

One Year Program
WEB ENGINEERING
Course Outline



Module 1: (Duration: 04 Months-96 Hours)



UI Design with Photoshop

Getting Started with Photoshop

Work Environment

- Looking at the Work Area
- Customizing Preferences & Keyboard Shortcuts
- Using the tools & Tool Options

Working with Selections

- About selecting & selection tools

Understanding Layers

- Background layers
- Creating layers
- Rearrange & editing layers
- Opacity & Layer Blending Modes
- Linking Layers
- Applying Layer Styles
- Flattening Layers
- Layer Comps
- Duplicating & Aligning Layers
- Layer Groups

Transforming

- Free Transform
- Mathematical transforms: Flip, Rotate, Arbitrary
- Scale, Skew, Distort, Perspective
- Transform with Warp
- Canvas Rotation

Basic Photo Corrections

- Understanding Images: Raster & Vector
- Image Resolution
- Exposure & Balance
- Tonal values & Photography
- Image Adjustments Options
- Working with the Adjustments Panel
- Histogram
- Levels Dialog Box
- Curves Dialog Box
- Straightening & Cropping
- Using Automatic & Manual Adjustments
- Contrast, Shadows & Highlights,

- Rectangular & Oval selections
- Lasso tool, Magnetic Lasso Tool, Polygonal Lasso Tool
- Magic Wand
- Quick Selection Tool
- Feathering - softening selection edges
- Selecting by Color

- Hue & Saturation
- Replacing colors
- Dodge, Sponge & Burn tools
- Black & White Adjustment Feature

Retouching & Repairing

- Clone Stamp Tool & Clone Panel Options
- Pattern Tool
- Spot Healing Brush
- Healing Brush & Patch Tools
- Red Eye Removal
- Separate Layer retouching
- Layers - Auto Align Layers
- Spherical Alignment
- Layers -Auto Blend Layers
- Content Aware Healing & Fills
- Typography
- Adding Type
- Character & Paragraph settings
- Justification & Hyphenation
- Tracking, Kerning & Leading
- Warping Type
- Type on a Path
- Vertical Type

Brushes

- Working with brushes
- Changing Brush Options

Vector Drawing: Paths

- Pen Tool
- Using Paths
- Scaleable Objects

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- Shape Layer
- Importing Smart Objects (Illustrator/ Acrobat)
- Complex Path editing
- Compound Paths
- Saving Paths
- Clipping & Work Paths
- Filling & Stroking paths, selections

Designing a Website

- Setting up a Grid in Photoshop
- Creating Web-optimized Images from
- **Photoshop Site Mockup**
The Crop-and-save Method
- The Slice Method
- Taking It to the Web



Document Markup languages with HTML 5

HTML Introduction

- Web Introduction
- What is web browser
- HTML History
- HTML 4 Features
- HTML 5 Features
- HTML IDE Tools
- HTML Elements
HTML TAG / Attributes
- Web Structure
Head / Body

Basic Syntax

HTML Headings

HTML Paragraphs

- <p> Element
- <pre> Element

HTML - Fonts

HTML – Formatting

HTML Quotation and Citation Elements

- <q> Element
- <blockquote>
- <abbr>
- <address>
- <cite>

HTML Comments

HTML Colors

HTML Block and Inline Elements

HTML – Images

- Insert Image
- Image Location
- HTML File Paths
- Set Image Width/Height
- Set Image Border

HTML Links

- <A> Tag
- Types of Links
- Text Links
- Image Links
- Email Link

HTML Lists

- Unordered Lists
- Ordered Lists
- Definition Lists
- Type Attribute
- Start Attribute

HTML Tables

- Create Tables
- Table Height and Width
- Table Heading
- Cellpadding and Cellspacing Attribute
- Colspan and Rowspan Attributes
- Tables Backgrounds
Bgcolor, Background attribute
- Table Caption
- Table Header, Body, and Footer
<thead>, <tbody>, <tfoot>
- Nested Tables (Table layout)

HTML Forms

- Form Attributes (Action, method, target, enctype).
- HTML - 4 Form Controls
- HTML - 5 Form Controls
- HTML – 5 Form Validations

HTML Marquees

- <marquee> Tag Attributes
width, height, direction, behavior, scrolldelay, scrollamount, loop, bgcolor, hspace, vspace

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HTML Frames

HTML Iframes

HTML Entities

HTML Symbols

HTML Meta Tags

HTML 5 Semantic Elements

- <article>
- <aside>
- <details>
- <figcaption>

- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>



Style Sheet CSS-3

CSS Overview

- Introduction
- Advantages of CSS
- CSS Versions

CSS Syntax

- CSS types
- Define Selectors
- Class and Id
- Difference between class and id

CSS Inclusion

- Inline CSS
- Internal CSS
- External CSS
- Imported CSS - @import Rule
- CSS Comments

