

Course Title	<b>ADVANCED WEB PROGRAMMING</b>
Course Code	<b>CSC 407</b>
Course Purpose and Objectives	The purpose of this course is to introduce students to one of the most effective and widely used technology stacks, Microsoft ASP.NET for creating interactive, professional-grade, database-driven web applications. The students receive expert knowledge in the client-server model, the .NET Framework and Core, the ASP.NET, C# and Ajax programming languages, and, the Visual Studio integrated development environment for developing Advanced Web Programming applications. The course is an advanced extension of the Object-Oriented Programming and Web Programming modules, thus, students are also using principles, such as JavaScript and SQL, that were previously taught.
Learning Outcomes	<ol style="list-style-type: none"> <li>1. Build cross-platform web programming applications for Windows, macOS, Linux, iOS, and Android.</li> <li>2. Explore application development with C# and .NET Core.</li> <li>3. Explore ASP.NET Core to create professional web applications.</li> <li>4. Use object-oriented programming and C# multitasking.</li> <li>5. Query and manipulate data using LINQ.</li> <li>6. Use Entity Framework Core and work with relational databases</li> <li>7. Read a database schema, programme in the SQL language, utilize data binding, perform single- and multiple-row database table maintenance, and write code behind database operations.</li> <li>8. Generate email messages, make use of basic Ajax controls and the Ajax Control Toolkit, and program in the JavaScript language.</li> <li>9. Discover Windows web programming development using the Universal Windows Platform and XAML.</li> <li>10. Build mobile web programming applications for iOS and Android using Xamarin.</li> </ol>
Course Content	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• C#</li> <li>• Types, Objects, and Namespaces</li> <li>• Web Form Fundamentals</li> <li>• Error Handling, Logging, and Tracing</li> <li>• Data Controls</li> <li>• XML</li> <li>• Security Fundamentals</li> <li>• Object-Relational Mapping (ORM)</li> <li>• ASP.NET AJAX</li> <li>• Language Integrated Queries (LINQ)</li> <li>• Multitasking</li> <li>• Advanced Web Programming</li> <li>• Laboratory Work</li> </ul>