IE 471-001 Plan for Industrial System design, *Three semester hours*
Fall 2012,
TR 3:30 P.M.-4:45 P.M./AG/IT 118A

**Instructor:**
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Assistant Professor
Department Engineering & Technology

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“Appointment Recommended”

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**COURSE INFORMATION**

**COURSE TEXT**

The Team Handbook, 3rd
Peter R. Scholtes, Brian L. Joiner, Barbara J. Streibel, Oriel Incorporated
ISBN 1-884731-266-0
February 2003

**COURSE REFERENCE TEXT/MATERIALS**


ASSESSMENT OF STUDENT OUTCOMES

Upon satisfactory completion of the course, the student as a industrial system designer will:
1. Recognize the need for and ability to engage in lifelong learning.
2. Demonstrate the role of teaming in an engineering environment.
3. Apply the engineering design process and application of quantitative tools as a foundation for demonstrating the proposed approach is a valid approach for the team’s industrial design project.
4. Be able to define the physical requirements for the proposed design project.
5. Be able to relate system design requirements to specific work structure activity and to prepare a schedule of the proposed personnel requirements in the approach.
6. Develop an overview of principles of system operations.
7. Be able to propose a model system design requirements for project process.
8. Be able to relate the proposed model components to implementable system level components.
9. Be able to layout, prepare and present the proposed system operations in a presentation with visual aids describing the system, final project proposal, highlighting the proposed system solution implementation.
10. Encourage and be exposed to examples and cases of applications dealing with engineering ethics (emphasis of the global influences on this issue)
COURSE REQUIREMENTS

Student teams will seek and develop a real-world industrial design project with an industry sponsor. The teams will prepare a proposal (technical and management sections) to outline the team’s approach and methodology in meeting the sponsor’s project requirements. The proposed improvement activities will be planned as the systems design project for the following spring semester in IE 495, Industrial Systems Design. The proposals prepared during this course will serve as the major deliverable for IE 471. Prerequisite: Senior Classification, IE Majors Only, course must be scheduled in the fall semester prior to the student’s IE 495 enrollment in the final spring semester, and consent of instructor.

COURSE OUTLINE/OVERVIEW

This course is a pre cursor for IE 495 Industrial Systems Design. Each student will be pre-enrolled in the following spring IE 495 and a member of a student team. The objective of the course is for each team develops a real world industrial design project with an industry sponsor. Each IE 471 team prepares a proposal (technical and management sections) to outline the approach and methodology that the team plans to follow in working with industry sponsors on real-world industrial engineering process improvement activities. The proposed improvement activity will be the systems design project planned for the following spring semester IE 495 Industrial Systems Design. The proposal prepared during this class is intended to present: the background for the problem, statement and description of the problem, the approach, the methodology and analytical support of the team’s plans for the execution of the project. The proposal will include a project network schedule with the project work breakdown structure (WBS) and program plan including a quantitative labor cost estimate per team members per WBS task. The proposal will include all project deliverables with due dates. The proposal will outline the project organization with roles and responsibilities of each team member. These roles and responsibilities will be designated as tasks within the overall team project.

There will be three course deliverables for each team. These deliverables are

1. Proposal for the team’s project
2. Presentation of Proposal to client
3. Team Dynamics and Life Learning component---Examinations or Assignments

These deliverables will be the components used for evaluation of the project execution and the student grades for IE 471.

The project subject is typical type of problems that an industrial engineer would encounter during their career. The project team approach is very similar to the approach problems are addressed industry. That is, each team member brings to the team their individual expertise or knowledge that is needed. Their individual contributions may include tasks areas outside their specialty but these tasks are required to be completed by the team.
In this course, the course professor/industrial sponsors will act in advisory roles. In this IE 471 course and the following IE495 course, the professor will not have the answers but he is available for advice and assistance. This will be the situation in industry as well as---if the solutions to these projects are known, then industrial engineers would not be needed.

**COURSE EVALUATION**

The final course grade will be based on the following factors.

Proposed for a Class Project: Students are expected to participate in the locating a industry sponsor and defining the requirements of the project. Then, the teams perform the analysis, concept, planning and the preparation efforts (including: conceptualize, analysis to support the approach, planning, defining the resources for the project and writing/illustrating the proposal for the class project. Each student will be expected to participate in the proposal efforts. Each student will be assigned to a team for the project. Each team will be assigned an engineering problem. The team will be expected to submit a complete proposal for the team designated project.

**Evaluation Factors:**

<table>
<thead>
<tr>
<th>Evaluation Factors</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall Evaluation of Proposal</td>
<td>15%</td>
</tr>
<tr>
<td>2. Analysis to support the proposal approach to meeting the objectives</td>
<td>15%</td>
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<tr>
<td>3. Conceptual approach to the project</td>
<td>15%</td>
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<tr>
<td>4. Assignments and Examination(Teaming, Life Long learning and Engineering Ethics)</td>
<td>30%</td>
</tr>
<tr>
<td>5. Individual student contribution (Professor, Industry Sponsors, Other team members inputs)</td>
<td>25%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Grading Scale:**

A= 90-100%
B= 80-89%
C= 70-79%
D= 60-69%
Fail < 60%

**Note**

All handouts including syllabi, exams, and topic presentation materials are copyrighted. The instructor will keep all exam questions and presentation materials. The student will be allowed to keep their examination submittals. If you desire to make a copy of your presentations, please make it before submitting the presentation materials.
ATTENDANCE POLICY

No assignment will be excused. Late work will receive a deduction in score/grade. Students are expected to attend class and to participate in a manner to facilitate the educational process.

CONDUCT IN CLASSROOM

All students enrolled at the university shall follow the tenets of common decency and acceptable behavior conductive to a positive learning environment. Attendance will be kept and evaluated as part of class participation. The no sounding of cell phones and using a cell phone or text messaging is prohibited in class. No tobacco products, food and drinks are allowed in the classroom. Each student will be expected to sign and turn in the TAMU-Commerce CSEA Academic Honesty Policy.

ACADEMIC DISHONESTY

Efforts made by any student to achieve dishonestly will not be tolerated. Course work that students submit to the instructor is to be their own. Students may discuss course work and other course material with the instructor and/or fellow students (except during tests), but it is inappropriate to have another student do their course work or provide them with any portion of it. If the instructor determines a student has achieved dishonestly on course work, then that student will be assigned a grade of "0" for that entire course work. If the instructor determines a student has committed a second act of academic dishonesty, then that student will be assigned a final grade of "F" for the course and will not be allowed to attend any more class meetings.

University Specific Procedures:

ADA Statement

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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
COURSE OUTLINE / CALENDAR

COURSE MILESTONES SCHEDULE:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Life Long Learning Assignments</td>
<td>To be announced (TBA)</td>
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<tr>
<td>Team Dynamic Assignments</td>
<td>To be announced (TBA)</td>
</tr>
<tr>
<td>Engineering Ethics Assignment</td>
<td>To be announced (TBA)</td>
</tr>
<tr>
<td>Statement of the problem:</td>
<td>October 25, 2012</td>
</tr>
<tr>
<td>Project Proposal</td>
<td>December 6, 2012</td>
</tr>
<tr>
<td>Project Proposal Presentation to Client</td>
<td>To be announced (TBA)</td>
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</tbody>
</table>

SYLLABUS CHANGES: The instructor has made every effort to provide the students with an accurate syllabus. However, situations may arise during the semester resulting in changes in the information provided in this syllabus. If this occurs, the changes will be announced in class. If students miss a class, it is their responsibility to find out if any changes have been made.

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