CSIS-786: DEVELOPING ASP.NET WEB APPLICATIONS

Effective Term
Fall 2026

BOT Approval Date
06/12/2025

Discipline
CSIS - Computer Sci/Info Systems
Course Number
786

Course Title
Developing ASP.NET Web Applications

Short Title
Developing ASP.NET Web Apps

Credit Status (CB 04)
D - Credit - Degree applicable

Units

Lecture Units
3.00

Total Units
3.00

Hours

Lecture Contact Hours
48-54
Out of Class Hours Lecture
96-108

Total Contact Hours
48 - 54

Total Out of Class Hours
96 - 108

Total Student Learning Hours
144 - 162

Distance Education
Yes

Distance Education

Distance Education Type
Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:
a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods: • Orientation - Students must be oriented to the online and face-to-face portions at the start of the course. • Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc. • Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction. • MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students. • Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS. • Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course introduces scholars to server-side technologies used in Web application development. Using the C# programming language and the Microsoft ASP.NET framework, scholars will learn to build dynamic Web-based applications. Topics include Web forms, user controls, server controls, navigation, input validation, ASP.NET AJAX, jQuery, and database integration.

Requisites

Recommended Preparation

Recommended Preparation (note that students can enroll in the class even if they haven't take the recommended course)
CSIS-115A.

Codes

TOP Code (CB 03)

0707.10* - *Computer Programming

CIP Code

11.0801 - Web Page, Digital/Multimedia and Information Resources Design.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Computer Information Systems	End

Learning Objectives

Learning Objectives

Learning Objective
1. Assess the role of the Microsoft .NET Framework to ASP.NET web development.
2. Compose a web form using ASP.NET server controls.

3. Validate user input using the ASP.NET validation controls.
4. Design and implement an ASP.NET user control which applies ethical considerations in authentication..
5. Construct data queries using the built-in data access tools available in Visual Studio .NET.
6. Evaluate the use of Microsoft ADO.NET to access data in an ASP.NET Web application.
7. Evaluate the use of Extensible Markup Language (XML) to write data to a DataSet.
8. Compose an ASP.NET web program that demonstrates how to store and retrieve application and session state data.
9. Develop and deploy an ASP.NET Web application on a remote server.
10. Develop a server-side web page using C# and the .NET framework which incorporates inclusive design principles like algorithmic bias avoidance as specified in ARIA standards.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome
1. Students will demonstrate form layout and data validation using ASP.NET server controls.
2. Students will demonstrate data access and data binding techniques using ADO.NET.
3. Students will demonstrate the proper usage of session and application state data.

Content

Course Lecture Content

1. Overview of the Microsoft .NET Framework
    a. Introduction to the .NET Framework
        i. Overview of ASP.NET
2. Building Accessible and Inclusive Web Applications
    a. Real-World Case Studies
        i. Localization and Globalization
    b. Inclusive Design Principles Including ARIA
    c. Bias in Algorithms and Data
    d. Ethical Considerations in Authentication
3. Creating a Microsoft ASP.NET Web Form
    a. Creating Web Forms Using Server Controls
    b. Adding C# Code to a Microsoft ASP.NET Web Form
        i. Using Code-Behind Pages
        ii. Adding Event Procedures to Web Server Controls
    c. Using Page Events to Validate User Input
        i. Overview of User Input Validation
            1. Using Validation Controls Page Validation
    d. Creating User Controls
        i. Adding User Controls to an ASP.NET Web Form
4. Creating User Controls Accessing Relational Data Using Microsoft Visual Studio .NET
    a. Creating a Connection to the Database Displaying a Dataset in a List-Bound Control
    b. Connecting to a Database
        i. Paging and Selection in a DataGrid
        ii. Control Accessing Data with Microsoft ADO.NET using C#.
        iii. Introduction to Using ADO.NET
        iv. Connecting to a Database
            1. Accessing Data with DataSets
    c. Using Multiple Tables
        i. Accessing Data with DataReaders
    d. Reading and Writing XML Data
        i. Overview of XML
            1. Architecture in ASP.NET XML and the Dataset Object
            2. Working with XML Data Using the XML Web Server Control
5. Managing State management

a. Application and Session Variables
    i. Cookies and Cookie-less Sessions
6. Configuring, Optimizing, and Deploying a Microsoft ASP.NET Web Application
    a. Configuring an ASP.NET Web Application
    b. Using the Cache Object
        i. Using ASP.NET Output Caching
    c. Deploying an ASP.NET Web Application

Methods of Instruction

Method

Discussion

Integration

Weekly discussion will be conducted as a means to compare and contrast ASP.NET validation controls, ASP.NET server controls, and data access in ASP.NET web applications. Accessible discussions topics will include Building Accessible and Inclusive Web Applications, Real-World Case Studies, Localization and Globalization, Inclusive Design Principles Including ARIA, Bias in Algorithms and Data, Ethical Considerations in Authentication

DE Adaptations for MOI

Discussion will be administered using the accessible discussion tool supplied as part of the CMS.

