COURSE INFORMATION FORM

DISCIPLINE: Computer Science & Information Systems
COURSE TITLE: .NET Web Programming with C#

CR.HR: 3  LECT HR: 2  LAB HR: 2  CLIN/INTERN HR: 0  CLOCK HR: 0

CATALOG DESCRIPTION

Programming techniques to develop Web-based interfaces for the World-Wide Web or for use within an Intranet environment. Topics include Web interface concepts, event-driven architecture, Web database programming, server-side and client-side scripting, Web site architecture and configuration, E-commerce applications, and security. The course presents these subjects from an Object-Oriented design perspective using the C# programming language in ASP.NET and ADO.NET applications development.

PREREQUISITES

CSIS 223  Object-Oriented Programming  or
CSIS 222  Object-Oriented Programming with Java

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

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

1. Employ the Microsoft Visual Studio Integrated Development Environment to create Web-based applications.
2. Apply C# programming language within the .NET Framework and the ASP.NET platform.
3. Create and manage strings, arrays, collections, and enumerators using the .NET framework library.
4. Use C# language features, including control structures, built-in C# classes and libraries, string formatting, math functions, and input/output streams.
5. Employ server controls, user controls, and custom components to create a Web page user interface.
6. Handle Web page event processing, form data validation, and Web Forms programming using the data event model. Apply state management techniques (view state, cookies, and sessions).
7. Design and implement Web applications that access a database, using ASP.NET, C#, and ADO.NET.
8. Demonstrate a basic knowledge of Structured Query Language (SQL) and its application in stored procedure programming for databases.
9. Deploy Web applications, apply unit testing of components, and use appropriate security techniques.

GENERAL EDUCATION OUTCOMES (ESO)

Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES

Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Use industry-specific software and/or apply troubleshooting skills to solve problems.
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Visual Studio Integrated Development Environment (IDE) for Web development with C#
   A. C# program construction
   B. Web Development features

II. C# Language and Syntax
   A. Decision structures
   B. Repetition structures (loops)
   C. Collections
   D. Classes and objects
   E. Event-driven programming
   F. Exceptions

III. Web page design and use
    A. Page layout (Web Forms programming)
    B. Master Pages and Content Pages
    C. Server controls
    D. User controls
    E. Page program flow (events and the Page Event model)
    F. Page logging and code logging
    G. ASP.NET programming requirements
    H. *Dynamic Web content implemented with Ajax

IV. Database structure and design
    A. Normalization steps
    B. Referential Integrity
    C. Intrinsic data types and basic database table design
    D. Structured Query Language (SQL) essentials
    E. Stored procedure programming and use

V. Database access with ADO.NET

VI. Web applications deployment
    A. Unit testing
    B. Security considerations (including user passwords and encryption)