

Accounting & MIS 3610

Foundations of Business Information Systems

Mondays and Wednesdays 5:45 - 7:05 PM

Instructor: Chad Thomas
Email: thomas.396@osu.edu
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Office: Fisher Hall Room 052
Office Hours: Mondays, immediately following class

Texts:

ASP.NET Core Essentials

Shahed Chowdhuri

<https://www.packtpub.com/web-development/aspnet-core-essentials>

ASP.NET Core and Angular 2

Valerio De Sanctis

<https://www.packtpub.com/application-development/aspnet-core-and-angular-2>

Additional Resources:

- The AMIS 3610 Canvas Site:
- MSDN: <https://msdn.microsoft.com>
 - C#: <https://msdn.microsoft.com/en-us/library/8zcz8718.aspx>
 - Visual Studio: <https://msdn.microsoft.com/en-us/library/dn762121.aspx>
- JavaScript: <https://www.javascript.com/resources>
- TypeScript: <https://www.typescriptlang.org>
- Angular: <https://angular.io/>

Expectations

This class will focus on solving real world business problems with web-based technologies such as Microsoft ASP.Net Core and MVC along with JavaScript & CSS. Class participants will be expected to apply the technologies covered to lab assignments to a semester project which will tie the class topics into a complete working application. Students will be evaluated on their ability to deliver working software in a manner which displays a proper grasp of the principles covered in lecture.

Grading

The grading for this course will come from several components:

Semester Project – 35%

Mid-Term Exam – 25%

Labs – 25%

Quizzes & Exercises – 15%

There will not be a final exam.

The Semester Project will be a small multi-page web application designed to meet a business need of student's own choosing. The instructor will help students to choose an appropriate subject and to guide students in maintaining a proper scope for the amount of time available. The application must be data-driven and use ASP.Net and JavaScript at least. The use of additional supporting technologies is at the student's discretion. The driving factor in a quality grade will be the appropriate application of the technologies covered in class to the business need which the solution aims to solve. Finally, students are expected to present their applications and explain the choices they made in the development of the final solution. The student should expect short quizzes (5-10 questions) to be given regularly which present topics from any subject presented or assigned up to that point in the course.

Quizzes will always be 'pop' quizzes, given without warning.

Labs & enrichment exercises are assigned throughout the class and have been identified on the class outline. Each exercise will emphasize retention and understanding of the subject taught in the previous class. Students are expected to ask clarifying questions and work through the new material during days reserved for lab work, but should always present an independent final product.

Grades for labs will be based on completeness and mastery.

Academic Misconduct

All students are expected to maintain the highest standards of academic integrity. Academic misconduct includes plagiarism or cheating of any kind. Any suspected incidents of academic misconduct will be reported immediately to the Chair of the Department of Accounting and MIS and the Committee on Academic Misconduct.

Course Schedule

Week 1

Monday, January 9- Course Introduction

- The Importance of Software
- Install .NET Core
- Install Development Environment

Wednesday, January 11 - .NET and ASP.NET Overview

- NET Overview
- ASP.NET Overview
- Software Patterns
- MVC Pattern

Week 2

Monday, January 16– No Class

Wednesday, January 18- Introduction to C#

- Type System
- Flow Control
- Classes, Interfaces
- Variables
- Generics
- Functional Aspects

Week 3

Monday, January 23- Introduction to Web Architecture

- HTTP
- Request / Response
- Trends in Web Applications
- Course Project JAD Sessions

Wednesday, January 25- Lab: Building Your First ASP.NET MVC Core Project

Week 4

Monday, January 30- ASP.NET Controllers

- ASP.NET Routing engine
- ASP.NET MVC Controllers
- ASP.NET Web API Controllers

Wednesday February 1- Lab: ASP.NET Controllers

Week 5

Monday, February 6 - ASP.NET Models and View; Razor

Wednesday, February 8 - Lab: Building ASP.NET MVC Simple Application

Week 6

Monday, February 13 - ASP.NET Web API and REST

- Overview of Web API's
- Overview of REST
- Design Implications of API's
- Inspecting API's with Postman

Wednesday, February 15 - Lab: Building and API and Web Client

Week 7

Monday, February 20- Introduction to Angular

- Why Angular
- Angular2 Goals and Architecture
- TypeScript

Wednesday, February 22- Lab: Building an Angular application

Week 8

Monday, February 27- Database Access with Entity Framework Core

- Why EF Core?
- LINQ Syntax

Wednesday, March 1- Lab: Database Access with Entity Framework Core

Week 9

Monday, March 6- Software Architecture

- Visualize What You Build
- Layered Architecture
- Hexagonal Architecture

Wednesday, March 8- **Midterm Exam**

Week 10

Spring Break- No Class

Week 11

Monday, March 20 - Securing ASP.NET and Angular Applications

- HTTPS
- OAuth

Wednesday, March 22- Lab: Securing an ASP.NET Core and Angular

Week 12

Monday, March 27- Dependencies and Dependency Injection

- Dependencies in Software
- Dependency Injection in ASP.NET Core
- Dependency Injection in Angular

Wednesday, March 29- Lab: ASP.NET Dependency Injection

Week 13

Monday, April 3 - Testing Web Applications

- Manual Testing vs. Automated Testing
- Pyramid of Testing
- Unit Tests
- UI Tests

Wednesday, April 5 - Adding Unit Tests to ASP.NET and Angular

Week 14

Monday, April 10 - The Cloud

- Why Cloud?
- Utility Computing
- IaaS vs. PaaS
- Major Providers

Wednesday, April 12 - Lab: Deploying to the Cloud

Week 15

Monday, April 17 - Containerization and Docker

- Why Containers
- Docker engine
- Docker Hub
- That Awkward Moment Where You Hate Me for Not Showing You Docker Sooner

Wednesday, April 19- Lab: Docker, Docker, Docker

Week 16

Monday, April 24

- Project Presentations

Wednesday, April 26

- Project Presentations