



Approved by Chair:



Signature

#### COURSE SECTION INFORMATION

Course Title: Web Application Development (.NET)
Program Title: Computer Programming and Analysis

Teacher's Name: Sergio Santilli

Course Code: COMP 2139

Email: Sergio.Santilli@georgebrown.ca

Course Section:

Phone

Academic Year: Fall 2025

Office: C467

Term: Fall 2025

Out of Class Assistance

#### LIST OF TEXTBOOKS AND OTHER TEACHING AIDS:

**Required:**

Murach's ASP.NET Core MVC with C#, 2022 By Mary Delamater and Joel Murach ISBN 978-1-943873-02-9

**Recommended Resources:**

- 1 - MSDN (See help menu in Visual Studio .NET)
- 2 - D2L: <https://adfs.georgebrown.ca/adfs/ls/>

## **Course Delivery Mode**

The course uses various instructional methods, such as lectures, demonstrations, hands-on exercises, and take-home assignments. The delivery mode depends on whether the course is online or in person. Online lectures will be the primary mode, but there may be in-person lectures for in-person participants. Labs will be conducted virtually for the online program, while in-person program students must attend on-campus labs. For more information about the delivery mode, please refer to D2L. Any updates will be communicated through D2L in advance.

## **Assignment Policy**

- Students are responsible for keeping a back-up copy of each assignment submitted.
- All assignments submitted should adhere to the documentation standards distributed by the professor.
- All assignments must be submitted on the due date based on an instruction given by the professor. Late assignment will be penalized 20% per day to a maximum of 5 days, the weekend included unless the student has notified the professor (via e-mail, phone or in person) ahead of the due date that he/she has a valid reason for late submission.
- Submitting optional assignments after the due date will receive zero marks.

## **Test Policy**

- A score of zero will be recorded for a missed assignment or examination unless the student presents the professor with official substantiation of the absence the first day she or he returns to class.
- Students are responsible for reading the appropriate material before classes so that they may benefit from their practical activities and examples.

## **In-Person Exam Policy**

Mid-term and Final exams for the T177 program will be conducted in person. Please note the following exam schedule:

- Mid-Term Exams: Week 7 of the semester
- Final Exams: Week 15 of the semester

Students are expected to be available in person during these exam periods.

## **Important Note on the Use of Generative AI:**

Students must review the "Generative AI Usage Guidelines" document, available on D2L, for detailed instructions on how generative AI tools may be used in this course. The course evaluation table now includes a column labelled "AI Usage Allowed," indicating whether AI use is permitted for each assessment.

Yes: AI can be used with proper referencing.

No: AI cannot be used, and any usage will be considered plagiarism and subject to academic penalties.

**Misuse of AI** in assessments where it is not permitted or failure to adequately disclose its use will be treated as a violation of academic integrity. According to college policy, consequences may include failing the assignment or the course or more severe disciplinary actions. **Students must also download the AI Usage Declaration form from D2L, complete it, and submit it with their assignments where AI use is permitted.** Adherence to these guidelines is mandatory to maintain academic integrity.

#### Detailed Evaluation System

Assessment Tool:	Description:	Outcome(s) assessed:	EES assessed:	Date / Week:	% of Final Grade:
In-Class Exercises	In-Class Exercise covering weekly lab session content	1,2,3,4	1,2,3,4,5	3 Total	20
Assignment 1	Create a web application that implements proper user interface based on provided specification. It should also provide proper input validation and exception handling mechanisms.	1, 2, 3, 4	1, 2, 3, 4, 5	~Week 6	15
Assignment 2	Create a web application that implements proper user interface based on provided specification. The application will contain state management and database connectivity. It should also provide proper input validation and exception handling mechanisms.	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 10,11	~Week 13	15
Mid-Term Exam	Mixed format exam that can include MC and short answer question exam covering week 1 to 7.	1, 2, 3, 4	1, 2, 3, 4, 5, 6, 10, 11	Week 9	25
Final Exam	Mixed format exam that can include MC and short answer question exam covering the entire course content.	5, 6, 7, 8, 9	1, 2, 3, 4, 5,6, 10, 11	Week 15	25
<b>TOTAL:</b>					<b>100%</b>

