



COURSE OUTLINE: CSD331 - ADV C# .NET WEB APP

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Approved: Corey Meunier, Chair, Technology and Skilled Trades

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| Course Code: Title | CSD331: ADVANCED C# AND .NET WEB APPLICATIONS |
| Program Number: Name | 2090: COMPUTER PROGRAMMER |
| Department: | COMPUTER STUDIES |
| Semesters/Terms: | 21W |
| Course Description: | <p>This is the second course in C# and introduces Web Application development using the C# and .NET development environment. In addition to building on concepts introduced in the first course, this course will develop skills in the use of various technologies including, databases (ADO.Net), Web development using ASP.Net, Web forms, MVC (Model-View-Controller), Web application deployment, LINQ and other technologies. Develop and publish Web apps to Azure (cloud based services). Use Azure services such MSSQL and MySQL databases to create cloud based database Web Applications.</p> <p>Advanced Object oriented programming techniques will be discussed in this course and build on the concepts developed in another concurrently delivered OOP course.</p> <p>Students will develop Web applications using the Visual Studio IDE supporting Create, Read, Update and Delete (CRUD) operations on a database. This is a lab oriented course with heavy emphasis on databases and Web client and server technologies.</p> |
| Total Credits: | 5 |
| Hours/Week: | 4 |
| Total Hours: | 60 |
| Prerequisites: | CSD207 |
| Corequisites: | There are no co-requisites for this course. |
| Vocational Learning Outcomes (VLO's) addressed in this course: | <p>2090 - COMPUTER PROGRAMMER</p> <p>VLO 1 Identify, analyze, develop, implement, verify and document the requirements for a computing environment.</p> <p>VLO 2 Contribute to the diagnostics, troubleshooting, documenting and monitoring of technical problems using appropriate methodologies and tools.</p> <p>VLO 3 Implement and maintain secure computing environments.</p> <p>VLO 5 Communicate and collaborate with team members and stakeholders to ensure effective working relationships.</p> <p>VLO 6 Select and apply strategies for personal and professional development to enhance work performance.</p> <p>VLO 7 Apply project management principles and tools when working on projects within a computing environment.</p> <p>VLO 10 Contribute to the development, documentation, implementation, maintenance and testing of software systems by using industry standard software development methodologies based on defined specifications and existing technologies/frameworks.</p> |
| Please refer to program web page for a complete listing of program outcomes where applicable. | |

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.



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| | <p>VLO 11 Apply one or more programming paradigms such as, object-oriented, structured or functional programming, and design principles, as well as documented requirements, to the software development process.</p> <p>VLO 12 Model, design, implement, and maintain basic data storage solutions.</p> |
| Essential Employability Skills (EES) addressed in this course: | <p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p> |
| Course Evaluation: | <p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p> |
| Other Course Evaluation & Assessment Requirements: | <p>To successfully pass this course, the student must receive passing grades for both the Test and Evaluation portion of the class and the Laboratory portion.</p> <p>Grade Definition Grade Point Equivalent</p> <p>A+ 90 - 100% 4.00</p> <p>A 80 - 89%</p> <p>B 70 - 79% 3.00</p> <p>C 60 - 69% 2.00</p> <p>D 50 - 59% 1.00</p> <p>F (Fail) 49% and below 0.00</p> <p>CR (Credit) Credit for diploma requirements has been awarded.</p> <p>S Satisfactory achievement in field /clinical placement or non-graded subject area.</p> <p>U Unsatisfactory achievement in field/clinical placement or non-graded subject area.</p> <p>X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.</p> <p>NR Grade not reported to Registrar`s office.</p> <p>W Student has withdrawn from the course without academic penalty.</p> |
| Books and Required Resources: | <p>Beginning C# 7 Programming with Visual Studio 2017 by Benjamin Perkins, Jacob Vibe Hammer and Jon D. Reid Publisher: John Wiley & Sons, Inc., Wrox a Wiley Brand. Edition: 1st Edition</p> |

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Course Outcomes and Learning Objectives:

| Course Outcome 1 | Learning Objectives for Course Outcome 1 |
|---|---|
| Additional C# Techniques | 1.1 The :: Operator and the Global Namespace Qualifier 1.2 Custom Exceptions 1.3 Events 1.4 Attributes 1.5 Initializers 1.6 Type Inference 1.7 Anonymous Types 1.8 Dynamic Lookup 1.9 Advanced Method Parameters 1.10 Lambda Expressions |
| Course Outcome 2 | Learning Objectives for Course Outcome 2 |
| Collections, Comparisons, and Conversions | 2.1 Collections 2.2 Comparisons 2.3 Conversions |
| Course Outcome 3 | Learning Objectives for Course Outcome 3 |
| Generics | 3.1 What Are Generics? 3.2 Using Generics 3.3 Defining Generic Types 3.4 Variance |
| Course Outcome 4 | Learning Objectives for Course Outcome 4 |
| Developing Web Application with ASP.NET | 4.1 Programming for the Web 4.2 Creating ASP.NET Applications 4.3 Web server Controls 4.4 Designing Web Forms 4.5 Application with Multiple Web Pages |
| Course Outcome 5 | Learning Objectives for Course Outcome 5 |
| Developing Database Desktop Applications with ADO.NET (MSSQL, MySQL server) Application | 5.1 Creating ADO.NET Applications 5.2 Data-Bound Controls 5.3 DataGridView Control 5.4 Details view 5.5 Application using TSQL querying a database file 5.6 Application using TSQL querying a Microsoft SQL server 5.7 Application using ANSI SQL querying a MySQL server |
| Course Outcome 6 | Learning Objectives for Course Outcome 6 |
| Developing Database Web Application (MSSQL, MySQL server) Web Application | 6.1 SqlDataSource Control 6.2 GridView control 6.3 Details Control 6.4 Application using TSQL querying a Microsoft SQL server 6.5 Application using ANSI SQL querying a MySQL server |
| Course Outcome 7 | Learning Objectives for Course Outcome 7 |
| Basic Cloud Programming | 7.1 Developing Web Application for Azure 7.2 The Cloud, Cloud Computing |

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| | 7.3 Cloud Patterns and Best Practices 7.4 Using Microsoft Azure C# Libraries 7.5 Developing Database (MSSQL, MySQL server) Application for Azure 7.6 Creating an ASP.NET Web Site |
| Course Outcome 8 | Learning Objectives for Course Outcome 8 |
| Advanced Cloud Programing and Deployment | 8.1 Creating an ASP.NET Web API 8.2 Deploying and Consuming an ASP.NET Web API on Microsoft Azure 8.3 Scaling an ASP.NET Web API on Microsoft Azure |
| Course Outcome 9 | Learning Objectives for Course Outcome 9 |
| Files | 9.1 File Classes for Input and Output 9.2 Streams 9.3 Sequential Access 9.4 Serialization 9.5 Random Access 9.6 Binary files |
| Course Outcome 10 | Learning Objectives for Course Outcome 10 |
| Introduction to LINQ and the List Collection | 10.1 Querying an Array of int values using LINQ 10.2 Querying an Array of Objects using LINQ 10.3 Introduction to Collections 10.4 Querying the generic List collection using LINQ |
| Course Outcome 11 | Learning Objectives for Course Outcome 11 |
| Additional Techniques | 11.1 Windows Communication Foundation 11.2 Universal Apps |

Evaluation Process and Grading System:

| Evaluation Type | Evaluation Weight |
|------------------------------------|-------------------|
| Lab Assignments | 30% |
| Lecture Assignments and Attendance | 10% |
| Quizzes | 10% |
| Theory and Lab Tests | 50% |

Date: July 6, 2020

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.

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