COURSE OUTLINE

Course Number  IST 244  
Course Title  Web Application Development  
Credits  4

Lecture hours  3  
Laboratory hours  2  
Pre-requisite:  IST 108, IST 109, IST 144, COS 101, COS 102, or DMA 145 or equivalent

Implementation  Spring 2019

Catalog description:

Introduction to server-side programming and database integration contributes to the creation of dynamic and interactive Web applications. Primary programming languages and technologies covered include ASP.NET, C#, SQL Server, and MVC (Models, Views and Controllers) programming model.

Is course New, Revised, or Modified? Revised.

Required texts/other materials:

Reference Division Booklist

Revision date:  Spring 2019  
Course coordinator:  Meimei Gao, X3483, gaom@mccc.edu

Information resources:

Textbooks
W3 School Website - http://www.w3schools.com
Microsoft official ASP.NET Website - http://www.asp.net/get-started/websites

Other learning resources:  LMS e.g. BLACKBOARD
Course Goals:

The student will be able to:

1. Describe Visual Studio (VS) IDE, ASP.NET framework, WebPage, WebForm and MVC. (GE Goal 4, MCCC CS Goals D and E)
2. Install, configure and use VS development environment. (GE Goal 4, MCCC CS Goals D and E)
3. Design web UI by using WebPage HTML, WebForm controls and MVC views programming technology. (GE Goal 4, MCCC CS Goal B)
4. Develop software solutions by using programming skills including WebPage Razor, WebForm Server Code, database integration and MVC models. (GE Goal 4, MCCC CS Goal B)

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals
Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

MCCC Core Skills
Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.
Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.
Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Units of study in detail.

Unit I Introduction to Visual Studio Development Environment
Learning Objectives
The student will be able to…
• Describe and install VS IDE [CG 1&2]
• Describe the components of VS development environment [CG2]
• Use VS development environment [CG2]
• Create and run a simple ASP.NET C# web application in VS [CG2]

Unit II Introduction to ASP.NET
Learning Objectives
The student will be able to…
• Describe Class ASP, ASP.NET [CG1]
• Describe ASP.NET programming languages and development tools [CG1]
• Describe ASP.NET Razor and ASP.NET Server Technologies [CG1]
• Create and run small programs by using the above concepts in VS [CG3]

Unit III ASP.NET WebPage
Learning Objectives
The student will be able to…
• Describe ASP.NET WebPage. [CG1]
• Describe the components of WebPage. [CG2]
• Describe ASP.NET Razor Syntax and Components. [CG1]
• Use WebPage Razor, Layout, Forms, Objects, Databases, WebGrid, Email, etc. [CG2]
• Create and run websites by using ASP.NET WebPage features. [CG 3&4]
Unit IV  Introduction to ASP.NET WebForm

Learning Objectives

The student will be able to…

• Describe ASP.NET WebForm [CG1]
• Describe Controls, Events, Forms, Data Binding, Master Pages, etc. [CG1]
• Use Controls like TextBox, Button, DropDownList, GridView etc. [CG3]
• Use Data Structure like ViewState, ArrayList, Hashtable, DataList and Data Binding, DbConnection. [CG3]
• Use Event Model to responding user activities. [CG3]
• Create and run web applications by using the above technologies [CG 3&4]

Unit V  ASP.NET MVC

Learning Objectives

The student will be able to…

• Describe MVC Programming Model – Models, Views and Controllers. [CG1]
• Describe the difference between Web Form and MVC. [CG1]
• Create MVC Controllers with Application Folders and Layout. [CG3]
• Create MVC Views with HTML, Forms or Razor. [CG3]
• Create MVC Models with Database Models and Controllers. [CG3]
• Create and run web application by using MVC technology. [CG 3&4]

Evaluation of student learning:

Achievement of the course objectives can be evaluated through the use of the following tools:

- Labs and homework assessing students’ problem solving ability and programming skills. (CG 2, 3, 4 & 5)
- Tests assessing students’ comprehension of programming environments and concepts. (CG 1, 3, 4, & 5)
- A term project to assess the students’ ability to solve relatively complex problems using formal programming language. (CG 2, 3, 4 & 5)

Specific methods for evaluating student progress through the course are up to the discretion of the instructor. Below is an example of grade breakdown:

<table>
<thead>
<tr>
<th>The final grade is based on the following values:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Tests</td>
<td>30%</td>
</tr>
<tr>
<td>Laboratory &amp; Project Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>A Term Project</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Academic Integrity Statement:

As per the student handbook, “A student will be guilty of violating academic integrity if he/she (a) knowingly represents the work of others as his/her own, (b) uses or obtains unauthorized assistance in the execution of academic work, or (c) gives fraudulent assistance to another student.” Students should read the Academic Integrity policy in the MCCC Rights and Responsibilities Student Handbook. Academic Dishonesty will result in failure of this course.