**Chiang Mai University**

**Bachelor of Engineering (Information Systems & Network Engineering)**

**Faculty of Engineering**

**1st Semester / Academic Year 2021**

**1. Course:** 269200 Web Programming Language

Credits: 3(2-3-4)

**Prerequisite**: 261102

**Course Description:**

Principle of web application, Web application workflow, Languages for web programming, Database-driven Website, Authentication and session, Testing and debugging

**2. Instructor:** Dr. Ken Cosh (Full Time Instructor)

**3. Course Objectives:**

On completing this course, students will be able to:-

3.1 Understand how the web works and how the different languages work together to create websites

3.2 be comfortable with HTML, CSS, PHP, MySQL, Javascript, Jquery, HTML5, Node.js, Express.js, MongoDB, Angular.

**4. References:**

**5. Course Outline:**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Content | Exercise | Hours  (Lect/Lab) |
| 1 | Introduction to the Web   * Basic HTML Tags * HTML Tables * Images and HTML Attributes * Hypertext & Links * HTML Comments |  |  |
| 2 | Cascading Style Sheets I   * Why Use CSS? * Introducing CSS * Selectors * <SPAN> & <DIV> * Where to CSS? * More on Selectors * CSS Properties |  |  |
| 3 | Cascading Style Sheets II   * The Position Property * Float & Clear * Borders, Margins & Padding * CSS Examples |  |  |
| 4 | Introducing PHP   * Setting up a Webserver * Basic PHP Syntax * PHP Variables * PHP Operators * PHP Flow Control * PHP Form Validation |  |  |
| 5 | PHP Functions & Objects   * Array Functions * Mathematical Functions * Date & Time Functions * Defining your own Functions * Include and Require * Objects in PHP |  |  |
| 6 | PHP Files, MySQL, Cookies & Sessions   * PHP & Files * Introducing MySQL & phpMyAdmin * Structured Query Language * MySQLi * Cookies * Sessions * Online Security Threats |  |  |
| 7 | Introducing JavaScript   * Variables * Operators * Control Statements * Arrays * Functions * getElementById() * Form Validation |  |  |
| 8 | Introducing JQuery   * Handling Events with JQuery * JQuery Effects |  |  |
| 9 | JQuery and the DOM   * The Document Object Model * Manipulating the DOM * Navigating the DOM |  |  |
| 10 | Asynchronous JavaScript & JQuery UI   * Introducing AJAX * JQuery and AJAX * JQuery UI |  |  |
| 11 | HTML5   * New Tags * Audio & Video * The Canvas * Geolocation * Local Storage * Web Workers |  |  |
| 12 | Introducing Node.js   * PHP vs Node.js * Setting up Node.js * Events in Node.js * Node Package Manager (NPM) * Sending Emails with Node.js |  |  |
| 13 | Node.js, MySQL & MongoDB   * Node.js & MySQL * Node.js & MongoDB * MySQL vs MongoDB |  |  |
| 14 | Express.js   * Getting Started with Express.js * Routing with Express.js * Creating an API with Express.js * Uploading Files with Express.js |  |  |
| 15 | Angular   * Getting Started with Angular * Components in Angular * Adding a TypeScript Class * Pipes & Two-Way Data Binding in Angular * Event Binding in Angular * Services in Angular * Routing in Angular |  |  |

**6. Course Activities**

This course will involve;

Lectures

Assignments

Reading the course material outside of class

**7. Course Assessment:**

1. Assignments - 50%

2. Midterm exam - 20%

3. Final exam - 30%

**8. Course Evaluation:**

1. To be able to take the exam students must attend class at least 80% of the time.
2. Plagiarism is not acceptable, any students caught plagiarising will receive 0.
3. The evaluation is based on the grading scale given in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| Grade | Letter Grade | Score (four-point scale) | Transcript Legend |
| 80-100 | A | 4 | Excellent |
| 75-79 | B+ | 3.5 | Very Good |
| 70-74 | B | 3 | Good |
| 65-69 | C+ | 2.5 | Quite Good |
| 60-64 | C | 2 | Moderate |
| 55-59 | D+ | 1.5 | Weak |
| 50-54 | D | 1 | Very Weak |
| 0-49 | F | 0 | Fail |

4. The following “letter grades” may also be given:

“I” Incomplete

“W” Withdraw

“IP” Course work in progress