CLASS HOURS: 3.0  CREDIT HOURS: 4.0
LABORATORY HOURS: 3.0  REvised: fall 09

NOTE: This course is not designed for transfer credit.

CatalOG course description:
A study of database program development for business applications using rapid application
development (RAD) tools. Topics include table creation and maintenance, indexing, data
manipulation, forms, reports, labels, queries, data modules, object-oriented data manipulation
(OODML), and event-driven applications. Web-to-database connectivity will be emphasized.

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 language or department approval

Textbook(s) and Other Materials Basic to the Course:
Required
Textbook: PHP & MySQL Web Development (w/Cd) 4th Ed., by Luke Welling & Laura Thomson,
Addison Wesley, 2009

Removable storage device such as USB flash drive

I. Week/Unit/Topic Basis:

<table>
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<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Review database fundamentals; object-oriented principles; overview of rapid application development (RAD); using HTML to build Web pages</td>
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<td>2</td>
<td>Introduction to PHP—variables, conditional expressions, iteration</td>
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<td>3</td>
<td>PHP arrays, strings, functions</td>
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<td>4</td>
<td>Object-oriented concepts; error handling</td>
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<td>5</td>
<td>Designing databases for Web access</td>
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<td>6</td>
<td>Using MySQL to create and access databases</td>
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II. Course Objectives*:

A. Understand the criteria used in making a decision about the products selected to create and maintain database-centric applications. II III IV VI
B. Recognize the language of data definition and data manipulation and its importance. III V VII XI
C. Develop a Web-based, database-centric software application using object-oriented Rapid Application Development (RAD) tools. I IV V VI VII VIII IX X XI XII
D. Describe the factors involved in the transformation of a conceptual design into a logical database design and into a physical database design. I V XI
E. Describe the importance of the database security and administration functions. I II III VI IX
F. Use a server-side scripting language and a relational database management system to build an interactive website. V, VI, VIII, IX, XI, XII

*Roman numerals after course objectives reference goals of the Computer Science and Information Technology program.

III. Instructional Processes*:

Students will:

1. Use professional tools to produce software components and documentation. Communication, Technological Literacy, Transitional Strategies, Active Learning
2. Create a well-documented, Web hosted database application based on client input or case study research. Communication, Social/Behavioral Sciences, Technological Literacy, Transitional Strategies, Active Learning
3. Participate in a software development team using shared resources. Communication, Social/Behavioral Sciences, Transitional Strategies, Active Learning
4. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. Social/Behavioral Sciences
5. Present a finished product to the class. Communication, Social/Behavioral Sciences, Transitional Strategies, Active Learning
6. Participate in a peer review of database applications. *Technological Literacy, Communication, Social/Behavioral Sciences, Transitional Strategies, Active Learning*

7. Use professionally accepted methods and materials in completion of applications. *Technological Literacy, Social/Behavioral Sciences, Transitional Strategies, Active Learning*

*Strategies and outcomes listed after instructional processes reference TBR’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Recognize and use standard relational database and object-oriented terminology. A,B,D
2. Recognize and perform relational database operations. B, D
3. Create user documentation for application programs. B, C, F
4. Use object-oriented prototyping tools to speed program development. A, F
5. Design and create database forms. A, C, F
6. Design and create reports. A, C, F
7. Implement a graphic user interface (GUI). A, C, F
8. Create event handlers and validation objects. C, F
9. Integrate application component modules into a complex application. A, C, D, E, F

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures: (50 % of grade)

A minimum of two tests shall be given. These may include multiple choice, true/false, matching, short answer, essay questions, and demonstration of coding skill. There will be no make-up tests or quizzes unless prior arrangements are made with the instructor or the student produces documentation for a serious illness or family emergency.

B. Laboratory Expectations: (40 % of grade)

Lab attendance is required. Required lab activities will be assigned each week and must be completed and submitted at the indicated date and time. Assignments turned in late will receive a deduction from the total points awarded.

C. Field Work:

N/A

D. Other Evaluation Methods: (10 % of grade)

Homework and in class group activities will occasionally be assigned to reinforce lecture
topics. Grades on these assignments may, at the instructor’s discretion, include a participation component. A case study integrating all concepts and techniques learned during the semester shall be completed by the end of the semester. Students will be given opportunities to work on components for this case study throughout the semester.

E. Grading Scale:

- 93 – 100% of total pts. A
- 88 – 92% of total pts. B+
- 83 – 87% of total pts. B
- 78 – 82% of total pts. C+
- 73 – 77% of total pts. C
- 65 – 72% of total pts. D
- below 65% F

VI. 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. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.] (Pellissippi State Online Catalog)

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which 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 134 or 126 or by phone: 694-6751(Voice/TTY) or 539-7153. More information is available at www.pstcc.edu/departments/swd/.

D. Other Policies:

**Computer Usage Guidelines:**
College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner.