

Department of Industrial and System Engineering ISEN 411: Engineering Management Techniques

Managing Engineering and Technology is designed to teach engineers, scientists, and other technologists the basic management skills they will need to be effective throughout their careers.

REQUIRED TEXT:

Management of Engineering and Technology – 5th Edition, Lucy C. Morse and Daniel L. Babcock, Prentice-Hall, 2010 ISBN 13 978—0-13-609809-6

General Course Requirements

Prerequisite:

Senior classification in industrial engineering and/or upper division status within an engineering major or permission of the instructor.

Additionally, all students enrolled for this course must have a TAMUE-mail address with the ability to send and receive attached documents, spreadsheets, and other material suitable for electronic transmission. E-mail addresses and log on computer accounts will be established the first class meeting for the local students and all on campus students must have a TAMU authorized e-mail address. Students must ensure that their respective e-mail accounts are maintained and unneeded files purges from the server. Further, your e-mail address should reflect your last name for identification purposes. Nicknames or other names that do not help identify the sender are not accepted. Therefore, please name or rename your on campus e-mail name accordingly. If you maintain an off-campus e-mail, please name or rename that account accordingly.

Computer Accounts

All on campus students must have a computer account with log on ID and individual passwords issued by the Industrial Engineering Department. By accepting and using this account, students are honor bound to abide by the policies and regulations of the Industrial Engineering Department and the Computer and Information Services of Texas A&M University. The sharing and or communication of individual log on Ids and passwords is strictly forbidden and if detected and substantiated, the student(s) so involved will be subject to strict disciplinary action. **If you are a non-ISEN student you go to Z225-A and turn in the form (given to you the first class period) and set up your ISEN account.** You will need an ISEN account to access the course web site that will be communicated to you around the middle of the first week of classes.

Class Attendance and Classroom decorum

Once the roster is stable, a seating chart will be constructed and students will be required to be in place at the same seat during the course of the semester. Class attendance will be taken from the seating chart and excessive absences (2 or more) may result in a reduction of grade. Additionally, with computers in the classroom, students detected using the computers for sending e-mail, surfing the web, etc. during class time will be subject to the following:

First detected event:	Oral warning by the professor
Second detected event:	Oral and written warning (placed in the student's file) and dismissal from that class period.
Third detected event:	Dropped from the class role with a grade of "F" assigned

Please make every effort to come on time as coming in late is disruptive (even more so as we are recording the classroom sessions.)

Cell Phones: Please turn off or put on a vibrate mode

Student interaction is vital in the classroom and questions are encouraged at all times.

Important:

This class is scheduled for one meeting time per week by design. The class sessions will be broken up into 3 50 minute sessions with a 10 minute break between sessions 1 and 2 and 2 and 3. If a student misses a Monday session it is equivalent to missing 3 class days under the normal format. Attendance and participation is most important as a part of the final grade is based upon attendance and participation. As this course is a senior level course and it is most likely that there will be a number of graduating seniors for the current semester combined with students taking interview trips for jobs. Each student should make every effort to not schedule a given Monday for an interview if at all possible as the equivalent of one week of course instruction is missed.

Topical Coverage:

Problem assignments will be made at each Monday session due the following Monday. Note: We reserve the right to make modifications to this schedule based upon unforeseen circumstances and or new and important material.

Part I: Introduction to Engineering Management

Week 1:

- Class organizational issues**
- ISEN computer accounts**
- Define and assign teams**
- The Nature of Management and Engineering Management**
- Text, Chapter 1**

Week 2:

- Text Chapter 2**
- Historical Development of Engineering Management**
- The Engineer becomes a Manager (Handout provided)**

Week 3:

- Chapter 3 – Planning and Forecasting**
- Work Breakdown structures (handout)**
- Forecasting models with Excel and case problem**

Week 4:

- Omit for now chapter 5: If time permits at the end of the course we will go through that chapter and show software called Precision Tree (Excel add-in) and available on the departmental computer system.**
- 5 Chapter 5 – Organizing Issues (Detailed chapter)**
- Classical models and Matrix models**
- Team formation**

Week 5:

- Chapter 6 – Human Aspects of Engineering Management**
- Maslow's theory (handout)**
- Delegation (Manager vs. Leader)**
- Week 6 Examination No1**

Week 7:

- Chapter 7 –Leading Technical Individuals**

What is leadership?
Motivational issues
Leadership principles (handout)

Week 8:

Finish Chapter 7

Start chapter 8 – Controlling
The process of controlling
What and how to control

Week 9:

Finish chapter 8 if needed
Chapter 9 – Managing the R&D efforts
Selecting R&D projects
Creativity issues

Week 10:

Chapter 10 – Managing Engineering Design Efforts
Systems and concurrent engineering
Liability and safety issues: Some on legal issues
Design to cost vs design to performance
Reliability concerns
Week 11: Examination No.2

Week 12:

Critique Exam 2
Chapter 14 – Project Planning
Introduction to Microsoft Project (MSP)
Example case

Week 13:

Chapter 14 – Project Planning with Microsoft Project
Begin Chapter 15
Case relating to MSP

Week 14:

Chapter 15 – Project Organization and Control
Microsoft Project - continued

Grade Determination

Three In class exams 85%
Case and Team assignments: 15%

Note: attitude and attendance will be a factor in the 15% of grade element!

Nightly attendance will be taken once the roster is settled (week 2)

The following points need to be emphasized:

1. It is the student's responsibility to maintain attendance and to turn in any assigned work in on time. Late, incomplete and/or unprofessionally prepared work – not accepted!
2. For each class session, you should make effort to:
 - **Be on time** and observe timed breaks – avoid coming late to class!
 - Be prepared with assignments completed
 - Participate, ask questions...get involved and stay involved!
3. If a student foresees missing class, the instructor should be notified in advance if possible. Missing a major exam can result in serious problems. Every effort should be made to inform the instructor if possible regarding missing a major exam. Suitable documentation must be presented to permit a makeup exam.

4. E-mail accounts should be maintained on a daily basis so that transmitted materials will not be “bounced back” due to insufficient disk space.
5. If the course based WEB site is brought on line and you are issued a password, it is not to be shared with anyone! All materials assigned to the WEB site are the property of Texas A&M University.
6. This is an upper division undergraduate course. As such, a certain level of maturity, self-discipline, and motivation is expected of all students. The student assumes a significant portion of the responsibility for learning and working problems. When problem assignments are posted, it is expected that the student will come to class prepared! Lack of preparation is one of the significant factors in not performing well in a problems oriented course.

Students w/Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services (visit <http://disability.tamu.edu>, call 845-1637, or go to Cain Hall Room B118).

Academic Integrity:

The Aggie Honor Code states that “An Aggie does not lie, cheat, or steal or tolerate those who do.” Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information, please visit: www.tamu.edu/aggiehonor.

PRESENTED BY: Don Smith, P.E.

DATE: August 30, 2010