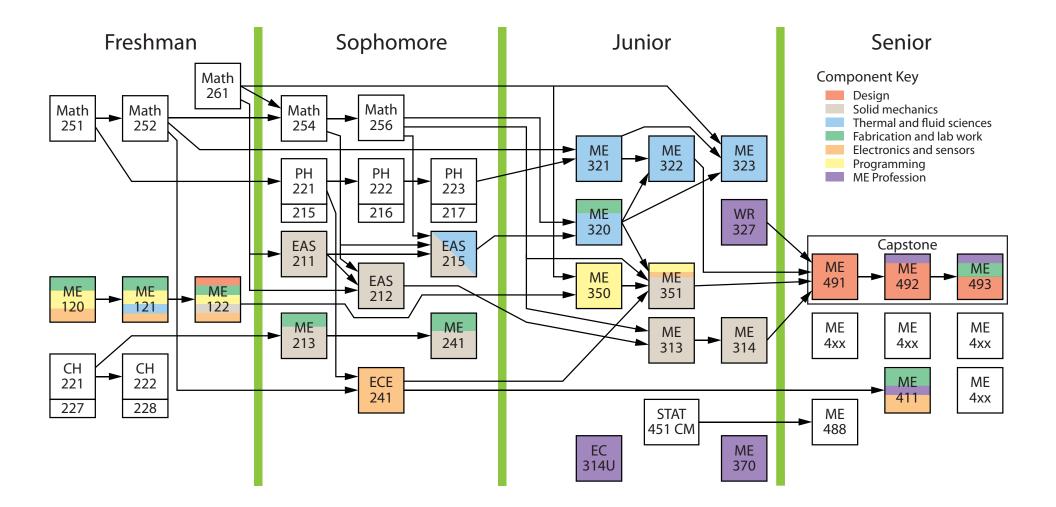
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Key senior year prerequisites

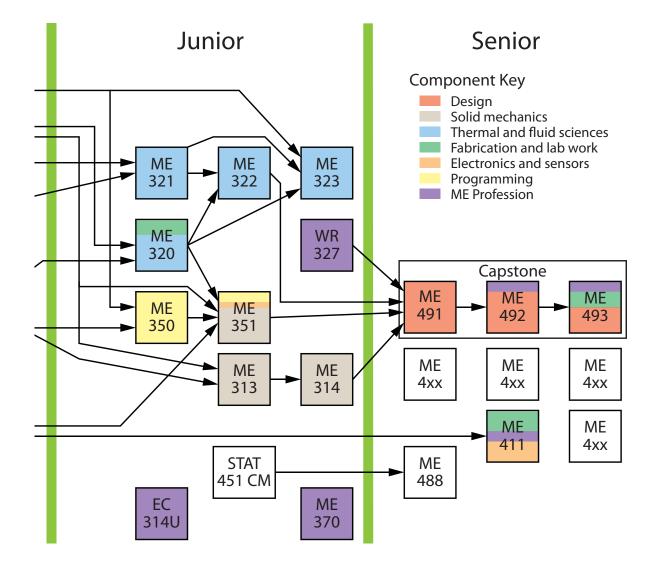
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BSME Prerequisite Map



http://www.pdx.edu/mme/sites/www.pdx.edu.mme/files/BSME_All_Prerequisite_Map_2011.pdf Link at http://pdx.edu/mme/undergraduate-mme

BSME Prerequisite Map



D2L Logistics

- Log on via http://d2l.pdx.edu
- Enter your "odin" credentials
- Select ME 370

Drop box assignments

Include this information

- Your name
- The date
- Department and course number, i.e. "ME 370"
- Short title or tag for the assignment, e.g. "HW 3: Individual Project Proposal"

Drop box Submissions

Submit Files - Group HW1: Career planning

Folder

Group HW1: Career planning

Group Category Homework groups

Group Name Group 1

Due Date Oct 10, 2014 11:59 PM

Submit Files

Files to submit *****

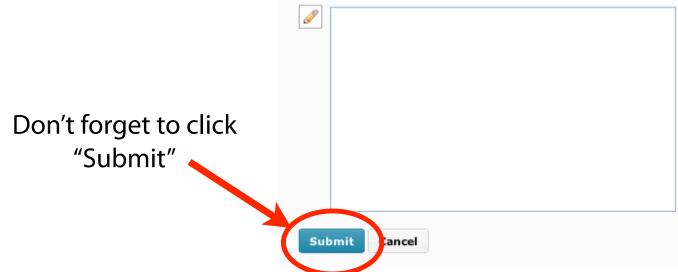
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After uploading, you must click Submit to complete the submission.



a File Record Audio

Comments



ME 370 Topics

Career planning

Business practices

Engineering ethics

Intellectual property

Current issues in technology and society

Sustainability

Career Planning

Upon completing this course you will be able to

- Define "professional" in the context of an engineering career
- List career paths for individuals with a BSME
- Describe your professional strengths and weaknesses
- Describe your professional interests
- Write a 5 year career plan

Values and Expectations

You are all free to chose how to act

- I. We all have personal values
- 2. We (PSU, MME Faculty, society) cannot control what you think or choose to do
 - a. We can inform you of standards
 - b. We can expect to to conform to those standards as a condition of being a student
 - c. We cannot force you to have certain values

Values and Expectations

In this class I expect you to demonstrate knowledge of common standards of behavior

- I. What are those standards? e.g. ASME Code
- 2. What standards are expected of PSU students?
- 3. What behaviors are consistent with those standards?
- 4. What behaviors are personal decisions outside of those standards

Why choose engineering?

- What are the necessary attributes of a good job?
- What are the desirable, but not necessary aspects of a good job?
- Why would you make a distinction between necessary and desirable?
- What are your personal strengths?
- How does engineering match your strengths?

Why worry about nontechnical stuff?

The Engineer of 2020, p. 27

... Both on a macro scale, where the world's natural resources will be stressed by population increases, to the micro scale, where engineers need to work in teams to be effective, consideration of social issues is central to engineering. Political and economic relations between nations and their peoples will impact engineering practice in the future, probably to a greater extent than now. Attention to intellectual property, project management, multilingual influences and cultural diversity, moral/ religious repercussions, global/international impacts, national security, and cost-benefit constraints will continue to drive engineering practice.

The Engineer of 2020:Visions of Engineering in the New Century, 2004, National Academy of Sciences, Washington, DC

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ME 370 Progression of Ideas

Self:

career awareness & planning

Job:

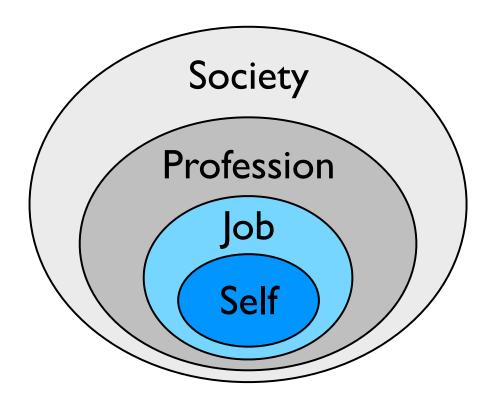
- Business practices, email
- Intellectual property

Profession:

- What is a professional?
- Ethics

Society:

- Economics
- Law
- Politics
- Environment
- Sustainability



What is a professional?