

Department of Engineering Management, College of Engineering

MEM 462 Introduction to Engineering Management

Fall 2006/Spring 2007

Designation: Senior elective

Catalog Description: This course provides a basic understanding of modern management by examining concepts and theories. Emphasis is placed on studying applied management principles to technological based organizations. Topics will focus on functions of management, management philosophies, organization structures and cultures, globalization, strategic management and ethics. Upon successful completion of this course, students should be able to identify and explain the concepts of engineering management and apply them in case situations.

Prerequisites: A Senior level elective, must have at least a 3.0 GPA

Textbook(s) and other required material:

Required: John R. Schermerhorn, *Management*, 8th edition, John Wiley & Sons Publishing Company. ISBN: 0-471-45476-1

Course Objectives:

Provide the student with a realistic view of management applied to engineering and technical organizations

1. Learn about the four functions of management (planning, leading, organizing and controlling)
2. Contrast successful and unsuccessful organizations focusing on compelling reasons and characteristics for success or nonsuccess
3. Enhance students communication skills (verbal and oral)
4. Learn about the issues associated with transitioning from an “engineer” to an engineering manager
5. Learn and apply management principals to technology based organizations (organizations structures, work classifications, ethics, globalization, economy, political and legal environments affecting organizations, etc)

Topics:

1. Classical management approaches versus modern day approaches
2. Ethics and Social Responsibility
3. Environmental Culture and Diversity
4. Globalization Management & Multinational Corporations
5. Small Business Ventures and Entrepreneurship
6. Planning and Controlling Function
7. Strategic Management
8. Organizing Function
9. Information Technology and Management
10. Leading Function and Motivation Theories

Class Schedule: Combination Internet course with Live face to face meetings / class sessions
class meetings (4 per term)

Contribution to Professional Component:

Contributes toward 3 elective credits. Prepares students for work environment and career planning

Relationship to Program Outcomes:

Outcomes a - k	Content	Explanation	Evidence
a. An ability to apply knowledge of mathematics, science and engineering	0	There is very little math associated with this course as it focuses on management principles and theories	N/A
b. An ability to design and conduct experiments as well as to analyze and interpret data	1	Data analysis from the perspective of ambiguity with data and insufficient data to make "on the spot" and timely decisions, etc	Quizzes, Homework assignment (essays)
c. An ability to design a system, component or process to meet desired needs	0	System design is not a requirement of the course	N/A
d. An ability to function on multidisciplinary teams	2	Students work on several group projects that focus on case study and strategic management applied to real life organizations	Group project case study presentation & report
e. An ability to identify, formulate and solve engineering problems	1	The focus is on engineering management type problems in a real world environment / organization	Homework, exams, quizzes
f. An understanding of professional and ethical responsibility	2	This is emphasized as part of the engineer's overall responsibility. There is a specific lecture devoted to this topic	Classroom discussion of ethics applied to organizations and engineers
g. An ability to communicate effectively	2	The course is writing intensive. Written reports and oral presentations are part of the curriculum	Group and Individual project / case study. Homework, exams and reports
h. The broad education necessary to understand the impact of engineering solutions in a global/societal context	1	Focuses is on engineering management principle	Classroom discussion, Individual and group case study
i. A recognition of the need for and ability to engage in lifelong learning	2	Management principles are abstract. Philosophies tend to change over time	Classroom discussion, quizzes, exams and assignments
j. A knowledge of contemporary issues	2	A specific classroom topic focuses on classical management approaches contrast to contemporary views	Classroom discussion, quizzes, exams and assignments
k. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice	1	Focus is on strategic management tools to assess a corporations position in the market place	Group project case study presentation & report

Prepared by:

Richard A Grandrino, November 15, 2006