

WEB 215: ADVANCED MARKUP AND SCRIPTING

COURSE DESCRIPTION:

Prerequisites: WEB 115

Corequisites: None

This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support Internet applications. Upon completion, students should be able to design, code, debug, and document Internet-based programming solutions to various real-world problems using an appropriate programming language.

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. Design a web-based programming solution using an appropriate programming language.
- B. Create a web-based programming solution using an appropriate programming language.
- C. Debug a web-based programming solution using an appropriate programming language.

OUTLINE OF INSTRUCTION:

- I. Introduction
 - A. Introducing the Node.js-to-AngularJS Stack
 - B. JavaScript Primer
- II. Learning Node.js
 - A. Getting Started with Node.js
 - B. Using Events, Listeners, Timers, and Callbacks in Node.js
 - C. Handling Data I/O in Node.js
 - D. Accessing the File System from Node.js
 - E. Implementing HTTP Services in Node.js
 - F. Implementing Socket Services in Node.js
 - G. Scaling Applications Using Multiple Processors in Node.js
 - H. Using Additional Node.js Modules
- III. Learning MongoDB
 - A. Understanding NoSQL and MongoDB
 - B. Getting Started with MongoDB
 - C. Getting Started with MongoDB and Node.js
 - D. Manipulating MongoDB Documents from Node.js
 - E. Accessing MongoDB Documents from Node.js
 - F. Using Mongoose for Structured Schema and Validation

- G. Advanced MongoDB Concepts

- IV. Using Express to Make Life Easier
 - A. Implementing Express in Node.js
 - B. Implementing Express Middleware

- V. Learning AngularJS
 - A. Getting Started with AngularJS
 - B. Understanding AngularJS Modules and Dependency Injection
 - C. Implementing the Scope as a Data Model
 - D. Using AngularJS Templates to Create Views
 - E. Implementing Directives in AngularJS Views
 - F. Implementing AngularJS Services in Web Applications

- VI. Building Practical Web Application Components
 - A. Adding User Accounts to Your Website
 - B. Adding Comment Threads to Pages
 - C. Creating Your Own Shopping Cart
 - D. Building Interactive Web 2.0 Application Components