



## Full Stack Development Course Content

### Course Objective:

The course objective is train students to develop and deploy a fully functional website from end to end.

### Course Content:

#### Module 1: 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

#### Module 2: 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

#### Additional 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

#### Module 3: 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



## 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

## Module 4: Java Script:

- 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, dblclick....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

## 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

## Module 5: Reactjs / Nodejs:

### 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

# SKILL UPGRADATION FOR RURAL- YOUTH EMPOWERMENT (SURE TRUST)



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- 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

## 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 & Web Services

- 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 Database

## Module 5: MONGO DB

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

## Module 6: Django:

- Introduction
- Python OOPS
- Quick refresh for HTML, CSS & JavaScript
- Why Django?
- Django official documentation
- Apps in Django
- Models in Django
- Template Syntax in Django
- Users management in Django
- Administration with admin page



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- How to link database
- User registration
- login and logout
- Managing user profile
- Debugging errors
- Sending Emails
- Deployment

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