ENG 573 – Capstone Project

ENG 573 (Electrical and Computer Engineering *Capstone Project*)

Graduate Program Director: Prof. Michael Oelze
Faculty Advisor/Instructor: Prof. Wei He
Academic Advisor: Stacy Walker

ENG 573 (*Capstone Project*) is selected for work carried out in an industry sponsored project on campus. It is characterized by an advisor (or advising team) from the sponsoring company, and a faculty advisor/instructor.

Each student participant must first choose an industry sponsored project, with an advisor (or advising team) from the sponsoring company and a faculty member to provide oversight. The course instructor may be the default faculty advisor. Next, a plan needs to be developed for the scope of the project and agreed upon by the company advisor, faculty advisor, and the student. See Reporting Requirements for further detail. In addition to normal reporting of the work carried out for the project, the ECE Capstone Project should include how experience in the project relates to pertinent course work.

ENG 573 Capstone Project involves component or system-level conceptual design studies, design and build activities, feasibility studies, experimental work, detailed numerical simulations, and detailed theoretical analyses of physical phenomena, related to any aspect of the broad field of electrical and/or computer engineering. We expect students to develop good project management and communication skills. This involves an initial plan/proposal, intermediate progress reports, and occasional oral presentations. Teamwork is also emphasized (e.g., 2-3 people team may be formed for a project). The main output of the project will be a final report that describes in detail what was done, why it was done, what avenues were not pursued and why, and makes appropriate recommendations, and as appropriate, suggestions for further work.

Steps for ENG 573:

- Select an ECE-related project
- Create a plan for the project
- Survey associated literature and state-of-the-art research
- Conduct, as appropriate, system-level or conceptual design studies, design and build activities, feasibility studies, experimental work, detailed numerical simulations, or detailed theoretical analyses of physical phenomena
- Meet the requirements as laid out in the step-by-step checklist (below)
- Always discuss with the program director and coordinator

Checklist for ENG 573:

- A 2-3 page plan that outlines the scope of the project. This should be submitted as soon as the project, advisor (or advising team) from the sponsoring company and the faculty advisor have been identified. When appropriate, the few most pertinent references or reports should be cited.

- A 10-12 page interim progress report. This progress report should further focus the scope beyond what was in the original plan, followed by a review of current understanding including a discussion of relevant literature. It should then describe the progress made, and summarize the remaining work.
- A 25-30 page comprehensive final report. This should include an ABSTRACT, Introduction, Literature Review, Work Done (in appropriate number of chapters), Summary and Conclusions, and suggestions for Future Work. A Bibliography is also an essential part of the final report.
- A 10-minute oral presentation summarizing the project work. Presentation is given the semester practicum is complete (2-3 weeks before end of semester). Presentation includes a PowerPoint, 10-minute presentation, and 5-minute Q/A. Peer evaluations of presentations will be used to assist in the evaluation.

Note that the Plan, Progress Report, and the Final Report may go through a few revisions before they are finalized.

Reports should be submitted by email as both pdf and MS Word file. **Email must be cc-ed to the program director, program coordinator (instructor), and advisor form sponsoring company.**

Time Line:

Fall and Spring semester timeline for the submission of the three required reports:

Plan: 2nd Friday of the semester
Interim Progress Report: 10th Wednesday of the semester
Comprehensive Final Report: 15th Wednesday of the semester

Summer semester timeline for the submission of the three required reports:

Plan: 2nd Friday of the semester
Interim Progress Report: 8th Wednesday of the semester
Comprehensive Final Report: 11th Wednesday of the semester

Projects may span more than one semester on occasion. In these circumstances, a grade of DFR (deferred) is given until the course is completed the following semester. Student must first receive approval from the program director.

If student is not expecting to complete the requirements and not expecting a letter grade in the first semester, the comprehensive final report and oral presentation will be due the following semester when the course is to be completed and the letter grade awarded.

Rubric for Presentation:
Following rubric is used to evaluate class presentations:

Technical quality of the project	/25
Depth of the work carried out	/25
Quality of the presentation/visual aid	/25
Response to questions	/25
Total	/100