

**ECET 445 – New Technology in Computer Systems
Dynamic Data Distribution System Design
(Content Management System Design)
(Class 3, Lab 3, Credit 4)**

Summer 2011

Class: Totally On-Line
Lab: (totally Optional) Thursday 5:30PM - 9:00PM, (POTT 316),
Visit: ecet.calumet.purdue.edu (Class administration site)
ecet445.calumet.purdue.edu (Course work development site)

E-mail for the course: ecet_of@calumet.purdue.edu

COURSE DESCRIPTION FROM 2001-2003 CATALOG DATA

The impact of new technologies on computer hardware and software is studied.
In particular:

TEXTBOOK AND LABORATORY MANUAL

The text books for our course are as follows:

- 1) PHP and MySQL Web development by Welling and Thomson, Fourth Edition Addison-Wesley Pearson Education ISBN NO: 978-672-32916-6
- 2) PHP 6 and MySQL 5 by Larry Ullman, Peachpit Press ISBN NO: 978-0-321-52599-4

Suggestive Reading:

- 1) PHP &MySQL By: Janet Valade, Wiley Publishing Inc. ISBN NO.0-470-04839-5
- 2) PHP, MySQL and Apache. By: Julie C. Meloni, Sams Publishing ISBN NO. 0 – 672 – 32620 – 5
- 3) Core PHP Programming. By: Leon Atkinson, Prentice Hall Publication ISBN 0-13-046346-9
- 4) PHP Tutorial - Learn PHP <http://www.tizag.com/phpT/>
- 5) PHP's home, PHP.net
- 6) PHP / MySQL Tutorial <http://www.tizag.com/mysqlTutorial/>

- 7) Instructor's on-line handouts are also provided to the students to supplement the textbooks for both class material and laboratory exercises.

COURSE INSTRUCTOR:

Omer Farook

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Fax: (219) 989-2898

E-mail: ecet_of@calumet.purdue.edu (for our class)

When appropriate, the course instructor reserves the right to make any change(s) to this syllabus throughout the semester.

PREREQUISITES BY TOPIC

- 1) A through understanding of C++ language constructs. (ECET 110 / ECET210)
- 2) ECET 209

Department of Electrical and Computer Engineering Technology's Program Educational Objectives (PEOs)

Applicable to both Electrical Engineering Technology Programs

1. The graduates of the Associate Degree Program will be engaged in analysis, synthesis and troubleshooting of electrical, electronics and computer systems.

In addition, graduates of the Baccalaureate Degree Program will be engaged in problem solving and applied design of systems.

2. The graduates of the Associate Degree Program will utilize state-of-the-art knowledge and techniques in maintenance, service, sales and marketing of electrical and electronics systems.

In addition, graduates of the Baccalaureate Degree Program will utilize their knowledge in manufacturing and application of these systems.

3. The graduates of the program will be working as effective team members with commanding oral and written communication skills. Throughout their career they would be assuming technical and managerial leadership roles.

The above PEOs describe the career and professional accomplishments that the program is preparing graduates to achieve during the first few years following graduation.

COURSE LEARNING OBJECTIVES

The purpose of this course is to provide the student with the fundamentals of Server Side Programming and Design of customized Distributed Systems with hardware interface. This would involve PHP Programming and integration of MYSQL. Interfacing of data monitoring / sensing / recording hardware. The Real time Dynamic data is delivered through the Dynamic Web Pages.

After successfully completing this course, the student should be able to:

1. Design Server side Software with PHP.
2. Design Dynamic Web pages both as input device for the data and for delivering of the real time dynamic data. Integrate the hardware and software portions of the design.
3. Design interface with MYSQL data base.
4. Build robust Distributed Systems Applications with hardware interface.

A –K ABET / Departmental Outcomes realized: a, b, d, g, h.

Outcome a: The course provides the fundamentals of Server side programming and delivering of real time dynamic data with Customized Web Pages Design.

Outcome b: Students utilize PHP programming environment to do interfacing with Database and data monitoring / sensing / recording hardware.

Outcome d & g: The students write a bi weekly learning report, which includes the lab performance.

Outcome g & h: They also deliver an oral and written presentation of Final System Design.

