Computer Science & Engineering Syllabi   College of Engineering & Computer Science

Fall 2011

CEG 498-01: Team Projects I and II

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CEG 498: Team Projects I and II
Department of Computer Science and Engineering, Wright State University
Fall 2011 (I) and Winter 2012 (II)

Brief Course Description
CEG 498 (Team Projects I and II) is a summative computer engineering design project course that builds upon previous engineering, science, mathematics and communications course work. CEG 498 projects are a minimum of two quarters in length and must be completed in groups of at least three students. Projects are selected under the guidance of the course instructor and are tailored to both student interest and formal classroom preparation. Students are evaluated both on their individual contributions as recorded in a graded engineering journals and on the quality of their collective efforts as reflected in group generated products.

Instructor
John Gallagher
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Textbook
There is no required textbook. The instructor will, however, distribute reference and supplementary materials via Dropbox links and/or a class Wiki. Students are expected to be familiar with those materials and apply them to their projects as appropriate.

Detailed Course Description
CEG 498 is a project-based course. Students will work in groups to complete some significant engineering project of their choosing. In this context, a significant engineering project is defined as a project that applies contemporary technology and methodology to solve a real problem subject to at least two "non-technical" constraints. Acceptable non-technical constraints include performance requirements related to safety, financial, political, regulatory, legal, or ethical considerations. Projects problem statements and scoping of work will be conducted with the assistance of the course instructor, who will provide project ideas and industry and research contacts for groups desiring them. Project management and conduct, however, will be handled by the student groups themselves, who will be encouraged to treat the instructor as a client and/or stake holder in the project's success.

Each student will be formally evaluated based equally on personal effort and group achievement. Each student will receive a grade that is an average of a score given to her/his group's communal products and a score given to the student's individual efforts as measured by entries in a personal engineering notebook. This grading methodology is intended to mimic real life. Your personal success as a design engineer is a function of the quality of your products and of your visible contributions to that quality.

Students will meet with the instructor twice each week. The first meeting will include everyone registered in the course. In those meetings, each group is expected to give a progress report to all students in the class. At these meetings, the instructor will also discuss items of use to all groups and/or provide supplementary materials on engineering practice skills. The second meeting will be by appointment between the instructor and each individual project group. That meeting will serve as each group's formal opportunity to assess internal progress and, if necessary, modify member tasking. The instructor will observe, but not run, these meetings.

In addition to a weekly progress report to all members of the class, each group will be responsible for producing a formally evaluated project presentation at the end of each quarter. Details of the requirements for these presentations, along with other elements (group and individual) that will be formally evaluated will be discussed later in this syllabus.

Note that beginning in 2011, every group will be required to utilize a formal content management system to manage all group documents and source code.

Attendance
Not attending weekly meetings harms the other members of your group and makes it much more difficult for the instructor to assess your individual contributions to the group. Therefore, attendance and active participation in the weekly group meetings is required. Failure to attend a meeting or gross lateness of arrival (more than 15 minutes late) will result in point deductions and will negatively affect your final grade. Since groups will be given wide latitude in

scheduling meeting times (evenings, weekends, etc.), it should be possible to schedule around individual member's commitments. Emergencies, however, do happen. Lateness or absence can be excused if there is a valid reason. The instructor, with the consultation of your engineering group members, reserves the right to determine what constitutes a valid reason.

Course Grades
You will have an opportunity to earn up to 100 points for various activities relating to your project. Letter grades will be assigned based on the following scale:

A	90 points and up
B	89 - 80 points
C	79 - 70 points
D	69 - 60 points
F	59 points and below

Note that more than two unexcused absences from class activities (formal class meetings or individual project group meetings) will result in a failing grade in the class regardless of achieved point score.

Points are earned in three categories. Those categories, and the maximum number of points earnable in each, are:

Individual Performance Grade (50 points maximum)
Points in this category are awarded based on assessments of your personal contributions to the group effort. The instructor will make these assessments based on observations of your participation in group meeting, examination of your engineering journal, and regularity of contribution to your group documents.

Points in the "Individual Performance" Category will be awarded as follows:

Journal Regularity (5 points)	The fraction of weeks in the quarter for which there is a substantive journal entry times 5.
Group Document Regularity (5 points)	The fraction of weeks in the quarter for which there is at least one commit to your group's document repository. See the special notes on the use of a content management system at the end of this syllabus.
Journal Neatness (10 points)	The instructor's evaluation of the journal's clarity, legibility, and organization
Journaled Design Ideas (10 points)	The instructor's evaluation of the quality of code, algorithm descriptions, and any other figures relating to design ideas as recorded in your journal.
Journaled Testing and Critical Review (10 points)	The instructor's evaluation of how well you ensured the merit of your ideas. Did you test? How? Why should anyone believe your ideas are workable?
Meeting Contribution (10 points)	Instructor's subjective evaluation of how much you participated in project group and whole class meeting.

Group Performance Grade (40 points maximum)
Points in this category are awarded based on assessments of documents and products your group collectively authors. The *specific* documents each group will be required to produce are generally a function of the type of project the group selects. Each group will negotiate the manifest of required documents and point values with the instructor early in the first quarter of the project. The results of the negotiation will be recorded and will become a binding part of the syllabus. Typically, the list of documents resembles the following:

Proposal / Requirements (5 points)	This document should explain specifically what you intend to do for your project and which team members will be responsible for what aspects of it. One approved, this document will serve as a "contract" between the instructor and the group. The group's final products will be evaluated against the expectations spelled out in the proposal.
Specification / Design (5 points)	This document should give a specification for the product(s) your group will deliver as well as a high level discussion of the methods and techniques that will be employed. Pay particular attention to describing how your specification fulfills your requirements and how your design satisfies your specification.

Implementation Notes (10 points)	This document should contain "engineer's notes" that would allow a reasonably skilled engineer to understand and modify your group's products. The discussion should be focused and practical.
Users' Manual (10 points)	This document should contain installation and operation instructions for the users of your product(s). It should be aimed at the "average user" and should not require that the reader be an engineering professional.
Testing Plan and Report (10 points)	This document should provide a formalized test plan for your products. How did you ensure they met specifications? What tests did you run and what were the results?

Group Presentation (10 points maximum)

At the end of each quarter, every group will give a formal project progress and/or final presentation that will be open to the university community. Details on how to format that presentation as well as a grading rubric, will be discussed in class meetings.

Special Note Regarding the Use of a Content Management System

Starting in 2011, student groups will be required to employ a formal content management system to manage group documents. In this context, group documents refer to everything your group will produce that is to be assessed under the "group performance" category defined above. Group documents AND source code should be included in your managed repository.

In 2011 – 2012, we will formally support and encourage the use of Subversion (https://subversion.apache.org/). This is the encouraged choice only because, at this time, subversion front ends and IDE integration tools are a bit more available. We will also support Git (http://git-scm.com) for those preferring decentralized content management. In either case, repository space will be provided to support archiving of your work.