

University of Toledo

Electrical Engineering Technology

Master Syllabus

Course Title: UNIX, C, and Internet

Course Code & Number: EET 3150

Credit Hour Total: 4 Semester Hours

Lecture Contact Hours: 3

Lab Contact Hours: 2

Pre-requisite: EET 2230, Assembly Language

Text: 1. UNIX in a Nutshell, Daniel Gilly, O'Reilly Publishers.
2. Practical C++ Programming, Steve Oualline, O'Reilly Publishers.

Software: UNIX OS, C++ , HTML.

A. Course Description

In this course, students learn how to use the UNIX operating system and program in the C++ language using UNIX workstations in a networked environment. Topics include UNIX concepts and commands, the vi and the EMACS editor, C++ syntax and structures and object oriented programming. The internet portion focuses on HTML, Java Scripts and web development.

B. Related Program Outcomes (a, c, e, f, g, k):

- An understanding of the analytical and laboratory skills associated with electrical engineering technology (**outcome a**), as evidenced by the ability to:
 - Write and debug C++ programs using UNIX workstations.
 - Write and debug HTML code for web based applications.
 - Understand and analyze UNIX command.
 - Write reports for select experiments.
- An ability to conduct, analyze, and interpret experiments concerning UNIX, C++, and HTML programming, as evidenced by (**outcome c**):
 - The ability to write, debug, and analyze programs in C++, and HTML, using UNIX workstations.
 - Written reports for select experiments.
- An ability to function as part of a team, as evidenced by (**outcome e**):
 - Working with other students in a team of 3 to 4 students on a project.

- An ability to identify, analyze and solve technical problems, as evidence by **(outcome f)**:
 - An ability to solve problems on class quizzes, tests, and final examination.
 - An ability to participate in class discussions and solve problems open for discussion during class time.
- An ability to communicate effectively, as evidenced by **(outcome g)**:
 - Oral presentation of project work.
 - Written reports of projects.
- A commitment to quality and continuous improvement as evidenced by **(outcome k)**:
 - The ability to produce high quality project reports.
 - The ability to read technical papers so as to keep abreast of the latest and emerging technologies.
 - The ability to learn from past mistakes made on quizzes and tests and perform better in future, as evidenced by improvement in test scores, etc.

C. Course Objectives:

- To have practical knowledge of the Unix operating system. The students will learn various topics in the area of the Unix OS including the EMACS and the VI editors.
- To have practical knowledge of HTML language. Students will also learn JavaScript and learn how to design and create tables, forms, frames and create high quality web sites using SUN workstations.
- To have practical knowledge of the C++ language and the ability to write complex C++ programs to solve mathematical problems.
- Ability to use UNIX based SUN workstations. Students are expected to submit written reports and software programs for assigned lab exercises.
- Ability to do team projects and submit written reports and give oral presentations. Innovative projects will be encouraged.
- Ability to keep abreast of the latest technology by reading appropriate journal/conference papers and other scientific magazines. Students will be required to cite their readings in their project reports.

D. Course Outline – Major Content Areas

- Unix System Basics
- UNIX System Shell.
- UNIX System Editor.
- UNIX File System.
- UNIX Utilities.
- Text File Utilities.
- Managing Files.
- Advanced Editing.
- Shell Programming.
- Basics of C++ Programming.
- Style.
- Basic Declarations and Expressions.
- Arrays, Qualifiers, and Reading Numbers.
- Decision and Control Statements.
- The Programming Process.
- Bit Operations.
- Simple Classes and Pointers.
- HTML and JavaScript.
- Web Development.

E. Major Laboratory Topics

- UNIX Commands.
- The Vi Editor.
- The EMACS Editor.
- C++ Programs.
- HTML and Java Script Codes.
- Web Development.