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| **Course Number** | CS 296N | **Instructor** | Brian Bird |
| **CRN** | 32547 | **E-mail** | [birdb@lanecc.edu](mailto:birdb@lanecc.edu) |
| **Classroom** | Building 19, Room 120 | **Office** | Building 19, Room 152 |
| **Credits** | 4 | **Office Phone** | 541-463-3024 |
| **Day & Time** | T, Th, 10:00 – 11:50 | **Office Hours**  **Lab Hours** | M, W: 2:00 - 3:00 Lab: Tu, Th: 2:30 – 4:30 |

**Course Description**

This course continues coverage of server-side programming in C# using the ASP.NET framework. You will learn the concepts underlying the MVC (Model View Controller) design pattern and learn to use the Microsoft ASP.NET Core MVC framework with Entity Framework and SQL Server.  Learning activities will include guided tutorial exercises as well as lab assignments in which you will design and program web apps on your own.

**Learning Outcome**

To be able to design and program a web site that uses the ASP.NET Core MVC framework for a moderately complex web application.

**Course Content**

***Technologies***

|  |  |  |
| --- | --- | --- |
| ASP.NET | Visual Studio | ASP.NET Core MVC |
| C# | DotNet Core | Razor |
| LINQ | xUnit | Entity Framework |

***Themes and Issues***

|  |  |  |
| --- | --- | --- |
| Software engineering | Architectural Design Patterns | Test-driven development |
| Web standards | Extensibility | Object oriented programming |
| Separation of concerns | Avoiding dependencies | Data driven web applications |

***Skills***

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| --- |
| Use Visual Studio to develop and publish ASP.NET Core MVC web sites. |
| Effectively use software development tools like a unit test framework |
| Design, implement, test and debug a web application |
| Design and manage an SQL Server database that is used by an MVC web application |

**Learning Resources**

***Textbook***

*Pro ASP.NET Core MVC 2*, 7th Edition, by Adam Freeman, Apress, 2017 ISBN: 978-1-4842-3149-4

is the textbook for the course. The source code for the sample programs in the text is available for download on GitHub: <https://github.com/apress/pro-asp.net-core-mvc-2>

***Software***

The hardware and software required for the course are available to all students in the CIT Main Lab on campus.  You paid a fee when you registered for this course that provides you with unlimited access to CIT lab facilities.

Visual Studio 2017 will be the development environment provided in class and in the CIT Main Lab.  This software can be obtained free of charge through your LCC Microsoft Imagine account (formerly Microsoft Dream Spark), <http://e5.onthehub.com/WebStore/Welcome.aspx?vsro=8&ws=EC37AD18-ED9B-E011-969D-0030487D8897>. You can download it or borrow the setup DVD from the CIT computer lab.

You may alternatively use Visual Studio 2017 Community edition which is a free download from Microsoft at [www.visualstudio.com/en-us/products/visual-studio-community-vs](http://www.visualstudio.com/en-us/products/visual-studio-community-vs).

***Web Sites***

<https://classes.lanecc.edu> will give you access to the Moodle site for the course.

You will be deploying web apps that you create to the Microsoft Azure cloud. You are entitled to a free Azure account through LCC’s Microsoft Imagine subscription as described here: <https://azure.microsoft.com/en-us/offers/ms-azr-0144p>

**Assessment and Grading**

Specific grading criteria will be applied to each of the labs, quizzes, and exams you will be working on in this class. Part of the lab involves peer evaluation. You will be provided with lab evaluation worksheets for each lab. Attendance is not graded.

The table below summarizes the grade distribution for each of the assessment tasks:

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| --- | --- | --- | --- |
| ***Assessment Activities*** | ***Points for each*** | ***Total Points*** | ***Total Percentage*** |
| 8 Labs | 50 | 400 | 40% |
| 8 Code Reviews | 10 | 80 | 8% |
| ~~Midterm and Final Exams~~ | ~~100/150~~ | ~~250~~ | ~~25%~~ |
| Term Project | 420 | 420 | 42% |

Letter grades for the course will be determined by the following percentages:

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***-*** |  | ***+*** |
| *A* | 90 – 91 | 92 – 97 | 98 – 100 |
| ***B*** | 80 – 81 | 82 – 87 | 88 – 89 |
| ***C*** | 70 – 71 | 72 – 77 | 78 – 79 |
| ***D*** | 60 – 61 | 62 – 67 | 68 – 69 |
| ***F*** | Below 60 | | |

***Late Work***

* The grade for labs submitted after the due date will be reduced by 10%.
  + Late labs 1 – 3 will only be accepted before the midterm exam.
  + Late labs 4 – 8 will only be accepted before the final exam.
* Quizzes and exams cannot be taken after the due date. Plan ahead!
* Exceptions will only be made for severe illness or emergency situations.