**Learning Schedule / Topical Outline (subject to change with notification)**

**TOPICAL OUTLINE:**

Week	Topic/ Task	Outcome(s)	Content / Activities	Resources
1	1	1	Introduction to web programming with ASP.NET Core <ul style="list-style-type: none"> <li>• Course Introduction / Expectations</li> <li>• Evolution of Web Development Technologies</li> <li>• .NET Core vs .NET Framework</li> <li>• Understanding ASP.NET Core</li> <li>• Overview of MVC Architecture</li> </ul>	Chapter 1
2	2	1	Deep Dive into MVC Architecture <ul style="list-style-type: none"> <li>• Introduction to MVC Architecture</li> <li>• Components of MVC</li> <li>• MVC Workflow and Cycles</li> <li>• Separation of Concerns</li> <li>• Advanced MVC Concepts</li> </ul>	Chapter 4 Lecture Notes
3	3	1, 2	Advanced Models and Data Access <ul style="list-style-type: none"> <li>• Advanced Concepts in Models</li> <li>• Entity Framework Core</li> <li>• LINQ (Language-Integrated-Query)</li> <li>• Data Modeling Techniques</li> <li>• Data Access Patterns</li> <li>• Handling Data Migrations</li> <li>• Performance Considerations</li> </ul>	Chapter 2, 4, Chapter 5 Lecture Notes
4	4	1,2	Controllers and Routing <ul style="list-style-type: none"> <li>• Role of Controllers in MVC</li> <li>• Action Methods in Controllers</li> <li>• Routing in MVC</li> <li>• Advanced Routing Techniques</li> <li>• Attribute Routing</li> <li>• Passing Data to Views</li> <li>• Best Practices in Controller Design</li> </ul>	Chapter 6
5	5	1, 3, 4	How to work with Razor views <ul style="list-style-type: none"> <li>• In Depth Look at Razor View Engine</li> <li>• Mastering Razor Syntax</li> <li>• Working with Partial Views</li> <li>• Utilizing View Components</li> <li>• Layouts, Sections, and RenderBody</li> <li>• Data Binding in Views</li> <li>• Advanced View Techniques</li> <li>• Best Practices</li> </ul>	Chapter 7
6	6	1, 2, 3, 5	Form Handling, Model Binding, and Data Validation <ul style="list-style-type: none"> <li>• Advanced Form Handling in ASP.NET</li> <li>• Understanding Model Binding</li> <li>• Implementing Custom Model Binders</li> <li>• Client-Side Validation</li> <li>• Server-Side Validation</li> <li>• Model State</li> <li>• Best Practices</li> </ul>	Chapter 8

7	<b>** Midterm Week **</b>						
8	<b>Intersession Week</b>						
9	7	4, 5, 6	Authentication and Authorization <ul style="list-style-type: none"> <li>• Understanding Authentication and Authorization</li> <li>• Introduction ASP.NET Core Identity</li> <li>• Implementing Authentication</li> <li>• Implementing Authorization</li> <li>• Customizing ASP.NET Core Identity</li> <li>• Security Best Practices</li> </ul>		Chapter 16 Lecture Notes		
10	8	4, 5, 6	Advanced MVC Concepts I <ul style="list-style-type: none"> <li>• Overview of Filters</li> <li>• Dependency Injection (DI) in ASP.NET Core</li> <li>• Custom Middleware in ASP.NET Core</li> <li>• Leveraging DI for clean architecture</li> <li>• Middleware for Cross-Cutting Concerns</li> </ul>		Lecture notes		
11	9	5, 6, 7	Advanced MVC Concepts II <ul style="list-style-type: none"> <li>• Globalization and Localization</li> <li>• Advanced Routing</li> <li>• Error Handling in MVC</li> <li>• Robust Error Handling Strategies</li> </ul>		Lecture notes		
12	10	5,6,7	Unit Testing and Best Practices in ASP.NET Core MVC <ul style="list-style-type: none"> <li>• Introduction to Unit Testing</li> <li>• Writing Unit Tests for MVC Applications</li> <li>• Test-Driven Development (TDD) Approach</li> <li>• Best Practices for Unit Testing</li> <li>• MVC Best Practices</li> <li>• Code Quality and Maintenance</li> <li>• Advanced Testing Scenarios</li> </ul>		Chapter 14		
13	11	5,6,7	Microservices with ASP.NET Core <ul style="list-style-type: none"> <li>• Introduction to Microservices Architecture</li> <li>• Characteristics of Microservices</li> <li>• Designing Microservices</li> <li>• Creating Microservices with ASP.NET Core</li> <li>• Inter-service Communication</li> <li>• Database Management in Microservices</li> <li>• Microservices Security</li> </ul>		Lecture Notes		
14	11	5,6,7	Real-time Applications with SignalR <ul style="list-style-type: none"> <li>• Introduction to SignalR</li> <li>• Core concepts of SignalR</li> <li>• Setting Up SignalR in ASP.NET Core</li> <li>• Building a simple real-time chat application</li> <li>• Advanced Features of SignalR</li> <li>• Real-time Data Streaming</li> <li>• Best Practices</li> </ul>		Lecture Notes		
15	<b>*** Final Exam ***</b>						
For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: <a href="http://www.georgebrown.ca/Admin/Registr/PSCal.aspx">http://www.georgebrown.ca/Admin/Registr/PSCal.aspx</a>							

Policy on Academic Dishonesty:

The *minimal* consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material.

To view George Brown College policies please go to [www.georgebrown.ca/policies](http://www.georgebrown.ca/policies)