Catalog Course Description:

An introduction to database application programming using Oracle development tools including Oracle Forms, Oracle Reports and advanced PL/SQL procedures. Hands-on training will include design and development of 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.

Prerequisites:

CSIT 1810 or department approval

Corequisites:

CSIT 2425 or departmental approval.

Textbook(s) and Other Course Materials:

Required:

- Supplies: Flash memory stick

Recommended:


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>
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<tr>
<td>2</td>
<td>Introduction to Oracle Developer Suite 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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<tr>
<td>4-5</td>
<td>Form wizards; Forms Builder menus, object navigator, and property palette</td>
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<tr>
<td>5-6</td>
<td>Custom Forms; Control blocks, LOV Wizard, layout editor, GUI items and controls</td>
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<tr>
<td>7</td>
<td>Building relations, visual attributes; record groups; alerts; parameters canvases, frames and windows;</td>
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<tr>
<td>8</td>
<td>Oracle Report Wizard</td>
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<tr>
<td>9-10</td>
<td>Report layout objects; multiple block reports; matrix reports</td>
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<tr>
<td>11</td>
<td>Building integrated database applications; custom menus</td>
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<tr>
<td>12</td>
<td>Advanced SQL and PL/SQL topics; triggers</td>
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<tr>
<td>13</td>
<td>Advanced form builder and database administration topics</td>
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<tr>
<td>14</td>
<td>Application-side triggers; use of built-ins; alternate Oracle form and report creation tools</td>
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<tr>
<td>15</td>
<td>FINAL EXAM</td>
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</table>

II. Course Objectives*:

A. Develop a working understanding of the terminology associated with client-server, three-tiered, web-based, and object oriented application development. III, VII, VIII, IX

B. Become familiar with, develop a working knowledge of, and demonstrate efficient use of: ORACLE Forms and Reports and the other Oracle Developer tools. IV, VI, V, VII, VIII, IX, XII

C. Develop a working Oracle application consisting of a user interface layer, a business logic layer, and a relational database layer. III, IV, VI

D. Create modular prototype database applications that can be run from the Web. III, IV

E. Become familiar with issues related to data access, security, and database connectivity in the client server and n-tiered environments. III, VII, VIII, IX

*Roman numerals after course objectives reference goals of the CSIT program.

III. Instructional Processes*:

Students will:

1. Use professional tools to produce software components and documentation, *Communication, Technological Literacy, Transitional Strategies, Active Learning.*
2. Participate in a team using shared resources. *Communication, Social/Behavioral Sciences, Transitional Strategies, Active Learning*

3. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Social/Behavioral Sciences*.

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

5. Create database forms, reports, and graphics based on client input. *Communication, Social/Behavioral Sciences, Technological Literacy, 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. Use terminology associated with computers, software and database applications products. (A,B,C,D,E,F)

2. Demonstrate an understanding of the use of hardware, firmware and systems terminology. (A,B,C,D,E,F)

3. Demonstrate effective use of various manuals, documentation, tutorials, on-line directives and trade journals. (A,B,C,D)

4. Demonstrate knowledge and use of the Oracle Developer tool set. (A,B,C,D,E)

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

6. Produce code that uses intermediate to advanced SQL queries. (B,D,E)

7. Create dynamic Web pages that can access an Oracle database. (B,D,E)

8. Demonstrate effective use of Oracle as a business tool. (A,B,C,D,E)

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

**V. Evaluation**: 

A. Testing Procedures: 40% of grade

A minimum of two tests or quizzes 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. Each
instruction must include the details of his/her testing procedure in a syllabus addendum.

B. Laboratory Expectations: 50% of grade

Lab attendance is required. Approximately 12 computer lab assignments will be given 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

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.

E. Grading Scale:

Each instructor will explain the point system that he/she uses to arrive at the final grade. Grades will be assigned in accordance with the following 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. (Pellissippi State Online Catalog)