Spring 2012

TCN 291 Interdisciplinary Capstone Project
3 credits: 1 hour lecture/4 hours laboratory

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Description.
This course provides students the opportunity to apply the concepts, theories, and practices developed throughout their course of study in a one-semester capstone interdisciplinary project. Using a collaborative approach, students from Electrical Engineering Technology (EET), Laser & Fiber Optics Technology (LFOT) and in the Manufacturing Engineering Technology (MFG) will work together in small teams to solve real-world problems related to their interrelated field(s) of study.

Students will investigate key aspects of project development and management including project research, development of design specs, project scheduling using Gantt charts, preliminary design/simulation, component selection, construction considerations, prototype development, design verification & testing, and design improvement and performance monitoring. A major portion of the course will be dedicated to hands-on lab time during which students will work on their projects.

Throughout the course, faculty members will serve as consultants to guide the students and provide formative feedback. Weekly status meetings, designed to emulate weekly staff meetings common in business & industry, will be held to discuss progress on project work and other course-related issues. Presentations will be required to help develop students' written and oral presentation and communication skills. Students will be required to keep a lab notebook to document all work performed on their projects, which will be periodically reviewed by faculty. The course will culminate with a final posterboard presentation to faculty, students and invited industry guests.

Required texts. None, but you must have a bound notebook; see "Required Design Notebook Format"

Attendance: You are expected to attend each session. If you must be absent, you are expected to contact the instructor and any teammates you may be working with. The lab will be open extended hours so you will have time to work on your project. Although the course runs for 5 contact hours per week, you should not be surprised if more time is needed to complete a project.

Choosing a Project
Ideas will be provided, or you may choose a project of your own with instructor approval. You may work in teams of up to three members *however* you will be graded on your own contribution as evidenced by your laboratory notebook and instructor observation. Team members will also be asked to evaluate each other's contributions to the effort using a provided rubric.

Project Requirements.

Each team is required to submit the following works throughout the project:

- Proposal- problem statement, objectives, preliminary budget estimate and plan of action
- Status reports- weekly summary
    - What happened last week?
    - What will happen this week?
    - What are the major obstacles the team is facing and preliminary plans to address them
- Project report- due at the end of the project (early May, date TBD). This comprehensive report details the project's objectives, method, management plan (Gantt chart), results and conclusions. Teams will also submit team member evaluations.
- Poster- a poster session will be held in May for students, faculty and invited industry guests demonstrating the features of your project

Grading method:

- Proposal document 15%
- Status reports 20%
- Notebook 20%
- Final report 20% (includes team evaluation)
- Poster presentation 20%
- Clean up of work space 5%