WEB 250: DATABASE DRIVEN WEBSITES

COURSE DESCRIPTION:
Prerequisites: None
Corequisites: None

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.
Course Hours per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

LEARNING OUTCOMES:
Upon completing requirements for this course, the student will be able to:

A. Create server-side scripts that perform CRUD operations.
B. Demonstrate use of Integrated Development Environments.
C. Explain Client-Server architecture and the Model-View-Controller (MVC) design pattern.

OUTLINE OF INSTRUCTION:
I. Course Overview & Web Architecture
   A. Motivation
   B. Review how the Web Works, Nomenclature
   C. Review Client Server Architecture

II. Intro to Python with Django
   A. Installing Software, Virtual Environments
   B. Review Programming Basics, Python v. PHP
   C. Lists, Dictionaries, Tuples
   D. Catching Errors with Exceptions
   E. Intro to Classes, Packages, Modules

III. MVC Design and Django Overview
   A. Model, View, Controller Architecture
   B. Django’s Model, Template, View Architecture
   C. Design Best Practices
   D. Building a Django App

IV. Django Model and Templates
   A. The Pages Model
   B. Admin Site
   C. Template Settings
   D. Static Files
   E. Base.html and main.css

WEB 250, June 2018
F. Pages Template

V. Django View, Navigation, and Forms
   A. Rewriting the View
   B. Improving the Templates
   C. Creating Forms: Template and View
   D. Testing

VI. A Real Working Django Site
   A. Build an app from Tutorial
   B. Design and build your own simple app

VII. Class Project – Building a Website
    A. Large project issues, User Management, backups
    B. Using GitHub and App Deployment
    C. Applying MVC Design
    D. Writing the Specification Document
    E. Documenting Code and Best Practices