Method

Homework

Integration

Weekly homework will be provided via accessible methods to guide students through the practical application of concepts such as: validation of user input using the ASP.NET validation controls, the use of Microsoft ADO.NET to access data in an ASP.NET Web application, the use of Extensible Markup Language (XML) to write data to a DataSet, and development of an ASP.NET Web application on a remote server.

DE Adaptations for MOI

Homework assignments will be delivered and collected using the accessible assignments tool of the CMS.

Method

Lecture

Integration

Lectures will introduce conceptual and practical skills such as assessing the role of the Microsoft .NET Framework to ASP.NET web development, composition of a web form using ASP.NET server controls, constructing data queries using the built-in data access tools available in Visual Studio .NET, and development of server side web page using the C# programming languages. Lectures will be provided to students using accessible videos, slide presentations, lecture notes, sample code examples, and web-based multimedia.

DE Adaptations for MOI

Lectures will be delivered using the accessible methods listed above via the CMS pages application organized into logical modules.

Method

Observation and Demonstration

Integration

Observation and demonstration will illustrate lecture principles and reading assignments with a focus on composition a web form using ASP.NET server controls, validation of user input using the ASP.NET validation controls, construction of data queries using the built-in data access tools, and the use of Extensible Markup Language (XML) to write data to a DataSet.

DE Adaptations for MOI

Observation and demonstrations will be accomplished by using audio/video capture technologies that will permit instructor demonstrations to be captured and deployed in an accessible manner via the course CMS. Hands-on activities can be similarly accommodated and supplemented with the use of accessible software simulations posted to the course CMS.

Methods of Evaluation

Method

Projects

Integration

Accessible discussion and guided practice assignments consisting of ASP.NET web programming problems like building accessible and inclusive Web applications, including localization and globalization, ARIA, bias in algorithms and data, ethical considerations in authentication, validation of user input using the ASP.NET validation controls, design and implementation of ASP.NET user controls, and the construction of data queries using the built-in data access tools available in Visual Studio and ASP.NET.
Discussion and guided practice assignments will be evaluated based on completeness, correctness, how well directions were followed, and documentation of code. Feedback will be provided within one week of the assignment due date.

DE Adaptations for MOE

Discussion and guided practice MOE will be provided via scoring rubrics based on completeness, correctness, how well instructions were followed, and documentation of code posted in the course CMS discussions and assignment apps. Accessibility requirements will be met.

Method

Exams/Tests

Integration

Weekly exams composed of short answer and multiple-choice questions will be administered and submitted using the course accessible CMS Quizzes app. The exams will be designed to evaluate the mastery of such topics as the validation of user input using the ASP.NET validation controls, construction of data queries using the built-in data access tools available in Visual Studio .NET, and the deployment of an ASP.NET Web application on a remote server. Exams will be evaluated based on correctness. Feedback will provide immediately to the student once the exam/test is completed..

DE Adaptations for MOE

Exams/Tests will be administered and submitted using the course accessible CMS Quizzes app. The CMS exam/test app will provide immediate feedback to the student once the exam/test is completed. Accessibility requirements will be met.

Method

Homework

Integration

Weekly accessible homework assignments will be given that apply important concepts and skills to the student’s experience outside the classroom. Homework assignments will consist of the creation of three to ten written web pages and corresponding code behind pages with an emphasis on the construction of data queries using the built-in data access tools available in Visual Studio .NET, design and implementation an ASP.NET user control, evaluation of the use of Microsoft ADO.NET to access data in an ASP.NET Web application, and the deployment of ASP.NET Web applications on an accessible remote server. Homework will be graded based on how well directions are followed, compiling without error, and running to completion with proper input and output. Students will receive accessible feedback within one week of assignment submission.

DE Adaptations for MOE

Student will publish their completed work to the student Web server and then post the correct URL using the course CMS Assignments app. Once URL is posted the instructor will load the URL in their Web browser and evaluate the students work based on a scoring rubric and post the student's score to the CMS Assignment app within one week of the assignment being submitted. Accessibility requirements will be met.