***Academic Honesty***  
While students are encouraged to discuss labs and to use each other as resources, each student is responsible for his/her own work. In other words, you can help each other, but you can't copy any part of someone else’s work. The end product must be entirely your own individual work.

***Attendance***

Class attendance is not graded but will be essential for successful completion of the class. Students who miss a class are responsible for obtaining the course content provided in class and mastering it.

***Tentative Course Schedule***

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| --- | --- | --- | --- |
| ***Week*** | ***Topics*** | ***Reading*** | ***Activities*** |
| **1** | **Intro to MVC** | Skim Freeman Ch. 1 – Core MVC in Context  Read Freeman Ch. 3– The MVC Pattern | Lab 1: Hello Android – Beta  Freeman Ch. 2 Exercise, Skeletal web site |
| **2** | **Controllers and Views** | Skim Freeman Ch. 4 – Essential Language Features  Skim Freeman Ch. 5 – Working with Razor  Read Freeman Ch. 17 – Controllers and Actions  <https://docs.microsoft.com/en-us/aspnet/core/tutorials/first-mvc-app/adding-controller> | Lab 1 code review  Lab 1 production version.  Lab 2 beta |
| **3** | **Unit Testing with Repositories and DI** | Skim: Freeman Ch. 6 – Working with Visual Studio  Read Ch. 7 through pg. 171– Unit Testing MVC Applications   * <https://docs.microsoft.com/en-us/aspnet/core/mvc/controllers/dependency-injection> * <https://docs.microsoft.com/en-us/aspnet/core/mvc/controllers/testing> | Lab 2 code review  Lab 2 production version  Lab 3 Beta |
| **4** | **Entity Framework and Database** | Read Freeman Ch. 8 – SportsStore, through the section on seed data  Review Freeman Ch. 18 – Dependency Injection | Lab 3 code review  Lab 4 beta  Lab 3 Release version |
| **5** | **Bower and JavaScript frameworks** | Review: Freeman Ch. 6 – Working with Visual Studio, the section on Bower  Continue Freeman Ch. 8 – SportsStore, the section on Bootstrap  Skim Freeman Ch. 10 – SportsStore, the section on FontAwesome | Reading quiz 5  Lab 4 code review  Lab 5 beta:  Lab 4 Release version |

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| **6** | **Midterm** |  |  |
| **7** | **Authorization** | Read Freeman Ch. 12 – SportsStore: Security and Deployment  Read Freeman Ch. 28 – Getting Started with Identity | Reading quiz 6  Lab 5 code review  Lab 6 beta  Lab 5 Release version |
| **8** | **Authentication** | Continue Freeman Ch. 12 – SportsStore: Security and Deployment  Read Freeman Ch. 29 – Getting Started with Identity | Reading quiz 7  Lab 6 code review  Lab 7 beta  Lab 6 Release version |
| **9** | **TBD** |  | Reading quiz 8  Lab 7 code review  Lab 8 Beta: TBD  Lab 7 Release |
| **10** | **TBD** |  | Lab 8 code review  Lab 8 Release |
| **11** | Finals Week | No reading, exercise or lab. |  |
|  | **Final Project Presentations** |  |  |

***Weekly Schedule (after the first week)***

Saturday

Post the beta (draft) version of this week’s lab assignment

Submit the production (final) version of last week’s lab work

Tuesday

Complete a review of your lab partner ’s beta version

Take the reading quiz

***Academic Calendar for Winter Term 2018***

First day of class                                                                            1/8

Last day to receive refund                                                                   1/14, 11:59 pm

Martin Luther King Jr. holiday                                                         1/15

President's Day holiday                                                                     2/19

Last day for schedule changes                                                           3/2

Finals week                                                                                        3/19 – 3/24

Term ends                                                                                           3/25

**Disability Services**

If you need support or assistance because of a disability, you may be eligible for academic accommodations through Disability Services. For more information, contact Disability Services at 463-5150 (voice) or 463-3079 (TTY), or stop by building 1, room 218.