Measurement Units

CSS Colors

CSS Background

CSS Fonts

CSS Text

CSS Images

CSS Links

CSS Tables

CSS Display

CSS Borders

CSS Margin

CSS List

CSS Padding

CSS Cursors

CSS Outlines

CSS Scrollbars

CSS Visibility

CSS Positioning

CSS Filters

CSS Layout

CSS Forms

CSS3 Transitions

CSS3 Animations

Templates

Creating a template

Difference between table base and div base conversion

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IDE Tools Dreamweaver CC



Responsive Layout with Bootstrap



Adobe Muse

Introduction to Adobe Muse

- program overview
- exploring the work area
- overview of tools and panels
- optimizing the workspace

Plan a Website in Muse

- create a new site
- organize and diagram a multi-page site using plan mode
- add and remove pages from the site
- adjust site properties

Design the Look and Feel of a Site

- Starting with a master page
- choose a browser background color or image
- choose a page background color or image
- create header and footer areas
- design with columns and guides
- add a navigation bar
- add and adjust photos and graphics
- add text to your page

Navigation, Buttons, and Links

- customize the nav bar
- add internal page links
- add external web links
- customize the appearance of links
- create buttons and rollovers
- create clickable hotspots
- create and edit link styles

Working with Text

- overview of Muse's text formatting controls
- improving your site with web fonts via Typekit
- create and editing paragraph styles in Muse
- create and editing character styles in Muse
- Working with Images
- overview of image formats
- place images
- scale, rotate, and crop images
- create and editing object styles
- drag and drop image library with Bridge

Adding Advanced Features to your Website

- compositions
- panels
- slide shows
- employing HTML snippets
- google maps
- shopping carts
- forms
- calendars
- Using pins to keep items constantly on screen

Publishing a Site to the Web

- publish with Adobe Business Catalyst
- publish with a 3rd party host
- export to html
- ins and outs of uploading via FTP

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Module 2: (Duration: 04 Months-96 Hours)



Vanilla JavaScript ES5, ES6 (ECMA Script 5, 6)

JS Introduction

- What is JS
- Scripting Languages
- Types of Script
 - Client / Server Side
- Advantages of JS
- Limitations of JavaScript
- JS Development Tools

JS Syntax

- Basic Syntax
- JavaScript Placement in HTML

JS Output

- Within Body
- Within Head
- Within a Separate File
- Within Terminal

JS Comments

- Single line comments
- Multi line comments

JS Variables and Data Types

- JS Variable Scope

JS Operators and Types

- Arithmetic Operators
- Comparison Operators
- Logical (or Relational) Operators
- Assignment Operators
- Conditional (or ternary) Operators

JS Control Follow

- if statement
- if...else statement
- if...else if... statement.
- Switch Case

JS Loops

- while Loop
- do...while Loop
- For Loop
- for...in

- Loop Control (Break / Continue)

JS Functions

- Built-in Functions
 - JS String
 - JS Math
 - JS Numbers
 - JS Random
 - JavaScript Dates
- User Define Functions

JS Objects

JS Events

JS Array

- Array Properties
- Array Methods

JS with HTML Form

- JavaScript Form Validation
- Validate Empty Text Box
- Validate Text Length
- Compare Password
- Validate Email

JS Errors

- Try
- Catch
- Throw
- finally

JS Page Redirection

JS Dialog Boxes

- Alert Box
- Confirmation Box
- Prompt Box

JS with Images

JS Page Printing

ES6 (only 1 class)

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JQuery



Create SPA using Angular JS

AngularJS Overview

- Introduction
- Angular Features
- Angular Advantages / Disadvantages
- AngularJS Components

AngularJS Environment Setup

- Installation

AngularJS - MVC Architecture

- Model
- View
- Controller

Single Page Applications

- Define Single Page Application

AngularJS – Directives

- ng-app
- ng-init
- ng-model
- ng-repeat

AngularJS Modules

- ng-model Directive

Data Binding

- Define Data Binding
- Two-Way Binding

AngularJS Controllers

- ng-controller

AngularJS Expressions

- Numbers
- Strings
- Object
- Array

AngularJS Scope



JSON (JavaScript Object Notation)

JSON – Introduction

JSON Syntax

- JSON Syntax Rules

JSON Data Types

- JSON Strings
- JSON Numbers
- JSON Objects

AngularJS Filters

- Currency
- Date
- Filter
- JSON
- Limit to
- Lowercase
- Number
- Order by
- Uppercase

AngularJS Tables

- Display Data in Table
- Looping through ng-repeat

Angular Forms

- Angular forms vs HTML forms
- Input Controls
- Form events
- Form validation

AngularJS Includes

- Using Server Side Includes

AngularJS Views

- ng-view
- ng-template
- ng-template

AngularJS Routing

- ngRoute

AngularJS - HTML DOM

- ng-disabled
- ng-show
- ng-hide
- ng-click

- JSON Arrays
- JSON Booleans
- JSON null

JSON Objects

JSON Arrays

JSON.parse()

