ORACLE APPLICATION DEVELOPMENT
CSIT 2445

Class Hours: 3.0  Credit Hours: 4.0
Laboratory Hours: 3.0  Revised: Spring 2011

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

An introduction to database application programming using Oracle application development tools. Topics include software development in a multi-tiered environment, PL/SQL programming, design development and integration of application components, with an emphasis on forms and custom reports. Hands-on training includes design and development of event-driven, client-server and Web applications.

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. Previous experience with Oracle and SQL is required. The student must have math, writing, verbal and English language skills at the college entry level and should be able to use a standard computer keyboard with an error-free typing rate of approximately 28 words per minute.

Corequisites:

CSIT 2425 or departmental approval

Textbook(s) and Other Course Materials:

- Removable storage device such as a USB flash drive.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Review of client/server and relational database concepts; review of SQL*Plus; review of SQL data definition and modification commands</td>
</tr>
<tr>
<td>2</td>
<td>Introduction to Oracle Application Development tools and grid computing; form wizards; installation of sample databases</td>
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<tr>
<td>3</td>
<td>PL/SQL code blocks and programming concepts</td>
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</table>
Form wizards; Forms Builder menus, object navigator, and property palette

Custom Forms; Control blocks, LOV Wizard, layout editor, GUI items and controls

Building relations, visual attributes; record groups; alerts; parameter canvases, frames and windows;

Oracle Report Wizard

Report layout objects; multiple block reports; matrix reports

Building integrated database applications; custom menus

Advanced SQL and PL/SQL topics; triggers

Advanced form builder and database administration topics

Application-side triggers; use of built-ins; alternate Oracle form and report creation tools

FINAL EXAM

II. Course Goals*

The course will:

A. Increase student understanding of terminology associated with client-server, muti-tiered, web-based, and object oriented application development. (III)

B. Expand the student’s familiarity with, working knowledge of, and effective use of Oracle application development tools, PL/SQL and Oracle Technology Network resources. (II, IV)

C. Build the skills necessary to create interactive forms and reports that can store and retrieve data from Oracle databases. (IV, V)

D. Increase the student’s familiarity with issues related to data access, security, and database connectivity in a client server or n-tiered environments. (III, VI)

E. Develop the skills necessary to solicit application requirements, design solutions based on those requirements, and rapidly implement appropriate application components based on real world client needs or case study analysis. (I, III, IV, V)

F. 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*

The student will be able to:

1. Use terminology associated with computers, software and database applications in proper context. (A)

2. Demonstrate effective use of documentation, tutorials, on-line resources and trade journals.
3. Demonstrate knowledge and effective use of Oracle application software. (B, C)

4. Apply data access and security concepts to specify and implement object access in database applications. (D, F)

5. Produce code that carries out the commands of a graphical user interface using intermediate to advanced PL/SQL programming constructs. (B, E)

6. Create dynamic Web pages that can access an Oracle database. (B, C, E, F)

7. Demonstrate effective use of Oracle software as a tool for building enterprise solutions. (B, C, D, E, F)

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

IV. Evaluation:

A. Testing Procedures: 50% of grade

A minimum of two tests will be administered. Tests will cover material discussed in class, assigned reading and research, and skills practiced during assigned labs. Tests may not be missed without a valid, documented excuse. Each instructor will include details of his/her testing procedures in a syllabus addendum.

B. Laboratory Expectations: 40% of grade

Lab attendance is required. Approximately 10 computer labs be assigned and must be completed and handed in at the indicated date and time. Assignments turned in late will receive a deduction from the total points awarded. 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 the components of the case study throughout the semester.

C. Field Work:

N/A

D. Other Evaluation Methods: 10% of grade

Class participation, 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, and appropriate interaction with peers during group activities.

E. Grading Scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>93 – 100</td>
<td>A</td>
</tr>
<tr>
<td>88 – 92</td>
<td>B+</td>
</tr>
<tr>
<td>83 – 87</td>
<td>B</td>
</tr>
<tr>
<td>78 – 82</td>
<td>C+</td>
</tr>
<tr>
<td>73 – 77</td>
<td>C</td>
</tr>
<tr>
<td>65 – 72</td>
<td>D</td>
</tr>
<tr>
<td>Below 65</td>
<td>F</td>
</tr>
</tbody>
</table>

V. Policies:

A. Attendance Policy:
Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:
• Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
• Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
• Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
• Taking an exam for another student.
• Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
• Any of the above occurring within the Web or distance learning environment.

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:

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, notification of the instructor must be made in advance.

It is the student's responsibility to request help from the instructor prior to an assignment's due date.