COURSE TOPICS

1. Installing and configuring PHP (4 hours)
2. The basics of PHP Scripts. (3 hours)
 - Beginning and ending of a block of PHP statements
 - The echo statement and print() function
 - Combining HTML and PHP
 - Adding comments to PHP code
3. Building blocks of PHP (3 hours)
 - Globals and superglobals
 - Data types
 - Operators and expressions
 - Constants

4. Flow control function in PHP (3 hours)
 - The if and if else statement
 - The switch statement
 - Loops
 - Code blocks and Browser output

5. Interfacing of data monitoring / sensing / recording hardware with the system.
LM34/ LM35 temperature sensing transducer will be utilized as the transducer of choice for the course.
(3 hours and then this topic will be utilized several places)

6. Working with functions (3 hours)
 - Calling functions
 - Defining functions
 - Returning values from user defined functions

8. Working with arrays and objects (3 hours)
 - Creating arrays
 - Some array related functions
 - Creating an Object
 - Object inheritance

9. Working with Strings, Dates and Times (3 hours)
 - Investigating String in PHP
 - Manipulating Strings with PHP
 - Using date and Time functions in PHP

10. Working with Forms (3 hours)
 - Creating a Simple Input Form
 - Accessing Form Input with User defined arrays
 - Redirecting the user
 - Sending mail on Form submission
 - Working with Uploads

11. Learning the Database Design Process (3 hours)
 - The ISA Bus
 - The EISA Bus
 - The Peripheral Component Interface (PCI) Bus

12. Learning basic SQL commands (3 hours)
 - The software design of the system in C++
 - The hardware design of the system
 - The application program design for the system

13. Interacting with MYSQL using PHP (3 hours)

14. Basic Projects (12 hours)

- Managing a simple mailing list
- Creating an online address book
- Creating a Discussion Form
- Creating an Online Storefront etc.etc.

TOTAL: **48 hours**

Exams:

8 - Bi-weekly Comprehensive Class – Lab material reports
(To be submitted on regular basis and should be part of student’s portfolio. These reports should be comprehensive and demonstrate the student’s mastery of the subject mater covered)

Examination 1: 1 hour

Examination 2: 1 hour

Final Comprehensive Exam: 2hours

Final Project with on-line presentation and Report

COMPUTER USAGE

PHP Programming and Database design on the server side.

ASSESSMENT MECHANISMS

One or more of the following assessment mechanisms will be used to assess the above course learning objectives:

1. **Position or Research papers** will be used to assess incremental learning and encourage students to keep up with the reading material outside of class material.
2. **Examinations** will be used to assess general knowledge, including understanding or mastery of concepts, essential terminology, high-level methods, basic techniques, and fundamental tools.
3. **In-class and homework exercises** will be used to assess the application of basic concepts and techniques to small, structured problem solving activities.
4. **Laboratory exercises** will be used to assess the hands-on ability of students to independently apply the technologies and problem solving techniques.

5. **A final semester project** can be used to assess the ability of students to integrate course concepts, techniques and technology, to a moderately sized problem-solving situation.

Students are required to maintain a portfolio of their work that would include all the material that is generated by them. They should maintain a soft and hard copy of it. This is to be submitted at the end of the semester for evaluation and would not be returned.

Grading

The following allocation of points will be made:

| | |
|---|------------------------------------|
| Portfolio (Class Reports + Labs + Home work): | 45% |
| Attendance: (Online –Submission) | 5%* |
| {Examination 1, Examination 2, Position or research papers }: | 25% |
| Final Examination /Final Project: | 25% |
| Tentative date for Final: | To be announced during Finals week |

Grades

For the course the following letter grades allocation scheme would be used:

| | |
|---|---------------|
| A | 90% and above |
| B | 80% - 89% |
| C | 70% - 79% |
| D | 60% - 69% |
| F | 59% and below |

*** A student who absents (fails to submit the required work by due date) one self, during the semester two times would automatically be lowered a letter grade.**

If face with any emergency please notify the instructor through the email:
ecet_of@calumet.purdue.edu (for our class)

ACADEMIC INTEGRITY STATEMENT

Ethics are an integral part of being a student and a professional. Academic integrity is the hallmark of this university. Therefore, Purdue University Calumet does not tolerate academic dishonesty in any form. If a student breaches integrity, the student risks sanctions in both the academic and conduct arenas. Academic dishonesty includes, but is not limited to, the unauthorized use of other's intellectual property (plagiarism) and lying to an instructor or other university employee. Such actions will result in a failing grade in the assignment with the strong possibility of course

failure, and the strong possibility of referral to the Office of the Dean of Students for a conduct sanction. (See Purdue University's student handbook.)

**WISH YOU A HAPPY ENJOYABLE FUN-FULL
SEMESTER AND LIFE LONG PURSUIT OF THE
DISCIPLINE OF SYSTEM DESIGN AND
INTEGRATION.**

Date: Monday, June 13, 2011