CSCE 4910 CMPE Senior Design I

Instructor: David Keathly (with Dr Bill Buckles)  Semester: Fall 2012
Office: NTDP F201J  Time: T/Th 1:00 – 2:20 pm
Office Hours: Wed 12:30 – 2:00 pm  Place: NTDP F260
Phone: 940-565-4801
Email: david.keathly@unt.edu

**Course Catalog Description**

This is the first course in the senior capstone design sequence. Focus is the application of techniques to the design of electronic systems that have digital hardware and software components. Students apply the theory acquired from numerous engineering courses to solve real-world design problems. The design will consider realistic constrains including economic, environmental, sustainability, manufacturability, ethical, social, safety.

**Course Outcomes**

1. Able to gather and refine user functional requirements and other functional and non-functional requirements and constraints for a large scale processor-based system and create a system requirements specification document.

2. Able to perform system analysis and design tasks using recognized software and systems engineering methods to create a preliminary design specification for a system based on a requirements specification.

3. Utilize project management principles, skills and tools in creating the requirements and preliminary design specifications.

4. Able to create a project management plan, including a schedule and budget for a large scale information systems project.

5. Able to create initial test and documentation plans for a project.

6. Utilize configuration management, project management and design tools in the course of a project.
**Textbook:**

*Ford & Coulston, Design for Electrical and Computer Engineers, McGraw Hill*

**Prerequisites**

CSCE 3612, EENG 3510

**Course Requirements:**

Attendance: Optional, although student is responsible for all materials covered in lecture and class discussion
Exams: None
Project: The majority of the assignments in this course will relate to a large group project that will extend into the CSCE 4915 class in the Spring semester
Assignments: There will be a few initial individual assignments and a number of group deliverables throughout the semester

**For More information**

Faculty Webpage: [www.cse.unt.edu/~dkeathly](http://www.cse.unt.edu/~dkeathly)
Class Web Page: [moodle.cse.unt.edu](http://moodle.cse.unt.edu)

**Topics**

- The Nature of Design
- Project management
- Defining System Requirements
- Analysis Modeling
- Preliminary and Detailed design
- Implementation
- The project lifecycle
- Team Planning, Coordination and Survival
- System Testing
- Delivery
- Reliability
- Ethics and Social Responsibility

**Course Calendar** (subject to change)
Since we meet twice per week, a typical week will start with a lecture (for about 45 minutes) and question period on the first class meeting of the week, then a short meeting with your faculty mentor (either Dr Buckles or myself) followed by team meetings and work groups on the second meeting day. Please realize that you will also need more team time beyond this period in class.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Readings, Materials and Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Lecture: Course Overview  Set-up Team Room  Personal Assessment  Lecture: Nature of Design</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 2</td>
<td>Lecture: Team and Project Management  Determine Teams and Team Names  IA -1 presentations  Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 3</td>
<td>Lecture: Project Lifecycle brainstorm project ideas  meet with client</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 4</td>
<td>Project ID and Need  Lecture: Development Methodologies  Lecture: Requirements  Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 5</td>
<td>RUP and Use Cases</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 6</td>
<td>Lecture: Preliminary Design Overview  Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 7</td>
<td>Work Week</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 8</td>
<td>Review Preliminary Design details  Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 9</td>
<td>Work Week</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 10</td>
<td>Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 11</td>
<td>Lecture/Discussion Detailed Design</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 12</td>
<td>Lecture: Testing  Work Week  Bi-weekly status report</td>
<td>see lecture notes on class web page</td>
</tr>
<tr>
<td>Week 13</td>
<td>Lecture: Reliability and Delivery</td>
<td>see lecture notes on class web page</td>
</tr>
</tbody>
</table>
Grading Policy

The various components of your grade are weighted as follows:

- Team Project Deliverables 40%
- Individual Reports, Presentations and Editorships 15%
- Team Presentations 15%
- Peer and Instructor Performance Reviews 30%

Course Policies:

- ABSOLUTELY, NO LATE project assignments will be graded, unless specific arrangements are made with the instructor in advance.
- All assignments will be turned in by midnight on the date due. Assignments may be submitted via the appropriate drop box in Moodle unless otherwise instructed.
- ALL requests for extensions on assignments must be made prior to the due date, in person, and must be for a valid “emergency” reason. In extreme circumstances, contact after the due date may be accepted if there is a COMPELLING reason.
- Attendance is at your option. However, you are responsible for all discussion, lecture and other information disseminated during the lecture period, regardless of whether you attend or not. You are also responsible for all assignments made by your team lead or document editors regardless of whether you attend class and team meetings.
- Lectures and Project assignments are included in this syllabus. However, you should regularly check the class website, as well as take note of in-class announcements for changes in the schedule or assignments.

Collaboration and Cheating:

Collaboration among students in class is most certainly encouraged, as it is my belief that it provides a better learning environment, and required for team assignments. For further details and clarifications regarding collaboration and cheating, view the university Student Rights and Responsibilities web page.

Student Evaluation of Teaching Effectiveness (SETE)
The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.

**ADA:**

UNT complies with all federal and state laws and regulations regarding discrimination including the Americans with Disability Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services please contact the Office of Disability Accommodation.