ISEN 459 Capstone Senior Design Course

The Industrial and Systems Engineering Department at Texas A&M University offers a capstone design course to seniors which provides them with the opportunity to work on an actual industry project. The students enroll in this course after they have completed core industrial and systems engineering courses.

Course Objective: The main objective of the course is to provide an opportunity for students to work on a "real-life" industry problem using the relevant engineering skills they have acquired over the course of their undergraduate program. Other objectives include practicing teamwork and organization, understanding business practices, and combining business and technical aspects in presentations.

Duration: 1 semester (15 weeks)

Team Composition: 3-4 students

Approach: Four to six months prior to the start of the course, the instructor and the industry contact discuss possible problem cases/projects. Often the industry contact comes up with one or more "symptoms" after talking to colleagues in various departments. Typically, these are open-ended industrial and systems engineering problems, which require some analysis to explore the causes.

Students form teams and each team is assigned one of the problems; the teams then meet with the industry contact and arrange for a site visit at the earliest possible date. As the semester progresses, the student teams interact (site visits, conference calls, emails) closely with their industry contact to obtain a better understanding of their assigned problem. Within the first four weeks, the team is expected to formulate a proposal identifying the scope of the project. This proposal must be approved by both the industry contact and the instructor and is considered a "contract" which will be used for evaluation and mentoring purposes. Once the proposal is accepted, the team begins working on the problem while providing timely status reports to the instructor and industry contact.

Mentoring and Evaluation: The instructor interacts with the industry contact on a regular basis and obtains feedback regarding project status and progress. The student team is assigned a faculty advisor, who, along with the instructor, oversees the progress of the project. Additionally, a graduate teaching assistant is responsible for overseeing the weekly progress of all the teams.

Each team is expected to make a mid-semester and end-of-the-semester presentation of their assigned problem, their findings, and their conclusions to the entire class. Industry contacts are encouraged to attend the final presentation and to provide input. A separate final presentation at the company site can be arranged with the student team. At the end of the semester, the teams submit a final report, a copy of which is sent to their company. The final grade is dependent on the project presentations, final report, input from the industry contact, and the weekly progress reports.

Costs & Contacts: A $2,500 donation to the Industrial and Systems Engineering Department to defray project costs. For more information contact: Dr. Justin Yates, 979-845-1506; jtyates@tamu.edu.