Pellissippi State Community College
Master Syllabus

WEB DATABASE APPLICATION DEVELOPMENT
CSIT 2465

Class Hours: 3.0
Credit Hours: 4.0
Laboratory Hours: 3.0
Date Revised: December 2011

Instructor:
Office:
Phone:
Email:

Catalog Course Description:

This course is designed for applications programmers and database developers to create interactive Web sites to store and retrieve data. Topics include object-oriented application development, relational table creation and maintenance, data cleansing and validation, data manipulation, forms and reports, queries, stored procedures, optimization, and security. Hands-on training includes design and development of dynamic Web pages using PHP and SQL.

Entry Level Standards:

The student must have an understanding of database concepts including entity-relationship modeling, normalization and relational operations. The student must also have experience applying theoretical principles to database application development. The student must have math, writing, verbal and English language skills at the college entry level. The student should be able to use a standard keyboard and maintain 28 words per minute error-free typing rate.

Prerequisites: CSIT 1810 and one programming course or WEB 2300.

Corequisites: None

Textbook(s) and Other Course Materials:

- Required Textbook: PHP and MySQL, Joel Murach and Ray Harris, Mike Murach & Associates, Inc., 2010 ISBN: 9781890774561 (eBook is available)
- Recommended Textbook: PHP & MySQL Web Development (w/Cd) 4thed, Luke Welling & Laura Thomson, Addison Wesley, 2009 ISBN: 0672329166
- Removable storage device such as a USB flash drive.

I. Week/Unit/Topic Basis:

Week	Topic
1	Review HTML skills needed to build simple Web pages; introduction to web development using PHP; overview of software used for the course; introduction to web form creation
2	Introduction to PHP variables, conditional expressions, iteration, sending & receiving form data; using PHP strings; PHP documentation
3	Review relational database fundamentals; introduction to MySQL and comparison to Oracle SQL; introduction to phpMyAdmin utility
4	Using MySQL to create and access databases; using PHP to access a MySQL DB
5	Overview of the Model-View-Controller (MVC) pattern; using PHP functions; web page redirection

Week	Topic
6	Object-oriented concepts; creating PHP functions; error handling; debugging & testing techniques
7	Midterm exam; application demonstrations & peer reviews
8	Advanced web forms and PHP control structures
9	PHP data types – strings, numbers, dates, arrays
10	Review of relational database design concepts; creating MySQL databases; MySQL DDL and DML statements; selection via aggregation; modifying MySQL data using PHP
11	Working with cookies and sessions; form-based authentication
12	Database administration: privileges and security
13	Using PHP to send email, create and access files, and access images
14	Web Services, AJAX, E-commerce applications
15	Final Exam; application demonstration & peer reviews

II. Course Goals*:

The course will

A. Guide students to understand the criteria used in making a decision about the products selected to create and maintain database-centric applications. (II, IV)
B. Increase the student's ability to recognize the language of data definition, data manipulation, and data validation and its importance. (III)
C. Provide hands-on practice with technologies used to build Web-based, database-centric software applications. (II, IV, V)
D. Emphasize the importance of Web site and database security and administration functions and provide the student with skills required to enforce such security. (II, IV, V)
E. Introduce the student to the PHP scripting language to perform server-side processing. (IV, V)
F. Introduce the student to the MySQL database management system and methods of integrating these databases into a dynamic, commercial Web application. (II, IV, V)
G. Provide opportunities for students to work individually and in teams to design and implement problem solutions. (I, V)

*Roman numerals after course objectives reference goals of the Computer Science and Information Technology program (Career Program Goals and General Education Goals are listed http://www.pstcc.edu/departments/curriculum_and_instruction/syllabi/).

III. Expected Student Learning Outcomes*:

Students will be able to:

1. Explain the conditions under which it is appropriate to use specific Web and database technologies to create database-centric applications. (A)*
2. Recognize and use standard relational database and object-oriented terminology. (B)
3. Design and build non-trivial, real-world, dynamic Web sites that can send data to and retrieve data from databases located on remote servers based on client input or case study research. (C, D, E, F, G)

4. Develop data validation processes and integrate them with Web-based forms. (B, E)
5. Demonstrate effective use of HTML, PHP and MySQL to build dynamic Web pages. (E, F)
6. Apply Web site session security and database object privileges to assign appropriate user access to Web application components. (C, D, E, F)
7. Demonstrate effective use of documentation, tutorials, and on-line resources to learn proper syntax and use of Web-based technologies. (C)
8. Effectively review and analyze the work of their peers as a means of providing constructive feedback and improving their own work. (G)

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedures: 40% of grade
A minimum of two tests will be administered. These may include multiple choice, true/false, matching, short answer, essay questions, and demonstration of coding skill. Tests will cover material discussed in class, assigned reading and research, and skills practiced during assigned labs. Tests may not to be missed without a valid, documented excuse. Each instructor will include details of his/her testing procedures in a syllabus addendum.

B. Laboratory Expectations: 50% of grade
Lab attendance is required unless the student has completed the assignment in advance of the due date. A minimum of 8 labs will be assigned and must be completed and submitted at the designated date and time. Assignments turned in late will receive a deduction from the total points awarded. Because some labs will be done as a group, students are expected to attend lab sessions regularly and effectively communicate with peers. Deliverables from each lab are combined to create integrated prototypes of real world applications specified by a client or researched case study.

C. Field Work: N/A

D. Other Evaluation Methods: 10% of grade
Class participation, online quizzes, research and homework will also comprise a portion of the final grade for the course. Class participation includes elements of a professional work ethic such as regular attendance, arriving on-time, completion of quizzes, and appropriate interaction with peers during group activities.

E. Grading Scale:

93 – 100	A
88 – 92	B+
83 – 87	B
78 – 82	C+
73 – 77	C
65 – 72	D
Below 65	F

V. Policies:

A. Attendance Policy:
Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. (Pellissippi State Online Catalog)

B. Academic Dishonesty:
Plagiarism, cheating and other forms of academic dishonesty are prohibited. A student guilty of academic misconduct, either directly or indirectly through participation or assistance, is immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions that may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course. *(Pellissippi State Online Catalog)*

C. Accommodations for Disabilities:
Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Other Policies:
1. Make-up exams: All exams are required, and make-ups will be allowed only in the rarest of cases. In the event of an emergency, it is the student's responsibility to notify the instructor in a timely manner and initiate the make-up process.
2. It is the student's responsibility to request help from the instructor prior to an assignment's due date.