Advanced .NET Programming  
CSIT 2290

Class Hours: 2.0  
Credit Hours: 3.0  
Laboratory Hours: 2.0  
Revised: December, 2014  

Instructor:  
Office:  
Phone:  
Email:  

Catalog Course Description:  
This course is designed for applications programmers and database developers. Hands-on training includes use of the Visual Studio Integrated Development Environment (IDE), the .NET Framework (ASP.NET, ADO.NET, .NET programming), Object-Oriented Programming (OOP), database programming, SQL, and Web Services. Students will develop an application involving a MSSQL Server database with emphasis on object-oriented and component-based approaches.

Entry Level Standards:  
The student must have an understanding of database concepts including data modeling and relational operations. Advanced knowledge of programming fundamentals and graphical user interface design concepts is expected.

Prerequisites:  
CSIT 1810, CSIT 1520 and either CSIT 2610 or CSIT 2630.

Corequisites:  
None

Textbook(s) and Other Course Materials:  
- Required Textbook: Murach's ASP.NET 4.5 Web Programming with C# 2012 by Mary Delamater and Anne Boehm, August 2013  
- Removable storage device such as a USB flash drive.
- Ear buds or headphones

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 Visual Studio and .NET Framework</td>
</tr>
<tr>
<td>2</td>
<td>Windows database applications; MS SQL Server</td>
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<tr>
<td>3</td>
<td>Databases using joined tables</td>
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<tr>
<td>4-5</td>
<td>Modifying database tables (update, insert, delete); ADO .NET</td>
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<tr>
<td>6-8</td>
<td>ASP .NET</td>
</tr>
<tr>
<td>9-10</td>
<td>Web Services</td>
</tr>
<tr>
<td>11-12</td>
<td>Web Applications</td>
</tr>
<tr>
<td>13</td>
<td>Processing XML and JSON data</td>
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<tr>
<td>14</td>
<td>Complete course project and presentation</td>
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<tr>
<td>15</td>
<td>Final Exam</td>
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</tbody>
</table>
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 Windows applications. (I, II, IV, VI)
B. Increase the student’s ability to recognize the language of data definition, data manipulation, and data validation and its importance. (II)
C. Provide hands-on practice with technologies used to build Windows database-centric client and Web 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 ASP scripting language to perform server-side processing. (IV, V)
F. Introduce the student to the SQL Server database management system and methods of integrating these databases into a dynamic, commercial applications. (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/](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 Windows applications. (A)*
2. Recognize and use standard relational database and object-oriented terminology. (B)
3. Design and build non-trivial, real-world, applications and 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 forms. (B, E)
5. Create effective reports. (C, F)
6. Demonstrate effective use of ASP, ADO and SQL Server to build Web-based applications. (E, F)
7. Demonstrate effective use of documentation, tutorials, and on-line resources to learn proper syntax and use of .NET 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: 30% of grade
Lab attendance is required. 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 regularly and effectively communicate with peers.

Field Work: 20% of grade
Knowledge from each lab is combined to create an integrated prototype of a real world application specified by a client or researched case study. Students are expected to work in project teams, with some work being done outside of class time.

C. 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.

D. 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>
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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 Academic Affairs, 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 Academic Affairs.

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. Computer Usage Guidelines:
College-owned or -operated computing resources are provided for use students of Pellissippi State Community College. All students are responsible for the use of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner. It is each individual user's responsibility to abide by the policy available at www.pstcc.edu/ppm/pdf/08-13-05.pdf

D. Accommodation 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 http://www.pstcc.edu/sswd/.

E. 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, notification of the instructor must be made in advance.
2. It is the student's responsibility to request help from the instructor prior to an assignment's due date.