Assignments

Assignment Type

Reading

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Formative

Assignment

Read the accessibly provided case study titled "Accessibility of Web Interfaces" and analyze existing web applications to evaluate their inclusivity and accessibility, and discuss how ASP.NET could address their shortcomings.
You will be graded based on the provided scoring rubric within one week of the assignment's due date.

How assignment will be adapted in online format

Students will access the case study on the CMS and post their analysis in a discussion forum on the CMS dedicated to the assignment. Student will be graded based on the provided scoring rubric within one week of the assignment's due date. Accessibility requirements will be met.

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Formative

Assignment

Using the accessible lecture materials provided, examine how to build inclusive authentication flows that account for diverse user needs, such as non-binary gender options, accessibility in CAPTCHA, or multifactor authentication methods. Then write about what you have learned in the Ethical Considerations in Authentication discussion forum. You will be graded based on the provided scoring rubric within one week of the assignments due date.

How assignment will be adapted in online format

Using the accessible CMS, students will view the lecture materials and post in written form what they have learned to the discussion forum dedicated to the assignment. Students will be graded based on the provided scoring rubric within one week of the assignments due date. Accessibility requirements will be met.

Assignment Type

Writing

In-class and/or outside of class

In-class
Outside of class

Formative or Summative

Summative

Assignment

After reading the Accessibility tutorial, build a Web form which incorporates form validation following the specified requirements posted with the assignment. You will be graded based on how well your web application meets the provided scoring rubric within one week of the assignments due date.

How assignment will be adapted in online format

The Accessibility instructional tutorial will be posted using the Pages app of the course CMS. Once students have completed building the Web form components, they will publish their Web form to a designated Web server. Students will then post the corresponding URL using the course CMS Assignments app to allow the instructor to access the Web form for scoring based on the provided scoring rubric within one week of the assignment due date. Accessibility requirements will be met.

Course Materials

Textbooks

Peres, Ricardo (2017). Mastering ASP.NET Core 2.0: MVC patterns, configuration, routing, deployment, and more Packt Publishing. ISBN: 978-1787283688

Class Size Information

Class Size

30

Class Size Category

E - Extensive writing 28

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion are infused throughout the course to create opportunities for students to develop new skills while acknowledging and honoring their existing knowledge base. All of the instructional materials are based on diverse and inclusive culturally relevant real world situations. In addition, the learning objectives have been updated to emphasize student awareness to diversity and inclusiveness opportunities when writing server-side code and the output it generates. Assignments focus on creating cultural aware forms and functions like incorporating the toLocaleString() function to dynamically display dates and time in culturally relevant formats. Additionally, how to use regular expression in a culturally relevant manner when evaluating user input in Web forms. Assessment evaluations identify any specific student mistakes and allows them to repost the assignment to achieve a higher score.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course instruction, evaluations, content and interactions are designed to empower people of all cultures, genders, and sexes. Every student is encouraged to improve their assignment and quiz scores if they were not perfect in their first effort by by allowing them to continue taking a quiz or submitting an assignment and by individually identifying for them what the errors are and how to fix them.

Interactions

Explain how the course will incorporate student-to-student interaction.

Use of accessible CMS discussion forums for online courses and in-class discussions for face-to-face classes covering the topics the scholars are learning at the time. For example asking the students to discuss with each other how ASP.NET can be used to enhance the user experience of a Web site in a diverse and inclusive manner and having them share ways they can think of to provide more culturally relevant user experiences in their development projects, or asking students to discuss with each other what difficulties they are having with various ASP.NET constructs, or asking them to discuss the quiz questions that they don't understand.

Explain how the course will incorporate instructor-to-student interaction.

Office hours online and face-to-face. In-class discussions for face-to-face classes, CMS discussion forums for online classes including a Help discussion forum. Email will be used to make the instructor as accessible as possible to their students in both face-to-face and online classes. This also has the effect of making students feel more confident about getting support from their instructor. Recorded accessible videos and live demonstrations will be used to show students to correctly write and use the coding concepts they are learning in the class.

Explain how the course will incorporate student-to-content interaction.

Students will complete step-by-step tutorials which explain and demonstrate concepts and techniques for writing server-side coding used in creating a complete web application user experience. In addition, students will be building their own Web development projects using these concepts and techniques as they are learning to help reinforce the neural pathways developed during the learning process.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Scholars will be provided with self-evaluation exercises where they are asked to think about their applications of various learning methods like repetition, elaboration, memorization, coding practice for building muscle memory, building self-designed projects, etc., their personal study habits, their use of self-discipline to accomplish task in the class are just some examples of the prompts that will be used. Students will post responses to these exercises in a personal journal that they will add to throughout the class.

Key: 1095