WEB DEVELOPMENT SYLLABUS

Introduction

- UI Developer roles and responsibilities
- UX designer roles
- Technologies needed
- Power of UI
- Current market requirements on UI
- Basic Technologies needed
- Difference between Front end and Backend
- Sample web pages
- Crawling and Meta tags

Basics – HTML

- Exploring existing pages
- Browsers & Editors
- DOM
- Structure of HTML Page
- Mandatory tags in html page (html, head, body)
- Heading tags (H1…H6), Tags and attributes (Class, Id, style…etc.)
- Inline and block level elements

CSS

- What is CSS
- Different ways of applying CSS for elements, and priority chain of CSS
- CSS Properties (color, font, size, border…etc.)
- Box model, Margin & Padding
- Positioning Elements, Floating Elements

More HTML Tags

- Including external page links in a page using anchor tags and its properties
- Working with row & column data using table tags
- Hiding and un-hiding elements using display property
- img tag, p tag, ul &ol tags, li, nobr, hr, bretc
- Layouts, forms, buttons
- Input fields (textbox, radio button, checkbox, dropdown, text area etc.)
- Debugging HTML & CSS (Firebug, IE and Chrome developer tool)
- Creating Tabs and menu lists

More CSS Properties

- Adding borders, font, Pseudo classes & Pseudo Elements
- positioning elements (absolute, relative, fixed & static)
- Image spiriting
- Box model (margins, padding)
- Floating elements (float left, right etc.)
- Including external resources
- Absolute and Relative paths
- Including external resources like CSS, images etc.
- Display Property(inline, block, inline block etc)
- Display none and hidden elements.

Form Elements

- Get & Post Communication
- Validating input values in a form.
- Form action and type

JavaScript

- Data types and data structures in Js
- Control structures, if, if-else, while, for, switch case statements
- Hosting & type casting

JavaScript Supported Data Structures

- Arrays and Predefined methods.
- Working on logical programs using Arrays.
- Predefined methods in arrays
- Strings and predefined methods
- Objects
- JSON, SET, MAP
- Iterating through Dynamic JSON Object.
- Exploring Predefined Date object.

Advanced JavaScript

- Inheriting Static Object using proto.
- Inheritance using Object.create()
- Java Script Classes
- Prototyping
- Inheritance using prototyping.
- Global and local variables
- Securing Data using Closures
- Exception Handling
- Handling Predefined and user defined exceptions
- Exploring try, catch, finally and throws.

jQuery

- History and version explore
- Difference between Minified and non-minified JS files.
- On load and on ready difference
- jQuery selectors
- Multiple ways of referring DOM elements using jQuery selectors
- jQuery methods
- Adding dynamic properties for DOM elements
- Toggling elements
- Creating dynamic elements using jQuery

jQuery Traversing methods

- Traversing Siblings, Children's & Parent Elements.
- Traversing Ancestors.
- Finding elements using jQuery techniques
- Filtering elements

Events using jQuery

- Binding events, Dynamic binding
- List of events been supported in jQuery (blur, change, click, dbclick….etc.)s

AJAX

- Advantages with AJAX and its limitations
- Samples working with AJAX
- Different data formats used in AJAX (string, xml, JSON, etc.)
- XML and JSON difference
- Cross domain interactions using JSONP
- jQuery Promises with multiple conditions
- Handling Multiple AJAX Calls using jQuery Promises.

jQuery Animations

- Animation Effects using
- Hide, Show
- Sliding up and down, Fading, Animate Method.

jQuery Templating

- Loading DOM dynamically using jQuery templates
- loading templates using AJAX

HTML 5

- Difference between HTML5 and HTML 4
- List of Browsers support HTML5
- Doc type & Semantic Tags
- Multithreading Using Web Workers.
- Media Support (audio and video tags)
- Graphics using Canvas tag and SVG Tags.
- Drag and Drop features
- Offline Application using Application Cache
- Exploring Navigator Object
- Working on locations lat and lng using Geolocation
- Storing user preferences using Local storage & Session Storage

CSS 3

- Difference between CSS 2 and CSS 3
- Adding borders and backgrounds
- Advanced text effects(shadow)
- 2D and 3D Transformations
- Adding Transitions to elements
- Adding animations to text and elements

Responsive Design

- Difference between multiple devices, making a page to work on multiple devices
- Media queries
- Introduction to Bootstrap CSS API

Bootstrap-4 along with components

- Basic-Typography
- Text-Alignments, Floats-Positions
- Colors-Backgrounds, Margins-Paddings
- Sizings, Breakpoints, Buttons, Navbars
- List-Groups,Forms, Input-Groups
- Alerts-Progress
- Tables, Cards, Carousel, Collapse, Modal
- Grid-System, Grid-Alignments,FlexBoxes

ECMA 6 (Latest JavaScript)

- Const and let keywords
- Arrow functions, advantages
- Extended parameter handling, default parameters
- Template literals
- Enhanced object parameters
- Creating direct classes, inheritance
- Implementing promises
- new data structures sets and maps
- New string built-in methods
- Using iterators

NODE JS

- Introduction to Server-Side Scripting
- Node JS Features and Drawbacks
- Setup Environment for Node.js
- Node JS Program architecture
- Node JS Web Server
- Node JS Global Objects
- Node JS OS Objects
- Node JS Error Handling
- Node JS Event Loop
- Node JS File System
- Async and Sync
- Connecting with Database
- Handling CRUD Operations
- Express
- Routing in Express
- Response Methods in Express
- Serving Static Files
- Express JSON Parser
- Express CORS
- Creating Web API

Express JS

- Exploring Express module
- Setting up express environment
- Creating http server using express

Express Sessions

Data Communication

- Sending and receiving Post & GET Data
- Reading data from GET/POST requests

Templates

- Creating templates using PUG/JADE
- Generating Dynamic html pages from server
- Responding a template for a client request

File System

- Exploring File system, Reading and writing to files

REST API &WebServices

- Introduction to REST API
- REST Architecture

Clustering

- Creating and handling multiple clusters in Node js

DB Connection

- Connecting to Mongo DB&Connecting to SQL

WebService with DB interactions

- Creating web services which communicate with Database

MONGO DB

- Introduction to MongoDB
- Configuring Server and Client
- MongoDB Compass
- Creating Database
- MongoDB Commands
- MongoDB CRUD Operations

Angular-13 Introduction

ReactJS Introduction