The Industrial and Systems Engineering Department (ISEN) Capstone Senior Design Course

The Industrial and Systems Engineering Department at Texas A&M University offers a capstone design course (ISEN 459) to seniors to provide them an opportunity to work on an actual business or industry project. This is the last industrial and systems engineering course students take before graduation.

**Course Objective:** This course’s main objective is to provide students experience working a “real-life” problem using the general and engineering skills they have acquired throughout their undergraduate education. Other objectives include practicing teamwork and organization skills, recognizing applicable standards and constraints, and enhancing their verbal and written communication skills.

**Duration:** 1 semester (15 weeks)

**Team Composition:** 3-5 students (most have 4 students)

**Approach:** Prior to the start of the course, the instructor and the sponsor’s contact discuss project details. Often the sponsor comes up with one or more “symptoms” after talking to colleagues in various departments. Typically, these are open-ended industrial and systems engineering problems that require some analysis to explore the causes and design remedies.

Students are assigned to teams and each team is assigned one of the projects; the teams then contact the project sponsor 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 sponsor to obtain a better understanding of their project. Within the first six weeks, the team is expected to formulate a proposal identifying the project’s scope. This proposal must be approved by both the project sponsor and the instructor and is considered a “contract” that 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 sponsor.

**Mentoring and Evaluation:** An instructor interacts with the sponsor and obtains feedback regarding project status and progress. The student team is assigned a faculty advisor, who, along with the instructor, oversees the project’s progress. Teams can seek another advisor if they have a need for expertise outside the primary advisor’s area.

Each team is expected to make presentations, based on a published schedule) of their project, their progress, and their findings to the class. The course culminates in a poster presentation that sponsors are encouraged to attend. A separate final presentation at the sponsor’s location is possible if student’s schedules allow it. At the end of the semester, the teams submit a final report, a copy of which is sent to their sponsor.

**Costs & Contacts:** A $3,000 donation to the Industrial and Systems Engineering Department is recommended to defray project costs. For more information contact: Jose Vazquez at (979)458-2385 vazquez@tamu.edu or Mark Lawley at (979)458-2368 malawley@tamu.edu.