



# COURSE OUTLINE

## CSD331

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<b>Course Code: Title</b>	CSD331: ADVANCED C# AND .NET WEB APPLICATIONS
<b>Program Number: Name</b>	2090: COMPUTER PROGRAMMER
<b>Department:</b>	COMPUTER STUDIES
<b>Semester/Term:</b>	18W
<b>Course Description:</b>	<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>
<b>Total Credits:</b>	5
<b>Hours/Week:</b>	4
<b>Total Hours:</b>	60
<b>Vocational Learning Outcomes (VLO's):</b>  Please refer to program web page for a complete listing of program outcomes where applicable.	<p><b>2090 - COMPUTER PROGRAMMER</b></p> <p>#1. Use documented solutions to troubleshoot problems associated with software installation and customization.</p> <p>#2. Develop, test, document, deploy, and maintain secure program code based on specifications.</p>
<b>Essential Employability Skills (EES):</b>	<p>#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>#2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>#4. Apply a systematic approach to solve problems.</p> <p>#5. Use a variety of thinking skills to anticipate and solve problems.</p> <p>#6. Locate, select, organize, and document information using appropriate technology and</p>

information systems.  
 #7. Analyze, evaluate, and apply relevant information from a variety of sources.  
 #8. Show respect for the diverse opinions, values, belief systems, and contributions of others.  
 #9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.  
 #10. Manage the use of time and other resources to complete projects.  
 #11. Take responsibility for ones own actions, decisions, and consequences.

**Course Evaluation:**

Passing Grade: 50%, D

**Other Course Evaluation & Assessment Requirements:**

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.

Grade  
 Definition Grade Point Equivalent  
 A+ 90 - 100% 4.00  
 A 80 - 89%  
 B 70 - 79% 3.00  
 C 60 - 69% 2.00  
 D 50 - 59% 1.00  
 F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.  
 S Satisfactory achievement in field /clinical placement or non-graded subject area.  
 U Unsatisfactory achievement in field/clinical placement or non-graded subject area.  
 X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.  
 NR Grade not reported to Registrar's office.  
 W Student has withdrawn from the course without academic penalty.

**Evaluation Process and Grading System:**

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

**Books and Required Resources:**

Beginning C# 6 Programming with Visual Studio 2015 by Benjamin Perkins, Jacob Vibe Hammer and Jon D. Reid  
 Publisher: John Wiley & Sons, Inc., Wrox a Wiley Brand.  
 ISBN: 978-1-119-09668-9

**Course Outcomes and Learning Objectives:**

**Course Outcome 1.**

Additional C# Techniques

**Learning Objectives 1.**

The :: Operator and the Global Namespace Qualifier  
 Custom Exceptions  
 Events  
 Attributes  
 Initializers  
 Type Inference

Anonymous Types  
Dynamic Lookup  
Advanced Method Parameters  
Lambda Expressions

## **Course Outcome 2.**

Collections, Comparisons, and Conversions

## **Learning Objectives 2.**

Collections  
Comparisons  
Conversions

## **Course Outcome 3.**

Generics

## **Learning Objectives 3.**

What Are Generics?  
Using Generics  
Defining Generic Types  
Variance

## **Course Outcome 4.**

Developing Web Application with ASP.NET

## **Learning Objectives 4.**

Programming for the Web  
Creating ASP.NET Applications  
Web server Controls  
Designing Web Forms  
Application with Multiple Web Pages

## **Course Outcome 5.**

Developing Database Desktop Applications with ADO.NET (MSSQL, MySQL server)  
Application

## **Learning Objectives 5.**

Creating ADO.NET Applications  
Data-Bound Controls  
DataGridView Control  
Details view

Application using TSQL querying a database file  
Application using TSQL querying a Microsoft SQL server  
Application using ANSI SQL querying a MySQL server

## **Course Outcome 6.**

Developing Database Web Application (MSSQL, MySQL server) Web Application

## **Learning Objectives 6.**

SqlDataSource Control  
GridView control  
Details Control  
Application using TSQL querying a Microsoft SQL server  
Application using ANSI SQL querying a MySQL server

## **Course Outcome 7.**

Basic Cloud Programming

## **Learning Objectives 7.**

Developing Web Application for Azure  
The Cloud, Cloud Computing  
Cloud Patterns and Best Practices  
Using Microsoft Azure C# Libraries  
Developing Database (MSSQL, MySQL server) Application for Azure  
Creating an ASP.NET Web Site

## **Course Outcome 8.**

Advanced Cloud Programming and Deployment

## **Learning Objectives 8.**

Creating an ASP.NET Web API  
Deploying and Consuming an ASP.NET Web API on Microsoft Azure  
Scaling an ASP.NET Web API on Microsoft Azure

## **Course Outcome 9.**

Files

## **Learning Objectives 9.**

File Classes for Input and Output  
Streams  
Sequential Access  
Serialization

Random Access  
Binary files

## **Course Outcome 10.**

Introduction to LINQ and the List Collection

## **Learning Objectives 10.**

Querying an Array of int values using LINQ  
Querying an Array of Objects using LINQ  
Introduction to Collections  
Querying the generic List collection using LINQ

## **Course Outcome 11.**

Additional Techniques

## **Learning Objectives 11.**

Windows Communication Foundation  
Universal Apps

**Date:**

Tuesday, January 2, 2018

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