

CEE 4990 (5990) SPECIAL PROBLEMS - ENGINEERING MANAGEMENT

Elective Course

Catalog Description:

Credit 1 to 4 per semester. Maximum 18.

Prerequisite: Approval of Departmental Chairperson. Current topics in the student's area of interest. May not be repeated to improve a grade.

CEE 4990 Engineering Management is offered as a 3-credit course with credits categorized as follows.

Math & Basic Sciences:	0 Credits	Course Coordinator:	Jessica Matson
Engineering Topics:	2 Credits	Contains Significant Design:	No
General Education:	0 Credits	Updated:	02/20/2014
Other:	1 Credits	Specify Type if Other:	Business Management

Text Book(s) and Supplemental Material(s):

Managing Engineering and Technology, 6th edition, by Lucy C. Morse and Daniel L. Babcock, Prentice-Hall/Pearson, 2014.

Course Goal(s):

The goal of this course is to introduce the student to modern engineering management theory applied to technical organizations. Topics include management functions, processes, and theories; engineering techniques and tools for management and leadership; management of projects, operations, and other activities; management/leadership of technical people and teams; and contemporary issues including technological change, globalization, and other topics.

Instructional Outcomes for the Course:

Upon completion of this course, the student will be able to

- Understand the management functions of planning, organizing, motivating, and controlling and be able to apply appropriate engineering techniques for those functions.
- Demonstrate an ability to apply project management techniques.
- Evaluate engineering/management/leadership strengths and weaknesses and develop a strategic plan.
- Demonstrate learning from a source beyond the textbook.

Criterion 3 Student Outcomes addressed by this Course:

- d) An ability to function on multidisciplinary teams (Level 3)
- h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context (Level 2)
- i) A recognition of the need for, and an ability to engage in life-long learning (Level 3)
- j) A knowledge of contemporary issues (Level 2)

Program Criteria addressed by this Course:

- Explain basic concepts in management, business, public policy, and leadership. (Level 2)

Course Topics:

1. Historical development and current status of engineering management (10%)

2. Management functions of planning, organizing, leading (decision-making), and controlling, including engineering tools and techniques for these functions (45%)
3. Engineering project planning and project management (25%)
4. Contemporary issues: technological change, globalization, book reports, and other topics (20%)

Additional Topics/Assignments for dual-level (4000/5000) courses:

CEE 5990: Paper and presentation on current research topic in engineering management