ETec474 Course Syllabus

Course: ETec474 – Microcomputer-Based Design

Quarter: Spring 2008 **Credits:** 4

Instructor: Todd Morton **Office:** ET204 **Phone:** 360-650-2918

Email: Todd.Morton@wwu.edu

Office Hours:

Monday	Tuesday	Wednesday	Thursday	Friday
1-2pm	9-11am	1-2pm	9-11am	1-2pm

Course Description: Analysis and design of "smart" microcomputer-based instrument and control systems. Design and implementation of a microcomputer-based system.

Course Comments: This is a project-oriented performance-based course. A microcomputer-based project will be designed and constructed by the student. Class time is used as a project group meeting. Attendance and presentations by the students are required.

Prerequisites: Tech374, ETec471, Senior year (Last Spring quarter before graduation.) Prerequisite courses must be passed with a C- or better.

E-mail List: projects@etec.wwu.edu - Required

Web Services: http://eet.etec.wwu.edu

General Requirements: The project must be a microcomputer-based design. In this course, the projects proposed and specified in ETec471 are implemented. In addition, participation in the class meetings and the course listserv are required. Other requirements include a written and oral hardware design review, a preliminary system-level software review, a code review, a lab notebook, and the final demonstration and documentation.

The project proposed and described in the reviews and documentation package must be a final product. Note that the demonstration consists of a prototype of this final product. Therefore, OEM products such as an EVB board, may be used for demonstrations but not for the reviews and documentation. To use an OEM product in the final product, you must first receive permission from the instructor.

Final Project Proposal and Specifications: The project proposal and specifications must be completed in ETec471. The project grade for this course will be based on the project specifications.

Lab Notebook: During your design process, a lab notebook must be kept. It is a journal of your daily activities involving the project. It must contain:

- A schedule through the end of the quarter, updated weekly
- All preliminary designs sketches and analysis
- Testing data and conclusions,
- Calls or trips to vendors, summaries of discussions with faculty, staff, or fellow students that contain vital information concerning your project.

All pages must be dated. The notebook must be bound and must be legible and written in ink.

Hardware Design Review: Your hardware design must be completed at this point. This means that circuits should be functional and should meet specifications. The design review is made up of an oral review, a written circuit description, and a schematic/parts list package. The material should be directed to your peers with the intent that they understand the detailed function of your design for critical review. After the design review is completed, the schematic is "frozen". I.e. no changes can be made without complete documentation. The instructor will keep the copy of the design review materials that are turned in.

System Software Review: This is a presentation of the preliminary system-level software design. It must include a discussion of the type of kernel that will be used, a module description, a description of all tasks, and dataflow diagram(s) for all inter-task communications.

Code Review: At this point, the software should be completed and ready for review. The review process involves making review materials available to designated students who will be reviewing your code. It also involves performing a detailed review of other student's code. A review summary discussion will be held in class.

Final Demonstration and Documentation: A working prototype of the project must be demonstrated at the end of the quarter. The final documentation, due at the time of the demonstration, includes:

1) Final schematic and parts list package including change forms
2) Lab notebook
3) A PC showing the project website with the final software, the project proposal, the project requirements document, and the system software documentation.

Student Work and Evaluation: The student will be evaluated and graded based on the following list:

Hardware Design Review	~15%*
Final Documentation Package/Demonstration	~15%*
Lab Notebook	~10%
System Software Presentation	~10%*
Code Review	~10%*
Project Completion	~10%
Construction Techniques	~10%
Course Participation	~10%
Team Completion Score	~10%

* These items must be performed on the scheduled date to pass the class.

Project Schedule: