# Activity Report Larry Wear, May 12, 2009

## Teaching Fall, 2008 TCES 101 Introduction to Engineering I

This was the first class of a new 3-quarter sequence for freshmen engineering students. In the class students were introduced to some fundamental topics of computer engineering, such as analog and digital signals and AC and DC voltage. Several of the classes were devoted to making robots using the Lego Mindstorm kits. Nearly all the students enjoyed this part of the course and had fun with the robot competitions. We gave T-shirts to the winners of the competition. In the last class of the quarter the freshmen were introduced to the seniors who were completing their controls and devices course. The seniors demonstrated the class project they built for the course. My feeling was that the class was quite successful and the freshmen enjoyed it. The evaluations were also good.

#### Winter, 2009

### **TCES 102 Introduction to Engineering II**

In this class we paired the freshmen (called "interns") with seniors (called "project leaders") who were working on their senior projects. At the beginning of the class we had a visitor from the Engineering Education group in Seattle, Dr. Jim Borgford-Parnell, give a lecture on working on team projects. It seemed to help set expectations for the class. In this class most of the work the seniors were trying to complete was preparation for building the projects. Consequently, the freshmen were involved primarily with reviewing various concept, requirements, and design documents. Much of the material in the documents was too technically advanced for the freshmen to understand and they were bored much of the time. The student evaluations for the class were quite low.

This class needs extensive revision before it is taught next Winter. Some suggestions were:

- Introduce a lab component where the seniors help the freshmen learn how to use some of the equipment and software that will be used in the third quarter.
- Have the freshmen help in the preparation of the status reports that are required.
- Give the freshmen a better introduction to what the course will cover.
- Have the seniors give more detailed explanations of what they hope to accomplish with their senior projects.

Most, if not all of these suggestions will be implemented in the next iteration of the class.

### Spring, 2009

### TCES 103 Introduction to Engineering III

During this quarter the interns helped the construct and test their projects. Although the class is not over yet and there are no evaluations available, this class seems to be going well. Two informal surveys of the freshmen have indicated that the interns feel they are part of the project teams and that they are making useful contributions to the teams. The project leaders also feel that having the interns involved has helped make progress on the progress.

#### **TCSS 390G Seminar**

This was actually help class for TCES 330; the TCES course number had not been approved at the start of the quarter so we offered the class under the umbrella of a the TCSS 390 course. This was the first time we offered a help class for any TCES course; the 390 course for TCES courses have been introduced in response to student requests for more help in the core TCES classes. Three of the eleven students taking TCES 330 signed up for the 390 help class and all have attended the class regularly. After the first exam, Dr. Gutmann, who teaches 330, was pleasantly surprised that all of the students, even two of the weaker students did well in the first midterm. Course evaluations in this class will not be statistically meaningful but it will be interesting to see if the students feel the class has been helpful.

### **TCES 330 Advanced Logic Design**

Dr. Bob Gutmann and I team taught this course. He has done all of the lecturing and I have helped with labs. The course is going well and most, if not all of the 11 students in the class will pass. This class is currently taught as 4 hours of lecture and 3 hours of lab. This format requires too much time on the part of the instructors. It is like teaching one and a half classes, not one. Faculty can't be expected to teach six courses with this much contact time.

### **Course Preparation**

I developed a course proposal for TCES 390; the courses are similar the TCES 390 courses but has updated learning objectives. I also developed proposals for TCES 490, 498, and 499; these too are similar to their TCES counterparts. All the course have been approved and are now in the catalog.

### Scholarship

In November, I presented a paper to the Pacific Northwest Section of the ASEE. The paper described the approach being taken in the freshmen engineering sequence, 101, 102, and 103. None of the participants knew of any schools that were taking the approach presented and most were quire interested. The reason for giving the paper was to solicit comments and suggestion for making the class appealing to the freshmen students. A few suggestions were made and many wanted to hear how well the class was received.

Dr. Orlando Baiocchi and I prepared a paper for the **PAEE'2009 - Project Approaches in Engineering Education - Portugal**, "Project-Oriented Courses for Freshmen Engineers." The paper has been accepted but because of the VCAA's refusal to support travel to conferences, the paper may have to be withdrawn.

I presented a seminar on Software Engineering to the TCES 598 research seminar class this quarter. AS a result, I have one student who wants to pursue a master's thesis in the software engineering area. WE are presently looking at ways to apply some software engineering processes to some of the less process oriented development methodologies such as extreme programming.

# Service External

ABET Program Evaluator- no visit this year. ABET has initiated a review of its assessment process with the intention of aligning the terminology used by various accreditation agencies. As a program evaluator, I was asked to review the alignment document and suggest changes. This work was completed this spring.

American Council on Education (ACE)- this organization evaluates educational programs offered by private companies and the military to determine if post-secondary credit should be awarded for courses taught by these organizations. I participated in three reviews the year: army career training was evaluated at Ft. Hood, TX; navy mine warfare courses were evaluated at Ingleside, TX, and army signal corps training was evaluated at Ft. Gordon, GA. As a result of these evaluations service men and women will be able to get college credits for their training in the military.

Provided additional accreditation guidelines and processes to FPT University in Vietnam to help them in their effort of preparing for accreditation.

Several years ago I was part of a large group that reviewed the Software Engineering Body of Knowledge, SWEBOK, document. This document has recently served as the basis for establishing a model curriculum for a master's degree program in software engineering. I served as a reviewer for this model curriculum, **Graduate Software Engineering Reference Curriculum (GSwERC).** 

Reviewer for UW Bothell bachelor's degree in electrical engineering.

Campus representative for American Society for Engineering Education (ASEE)

### UWT

Member of Faculty Affairs Committee. Helped draft course load reduction proposal. Chaired the committee for Spring 2009.

### Program

Undergraduate curriculum committee chair Responsible for scheduling classes for all Institute classes Mentor to junior faculty- Jenny Sheng and Dan Zimmerman Chair of review committee for – Ankur Teredesai Coordinated UWT participation in Internet delivered Electrical Circuits course Developed proposal for minor in energy systems with George Mobus Chair of committee that developed new Mentoring Process Helped get Cisco donation for department Created senior exit survey for computer engineering students Headed up the Institute's assessment efforts Updated hiring process for part-time faculty Graduate Program Coordinator Attachments. None.