JSON.stringify()

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JSON PHP

Module 3: (Duration: 04 Months-96 Hours)



IDE Tool PHP Storm



Server Side Scripting with PHP - 7

PHP Introduction

- History of PHP
- Comparison with dynamic content alternatives
- PHP Tools
- How PHP Works

Web Servers

- WAMP / XAMP
- Installation / Environment Setup (Configuration)
- Understanding localhost Server

PHP Syntax

- Basic PHP Script
- PHP Statements and Whitespace
- PHP Code Placement
- PHP Comments
- Embed PHP In HTML

PHP Variable

- Variable Types
- Variable Names
- Variable Scope
- Super Global Variable
- Constants
- Pass PHP variables via the URL.

PHP Operators and Expressions

- Arithmetic operators
- Assignment operators
- Comparison operators
- Increment/Decrement operators
- Logical operators
- String operators
- Array operators
- Comparing String and Numbers

Control Structure

- If Statement
- If.....Else Statement
- Nested If Statement

- Switch / Case Statement
- Ternary Statement (? :)

Loop Structure

- While
- Do While
- For
- Foreach
- Nested Loop
- Break and Continue

String Manipulation in PHP

- Concatenation
- String Functions
- Regular Expressions

PHP Array

- Create Array
- Types of Array
 - Indexed arrays
 - Associative arrays
 - Multidimensional arrays
- Two / Three Dimensional Arrays
- Array Functions
- Loops with Array

PHP Functions

- Purpose of functions
- Built-in functions
- Declaring functions
- Function arguments
- Variables scope

Taking User Input from Forms via PHP

- Creating forms with PHP
- Using the form GET Method
- Using the form POST Method
- Obtaining data from forms through variables

PHP State Management

- Creating Cookies
- Set Cookies

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- Destroying Cookies
- Creating Session
- Set Session
- Register and modify PHP session variables
- Destroying Session
- Define Headers
- Using query string (URL rewriting)

File Inclusion

- Include Files
- Require
- Require Once

File Handling. The Plain Repository of Data

- Handling files and directories in PHP.
- Fetching information from files.
- Uploading and downloading files.

Error Handling & Exception

Sending Email with PHP

- Email Function
- Auto Alert System



Laravel PHP Framework

Laravel Overview

- Introduction
- Laravel – Features

Laravel Installation

- Define Composer
- Define Artisan
- Create Laravel Project

Laravel Application Structure

- Root Directory
- App Directory

Laravel Configuration

- Basic Configuration
- Environmental Configuration
- Database Configuration
- Naming the Application

Laravel Routing

- Basic Routing
- Routing Parameters

Laravel Middleware

- Define Middleware
- Register Middleware
- Middleware Parameters

Database (Mysql / Mysqli) with SQL Injections

- Connection / disconnection, login / logout
- Include common access functions
- Doing simple SQL queries via PHP (Select, Insert, Update, Delete)
- SQL Functions in PHP
- Database Relationship
- Database Backup
- Restore Database Backup

Build A Complete CRUD Application with PHP, MYSQL (CMS)

- Website Backend & Frontend Management
- Insert, update, delete & retrieve site text, Pictures.
- Content Searching

Publish online Web Site

- Create Online Database
- Upload site

- Terminable Middleware

Laravel Controllers

- Basic Controllers
- Controller Middleware
- Restful Resource Controllers
- Implicit Controllers
- Constructor Injection
- Method Injection

Laravel Request

- Retrieving the Request URI
- Retrieving Input

Laravel Response

- Basic Response
- Attaching Headers
- Attaching Cookies
- JSON Response

Laravel Views

- Understanding Views
- Passing Data to Views
- Sharing Data with all Views
- Blade Templates Engine

Laravel Redirections

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- Redirecting to Named Routes
 - Redirecting to Controller Actions
- Laravel Working with Database**
- Connecting to Database
 - Insert Records

- Retrieve Records
 - Delete Record
 - Update Record
- Laravel Sending Email**



WordPress + Woo Commerce

Introduction / Overview

Installation

Dashboard

WordPress Settings

- General Setting
- Writing Setting
- Reading Setting
- Discussion Setting
- Media Setting
- Permalink Setting

WordPress Categories

WordPress Posts

WordPress Pages

WordPress Tags

WordPress Comments

WordPress Plugins

WordPress Users

WordPress Appearance

WordPress Plugin

Backing Up the Website

- Installing a Plugin
- Creating a Backup
- Locating the Backup

Woo-Commerce

- Installation
- Define Setting
- Add Products Categories, Product, Price and Shipping Details.
- Define Payment Method, Orders, Currency and Billing.
- Create Store
- Final Project



Version Control System (VCS) with GIT

VCS Introduction

GIT Introduction

Installation

Create GIT Account

Create a local GIT Repository

Add file to the repo

Create a commit

Push a branch to GitHub

Create a Pull Request (PR)