**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
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| 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