

**NATIONAL INITIATIVE FOR ARTIFICIAL INTELLIGENCE & INFORMATION SECURITY**

**Software Engineering (Full Stack Development)**

1 Year Program Designed for Absolute Beginners

**Description:**

Software engineering is the process of analyzing user needs and designing, constructing, and testing end user applications that will satisfy these needs through the use of software programming languages. It is the application of engineering principles to software development. In contrast to simple programming, software engineering is used for larger and more complex software systems, which are used as critical systems for businesses and organizations

**1st Quarter Course Road Map**

**Course Topics:**

1. Introduction & Overview
2. HTML5 (Projects)
3. CSS3 (Projects)
   * HTML + CSS (Projects)
4. Animation (Projects)
5. Sass (Projects)
6. Less (Projects)
7. JavaScript (Projects)
8. jQuery (Projects)
9. Bootstrap4 (Projects)
10. Cloud-base Web Hosting

**“WEB DESIGN & DEVELOPMENT” COURSE DETAIL OUTLINE**

1. Hyper Text Markup language
   * What is HTML?
   * Creating a basic HTML Document
   * HTML Elements
   * HTML Attributes
   * HTML Styles
   * HTML Headings
   * HTML Paragraphs and Pre
   * HTML Computer Code
   * HTML Comments
   * Text Formatting
   * HTML Quotes and Abbreviation
   * HTML Color
   * Block and Inline Elements
   * ID’s and Classes
   * HTML Links
   * HTML Images HTML Tables
   * HTML List
   * Video and Audio
   * Forms
   * Semantics
   * Others
2. CSS3 (Cascading Style Sheet)
   * CSS Syntax
   * CSS Types
   * CSS Selectors in depth
   * Understanding children selectors using examples
   * CSS Colors
   * CSS Border, Border-radius
   * CSS Margin
   * CSS padding
   * CSS Box-Model
   * CSS width, height and line-height combination
   * CSS Font-family
   * CSS Text formatting
   * CSS Display property
   * CSS positioning in depth
   * CSS Overflow property
   * Important concept float and clear
   * CSS Opacity
   * CSS Box-Shadow
   * Text Shadow
   * Gradient
   * Background
   * Variables
   * Transition
   * Animation
   * Pseudo Classes
   * Pseudo elements
   * Attributes Selectors
   * Combinatory selectors
   * Media
3. HTML + CSS (PROJECTS)
   * CSS Flexbox with projects (Projects)
   * CSS Hover projects (Projects)
4. JAVASCRIPT
   * What is JavaScript and why?
   * JavaScript Syntax
   * Best use of JavaScript
   * JavaScript Comments
   * JavaScript Variables
   * Types of Variables in JavaScript
   * Arithmetic Operators
   * Assignment Operators
   * Concatenation Operator
   * String
   * Comparison Operators
   * Logical Operators
   * IF statement
   * IF else
   * Operator
   * Function
   * Local VS Global Variables
   * Introduction to Loops
   * For Loop
   * While Loop
   * Do While Loop
   * Array
   * Objects
   * DOM

**(PROJECTS)**

1. JQUERY
   * What is jQuery and why we use?
   * Using jQuery in Websites
   * Solution Conditional Script Loading
   * jQuery Syntax
   * jQuery Selectors
   * Mouse events
   * Keyboard events
   * Forms events
   * Document window events
   * Hide & show
   * jQuery CRI
   * Getting content using jQuery
   * Setting content using jQuery
   * Creating HTML content using jQuery
   * Adding HTML content using jQuery
   * Removing HTML content using jQuery

**(PROJECTS)**

1. CSS BOILER/SKELTON
   * Landing page
   * One of exercise
2. SASS
   * What is SASS?
   * Why we use?
   * Variables
   * Mix in
   * Operators
   * Nesting
   * Function
   * Inheritance

**Projects**

1. LESS
   * What is less?
   * Why we use
   * Variables
   * Mix in
   * Nesting
   * Function
   * Conditional
   * Loop

**Projects**

1. BOOTSTRAP
   * Introduction getting started
   * Typography utilities
   * CSS components
   * Project- landing page
   * Admin dashboard

**EXAMS EVALUATION SYSTEM:**

The course will be evaluated accordingly.

|  |  |
| --- | --- |
| **Evaluation based on** | **Marks** |
| Final Exam | 40% |
| Lab | 40% |
| Quiz/Assignment | 20% |

**Exams Grading System:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grade** | **Percentage** | **GPA** | **Remarks** |
| A | 85-100 % | 4.00 | Exceptionally Outstanding |
| A- | 80-84 % | 3.75 | Outstanding |
| B+ | 75-79 % | 3.50 | Excellent |
| B | 70-74 % | 3.25 | Very Good/High Marks |
| C+ | 65-69 % | 3.00 | Good/Pass |
| C | 60-64 % | 2.75 | Satisfactory/ Acceptable |
| D+ | 55-59 % | 2.50 | Acceptable |
| D | 50-54 % | 2.25 | Acceptable |
| E+ | 45-49 % | 2.00 | Unsatisfactory but not fail |
| E- | 40-44% | 1.75 | Unsatisfactory but not fail |
| F | 35-39% | 1.50 | Fail |

**NOTE:** The student with grade “F” will be considered fail.