Spring 2012

EIND 499 – INDUSTRIAL ENGINEERING DESIGN CAPSTONE

Instructor: William Schell, PhD, PE
Office Hours: Roberts Hall 403, MWF 9 – 10 and W 1 – 2
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General Course Information

Website: http://www.coe.montana.edu/ie/faculty/schell/teaching/eind499/

Meeting Location and Time: Roberts Hall 412, MWF 8:00 – 8:50

Description: Senior capstone course. Second course in senior capstone sequence. A comprehensive open-ended team design project emphasizing the use of computers to plan and evaluate facility designs, their location, and materials handling systems. Technical and economic feasibility studies. Oral and written communication emphasized.

Prerequisites: EIND 434 and EIND 442
Corequisite: EIND 458

Etiquette and Attendance: All members of the class are expected to conduct themselves professionally at all times. Key components of professional behavior include arriving on time, engaging in discussions, and not adding distractions to class. Students are expected to attend class and class members are expected to be present when attending, failure to attend class or participate will be reflected in your final grade. MSU Student Conduct Guidelines can be found at www2.montana.edu/policy/studentconduct

Objectives:

1. Take on a substantial, open-ended problem and successfully deliver a well-engineered solution to meet a set of client needs.
2. Integrate tools and concepts from multiple IE arenas, and apply them to a real-world situation.
3. Improve skills in interacting professionally with clients and others.
4. Improve teamwork, interpersonal and formal communication skills.
5. Apply project planning, tracking and control concepts and tools to a live project, and actively manage it.

Grading and Evaluation:

Grades will be based primarily on overall team performance, and secondarily on individual contribution, as follows:

- 15% Individual journal, participation, and team evaluation
- 10% Weekly project management meetings
- 10% Interim deliverables (e.g. Statement of Work)
- 15% Interim presentation and written report
- 10% Design Fair poster and team interview
- 40% Final written report

Individual grades may differ from team grades depending on individual circumstances.

Late Assignments: Assignments must be turned in at the beginning of the class period when it is due (8:00 on the due date). Late assignments will not be accepted.
Assignments and other key information regarding this course will be published to the course website. The course listserv will be utilized for any reminders, and / or to draw student’s attention to any new materials (e.g. corrections) published to the website. Please make sure the email address you regularly use is on the listserv, and check your email frequently. As noted above, the instructor is available outside of published office hours.

Laboratory

The laboratory associated with the course is the Billie O. Ragsdale Production Systems Design Laboratory located in Roberts 415. You have been issued a key to this lab, and will be able to use it for the academic year, subject to the posted laboratory policies.

Course Structure

EIND 499 is taught as an integrated, project-based course. You have been assigned to work on a team to provide a client with an engineered solution to their business or operational problem. Your team will be responsible for all phases of the project, including: understanding client needs, project scoping and definition, data collection, idea generation, engineering analysis, solution development, documentation, client communication, and project management.

Class meetings (generally weekly, on Mondays) will be used to take care of logistics, review project assignments, conduct just-in-time education on pertinent topics, and conduct project management. Attendance is mandatory at all class sessions.

Teams will be required to hold a weekly project management meeting, facilitated by one of the team members on a rotating basis (evenly split between all team members). The team will review progress against plan since the previous meeting, assess the current state of the project, and plan future tasks. The faculty advisor will attend this meeting to judge participation and individual contribution, and offer guidance and suggestions as needed. Attendance of all team members is expected.

Journals

Purchase a blank, 9” x 12” journal with numbered pages from the bookstore (AMPAD #22-157 is recommended, since it lays flat. AMPAD #22-156 is also acceptable. No lab composition books!). In the journal, keep record of all class-related activities and information: class notes, team meeting notes, individual brainstorming, web or library research activity, sketches of design ideas, user interview notes, contact information, analyses, reflections, etc. Journals will be periodically assessed throughout the semester on journal check dates. See the course website for more details.

Key Dates

- Wednesday, January 11 – First Day of Class
- Friday, January 20 – Statement of Work Due (Internal)
- Wednesday, January 25 – Initial Project Plan Due
- Week of March 5 – Interim Project Presentations and Report Due
- Wednesday, April 25 – Design Fair
- Monday, April 30 – Final Report Due by 5:00

Additional details on the course schedule will be provided during the first class meeting.