Prof. Vadhva **CpE 191/EEE 193B** **Fall 2016**

Senior Project II

Objectives of Course:

This course centers on developing hardware and software project planning and engineering design skills. Emphasis is placed on design philosophies, problem definition, project planning and budgeting, written and oral communication skills, working with others in a team arrangement, development of specifications and effective utilization of available resources. The team project will be presented to the CPE faculty and students at a prearranged seminar. 2 units.

Grading:

-Grades will be based on your project documentation, presentation, meeting scheduled milestones, quizzes, plus a qualitative evaluation and team member evaluations.
-Ethics Paper

Grade Proposal

Complete a 1-page proposal for your project letter grade. Requirements as followed,

A Grade - Complete System
B Grade - Enhanced System
C Grade - Minimum System (at least 70% of project complete)
Sign-off section for all team members and instructor.

Each grade level must include:

1. Functionality of hardware block by block, labeled in numerical order.
2. Functionality of software block by block, labeled in numerical order.
   Must demonstrate functionality

Weekly Reports; Due on Mondays 6:00 PM

Project Requirements

1. Project must show intelligence, i.e., CPU, controller, VLSI, complex state machine, etc.
2. Must be 30-50% software.
3. Part of your grade will be based on new ideas and technology.
4. At least 50% original design.

Deliverables by the end of the semester

1. Demonstration of functioning project
2. Testing documentation
3. Documentation binder.
4. Users manual
4. Peer evaluations.

If your project does not work, you don't graduate!

Your project must be at least 80% original design, and 30-50% software.

General Course Information:

Instructor: Prof. Suresh Vadhva
Office: RVR 5022
Email: Vadhva@csus.edu
Office Hours: Tuesdays 12:30 – 1:15 pm and Wednesdays 1:00 – 2:00 pm

Key Dates:

Week 2:	Draft Project Proposal (Sep 7 & 14)
Week 3:	Final Project Proposal & Approval (Sep 21)
Week 4:	Draft WBS & Schedule (Sep 21)
Week 5:	Final WBS & Schedule (Sep 28)
Week 7:	Ethics paper proposal (1 per group) (Oct 5)
Week 8:	Draft Test plans both hardware and software (Oct 19)
Week 9:	Design review. (Oct 26)
Week 9:	Health and Safety. (Oct 26)
Week 10:	Ethics Presentation (Nov 2)
Week 10:	Ethics Paper Due (Nov 2)
Week 11:	Ethics Presentation (Nov 9) cont.
Week 12:	Project inspection. (Nov 16)
Week 14:	EconomicIssues (Nov 30)
Week 14:	Political and Social Issues (Nov 30)
Week 15:	Project Poster Presentations Friday, Dec 9 , Time: TBA
Week 16:	Final Demo (Wednesday Dec 14, starting at 2:00 PM.
Week 16	Documentation complete & Confidential peer review (Due Friday, Dec18),

Projects and Papers are due in the beginning of the class.
Paper 1
Abstract due Oct 5, 2016
Paper submission - Hard copy, email and Turnitin
Paper due date: Nov 2, 2016
Turnitin
Web Link:
https://guides.turnitin.com/01_Manuals_and_Guides/Student/01_Student_QuickStart_Guide

Class ID: 13573023 Password: 3dprinter

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Ownership of Projects:

Non Sponsored Projects:
The entire project (hardware, software, mechanical components and any support devices or software) belongs to the group regardless of individual contributions- moneteray, technical, or donations.
Members who leave the group for any reason, forfeit their rights to the project.
Individual members of the group cannot be sponsors of the project.

Funded Sponsored Projects:
Sponsored projects are the property of the sponsor upon completion
Individual members of the group cannot be sponsors of the project.

GRADE
DEMONSTRATED PERFORMANCE EXPECTATIONS

- Project Completions
- Project Complexity
- Quality of documentation
- Lecture and meeting attendance
- Peer Evaluations
- Project Presentation
- Project Demonstration
- Ethics research Paper and Presentation
- Team members work effectively with one another, sharing the workload and responsibilities.
- The project team is effectively managed by the team's project manager.
- The project team meets at least once weekly to review progress, to update the schedule and work plan. Time on each work assignment is collected, new assignments are made and meeting minutes are kept.
- The project team meets weekly with the their faculty adviser, providing accurate status on work in progress and the team's schedule. Documents are reviewed and discussed, and all changes to the team's work plan and schedule are discussed and should be approved.
- Development work follows the team's management plan, including the team's work plan and schedule.
- The project team implements an effective quality assurance process. For example, all work products are formally reviewed and approved by the group prior to submission to faculty adviser.
- Meetings with project sponsor/users are well-planned and effectively managed with results and follow-up well documented.

- The project sponsor is informed about project status and progress throughout the development of the product..
- Team members work effectively with one another, sharing the workload and responsibilities.

