Accounting & MIS 3610

Foundations of Business Information Systems
Mondays and Wednesdays 5:45 - 7:05 PM

Instructor:	Chad Thomas
Email:	thomas.396@osu.edu
Office Hours:	Mondays, immediately after class

Goal

From the course catalog description, this course is a "technical foundation in programming interactive business information systems". We will examine the impact of people, process, and technology in delivering value for organizations. This course will be fairly technical in nature; however, students will not be evaluated on demonstrating technical proficiency.

Expectations

This class will focus on solving real world business problems with web-based technologies such as Microsoft ASP.Net Core and Angular. Class participants will be expected to apply the technologies covered in lab assignments to a semester project which will tie the 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 – 25%
- Mid-Term Exam – 25%
- Labs – 35%
- Quizzes & Exercises – 15%

There is no final exam.

Semester Project

The Semester Project will be a small web application designed solve a simple business problem. Students are expected to work in teams of 3 to 5 members. The instructor will help teams choose an appropriate subject and to guide them in maintaining a proper scope for the amount of time available. The application must be data-driven and use ASP.NET at a minimum. The use of additional supporting technologies is at the team'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, teams are expected to present their applications and explain the choices they made in the development of the final solution.

Midterm

The Midterm exam will be in-class on Carmen. There will be multiple-choice, true / false, short-answer, and an essay. The exam will be 'open notes, open web' but not 'open classmates'. Students who have general command of the material and well-organized notes do very well on the exam. Students will a casual relationship with lectures, labs, and the course in general, don't fair so well.

Labs

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 based on completeness and mastery.

Quizzes

Short quizzes (5-10 questions) will be given randomly, and cover topics from any subject presented or assigned up to that point in the course. Quizzes will always be 'pop' quizzes, given without warning.

Course Schedule

Week 1

Monday, January 7 - Course Introduction
- Course Introduction
- Syllabus walkthrough
- Digital Platforms

Wednesday, January 9 – Lab 1: Setting Up and Hello World
- Installing development environment
- Installing frameworks
- Writing our first programs

Week 2

Monday, January 14 - Architecture; ASP.NET
- The role of architecture
- Web architecture fundamentals
- Dependencies: frameworks and packages
- Introducing ASP.NET

Wednesday, January 16 – Lab 2: ASP.NET MVC Application
- Building a simple application with ASP.NET MVC

Week 3

Monday, January 21 - No Class (MLK Day)

Wednesday, January 23 – Course Project Overview
- Review scoring rubric
- Form teams
- Create team repository

Week 4

Monday, January 28 - The Human Side of Technology
- Requirements
- User Experience
- Product thinking

Wednesday, January 30 – Lab 3 ASP.NET Core Deeper Dive and Bootstrap
- Extending our ASP.NET MVC Application
- Razor, Views, Shared Components
- Using Bootstrap

Week 5

Monday, February 4 - The Software Development Processes
- Waterfall, Agile, Scrum, Continuous Delivery
- Phases and functions
- Metrics and measures

Wednesday, February 6 – Lab 4: Backlogs in Github
- Setting up a kanban board in GitHub
- Adding a backlog for our labs

Week 6

Monday, February 11 - Software Patterns: MVC, REST, SOLID
- What are software patterns
- MVC in depth
- REST APIs
- SOLID

Wednesday, February 13 – Lab 5: API and Dependency Injection
- Converting our Application to API
- Dependency Injection with ASP.NET Core

Week 7

Monday, February 18 - Web Components; Introduction to Angular
- Web Components
- UX, UI, Atomic Design
- Introduction to Angular

Wednesday, February 20 – Lab 6: Creating our Angular Front-end
- Converting our Application to API
- Dependency Injection with ASP.NET Core

Week 8

Monday, February 25 - Going Deeper with Angular
- Modules
- Services
- Communicating with an API

Wednesday, February 27 – Lab 7
- Extending our Angular App
- Calling our ASP.NET Core API from Angular

Week 9

Monday, March 4 - Midterm Exam Review

Wednesday, March 6 – Midterm Exam

Week 10

Monday, March 18 - Data Access with EF Core
- Data Architecture
- Databases
- Data Access

Wednesday, March 20 – Lab 8: Data Access
- Getting data into and out of a database

Week 11

Monday, March 25 - Software Testing
- How Software is tested
- Types of testing
- Automated testing

Wednesday, March 27 – Lab 9: Writing Automated Unit Tests
- Writing unit tests in for ASP.NET
- Writing unit tests for Angular

Week 12

Monday, April 1 - Security
- Aspects of Security
- Trust and Identity providers

Wednesday, April 3 – Lab 10: Securing our Application
- Building Authentication
- Authentication as a Service

Week 13

Monday, April 8 - Infrastructure
- Understanding Environments
- On Premises vs Cloud
- Deploying software

Wednesday, April 10 – Lab 11: Deploying our Application to Azure
- Manual deployment
- Automated deployment

Week 14

Monday, April 15 - Course Projects

Wednesday, April 17 – Course Projects

Monday, April 22 - Course Projects (As Needed)