

## **CS/EE/CpE/Biom 481 - Senior Project – Course Syllabus**

Instructor: Ramana Reddy

Office: ESB 941

Email: Ramana.Reddy@mail.wvu.edu

Class Hours: M: 4:00 PM to 4:50 PM

Mondays – Lectures / Guest Lectures / Class Presentations

Wednesdays – Group Meetings / Meetings with the Instructor (ERB214)

Fridays – Group Meetings

All your project activities should be documented in the RedMine system. All the documents produced (and submitted on Ecampus) must be uploaded to the RedMine system under the “Documents” tab. RedMine can be accessed using your WVU credentials. Link to the RedMine system: <https://redmine.lcseecloud.net>.

### **Lecture Topics**

1. Course Plan; Workplace Assignment; Setting Goals, etc.
2. Five-minute summary of each project - The “elevator Pitch”
3. Engineering Profession (Prof. Nutter)
4. Intellectual Property
5. Workplace Issues
6. Business Development
7. Conflict Resolution
8. Basic Engineering Economics
9. Engineering Ethics (Prof. Woerner)
10. Engineering Ethics (Prof. Reddy)
11. Engineering Ethics Case-Studies (Student Groups)
12. Global Project Management (Prof. Reddy)
13. Preliminary / Mid-term / Final Presentation (Student Groups)
14. Senior Design Expo (12:00 noon to 2:00 PM) – Monday of last week of classes

### **Student Learning Outcomes**

Students are expected to demonstrate the ability to:

1. Carry out a detailed design of a technological artifact (hardware or software). Design includes developing mathematical or other models of an artifact for the purpose of analyzing or simulating expected performance to determine optimal components and predicted performance. (*EE.c/CpE.c*)

2. Design and implement laboratory performance tests to verify subsystem and overall system performance. *(EE.b1/CpE.b1 and EE.b2/CpE.b2)*
3. Troubleshoot hardware and software implementations to detect and identify design and execution errors as well as component failures. *(EE.b1/CpE.b1 and EE.b2/CpE.b2)*
4. Contribute engineering, technician, and management skills in a team setting to bring a design to the stage of being functionally working and fully documented. *(EE.d/CpE.d)*
5. Develop a professional orientation, including being aware of some of the environmental, social, legal, and ethical aspects of the engineering profession; clarifying and articulating career aspirations and accomplishments. *(EE.f/CpE.f)*
6. Learn independently and see the value of continuous learning in order to maintain competency. *(EE.i/CpE.i)*

### **Grading Policy**

The quality of the final prototype and the associated system documentation (Part 1) determine the final group grade. However, significant deficiencies in Part 2 can reduce the final grade.

1. Prototype is functionally complete, well packaged, tested and documented – A
2. Prototype is nearly complete, partially tested and documented – B
3. Prototype is minimally complete – C
4. Prototype is substantially incomplete - D
5. Prototype does not exist – F

Based on the peer report, individual grade may be adjusted upwards or downwards by one letter grade.

#### **Part 1 - Final Prototype & System Documentation**

- a) Prototype Demonstration (80%)
- b) System Manual (20%)

#### **Part2 - Supporting Documents**

- a) Demo Brochure, Poster and Expo (20%)
- b) Project Video (15%)
- c) Ethics Report (15%)
- d) Continuing Education Report (15%)
- e) Final Presentation (20%)
- f) Group Activity Documentation on RedMine (15%)

## **Attendance Policy**

1. Missing six classes or group meetings will result in reduction of one letter grade.
2. Missing seven classes or group meetings will result in reduction of two letter grades
3. Missing more than seven classes or group meetings will result in a grade of F.

**This policy will be strictly enforced except in cases involving physician certified absences due to illness.**

## **Social Justice**

West Virginia University is committed to social justice. The instructors of this course concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin. Any suggestions as to how to further such a positive and open environment will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise us and make appropriate arrangements with Disability Services (293-6700).

### **Academic Integrity Syllabus Statement**

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at <http://www.arc.wvu.edu/admissions/integrity.html>. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me *before* the assignment is due to discuss the matter.

**I may use online tools such as Turnitin to detect plagiarism. If any assignment is deemed plagiarized from any source including from your teammates, as a minimum you will receive a zero for that assignment. If the plagiarism is found to be sufficiently egregious there may be other penalties that may result in a course grade of F.**

### **Miscellaneous**

1. Mentors may schedule regular meetings with each group.
2. Instructor will meet with each group on a scheduled basis (M, W, F) to monitor progress.
3. All documents must be submitted on Ecampus when due, and posted on the RedMine site subsequently.
4. Students should be available to meet with the instructor during any class period.