WBS and Project Schedule Requirements (Draft week 3, Final Week 6)

1. List 25-30 hardware & software tasks. 30-50% software tasks.
2. Assign task per team member.
3. List 4-5 demo milestone dates. Remember, demo milestones are worth 60% of your grades.
4. Milestones must be scheduled during the last 12 weeks, and no less than 2 weeks apart.
5. Examples of milestones:
    A. Research complete/design-phase started
    B. Design-phase complete/proto-phase started
    C. Proto-phase complete
    D. Software design complete, etc…
6. We will discuss details of demos within each team.
7. Overview schedule for EEE 193B /CpE-191: list 4-5 major milestones.
8. Must be in Time-Line format with inter-dependencies. Milestone dates & description section listed on front page.
9. Sign-off section includes all team members and instructor.

Documentation Requirements

Indexed documents must include the following:

- Product Proposal both Fall and Spring Semesters
- Project WBS and Schedule including milestones, (Spring and Fall Semesters).
- Funding Proposals submitted
- Task assignment per team member
- User Manual (how to operate your project)
- Design documentation both semesters
- Block diagram & documentation at block level for software, both semesters.
- Block diagram & documentation at block level for hardware, both semesters.
- Software: flowcharts, pseudo-code, and documentation to subroutine level, both semesters.
- Hardware: schematics and documentation to component level, both semesters.
- Mechanical: mechanical drawings and documentation, both semesters.
- Test plan for software
- Test plan for hardware
- Integration plans

Attendance is required.

Poster Requirements: TBA

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Paper Requirements:

Structure:
The paper should meet the requirements outlined below regarding format and content.

Plagiarism:
Plagiarism is a serious offense and can result in severe consequences. Plagiarism is the use of other people's ideas and/or phrasing (phrases, sentences or paragraphs as well as statistics, experimental results, etc.) without giving them credit. It includes doing it on purpose as well as through carelessness. A common occurrence of plagiarism is cutting and pasting material from other sources into your paper without citing a reference at the end of the pasted section. Plagiarism also includes utilizing a paper-writing "service" (online or otherwise), which offers to sell written papers for a fee, or submitting a paper written by someone else (published or otherwise) as your own work. Do not plagiarize other sources in your research paper. If you are not clear about what constitutes plagiarism, please see me or another CSUS faculty member for clarification.

Due to past occurrences of plagiarism, all papers will be required to be submitted in hardcopy and softcopy formats (text portion only, figures and tables need not be submitted in softcopy). A sample of the submitted papers will then be submitted to an Internet site, which compares the text to over 1 million sources and determines the level of plagiarism, if any. If a paper is found to contain plagiarism, the repercussions will range from a minimum of an F on the paper, through a possible F in the class, up to and including possible expulsion from the University.

Proposal (due week 6, Oct 7, 2015)
An initial proposal for the paper will be required. It must be typed. It should contain an abstract, which summarizes the topic of the paper (75-100 words). It should also list references used to develop the proposal (no more than five references should be listed).

Research Paper (due week 10, Nov 2, 2015)

Structure Requirements:

- **Must be submitted in both hardcopy and softcopy formats** (tables and figures are not required to be included in the softcopy).
- 15 pages of text (exclusive of items 1 through 4 and 8 through 11)

- 11 point font
- Double spaced with triple spacing before and after headings
- Standard margins (1.5”Left, 1” Top, Right, Bottom)
- Research must be from reputable sources, e.g. Internet resources are acceptable as long as they are from accredited academic or respected industry sources.

I. Format

1. Cover Page - Title of paper, author abstract (75 to 100 words), course name and number, and date.
2. Table of Contents - Title and page numbers of major headings.
3. List of Tables - Page numbers of tables and table captions.
4. List of Figures - Page numbers of figures and figure captions.
5. Introduction - Give brief introduction into the area of research or topic. Give the reader some idea as to what might be expected in the body of the text. This can also be considered as an extended abstract.
6. Body of the Paper - This is the meat of the topic. Several sections and subsections with various headings should be used as needed.
7. Conclusions - Cite the conclusions one may draw from the work presented.
8. References - Referenced work cited in the text is presented here in the same order called out in the text. Use bracketed numbers (e.g. [2]) to correlate points in the text to the reference that is its source.
9. Bibliography - If additional material is read, but specific sections are not used in the writing of the text, they may be cited in the bibliography.
10. Tables - Tables used in the paper are presented together in the order called out in the paper. Cite source of information.
11. Figures - Figures are handled in the same fashion as tables and may be photocopies of published work or neat drawings. Cite source of information.

II. Typical Errors (Please do not repeat):

1. **Failure to references sources of information in text.**
2. Failure to reference source of data on figures in tables.
3. Typing - Failure to maintain margins (1.5”L, 1” T, R, B), failure to double space text, triple space before and after headings.
4. Grammar, spelling and punctuation errors.
5. Failure to follow format.

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