CSS Mastery Syllabus

Part 1: CSS Foundations

Topic 1 – Introduction to CSS

- What is CSS and Why It Matters
- Understanding the Role of CSS in Web Design
- Ways to Include CSS in a Web Page
 - o Inline CSS
 - Internal CSS
 - o External CSS
- CSS Syntax and Rules
- Comments in CSS
- Linking CSS to HTML Files
- Best Practices for CSS Organization

@ Practical Exercise:

Create a simple webpage and apply different methods of adding CSS styles (inline, internal, external).

Topic 2 – CSS Text & Typography

- Text Styling (bold, italic, underline, etc.)
- Text Spacing (letter-spacing, word-spacing, line-height)
- Text Alignment and Transformation
- Font Families and Fallbacks

- Font Size Units (px, em, rem, %)
- Font Weight and Style
- Text Color and Readability
- Style Guide Basics (consistency in typography and colors)

@ Practical Exercise:

Design a simple "About Me" page with professional text styling and font combinations.

Topic 3 – CSS Selectors

- The Type Selector
- The Cascade and Inheritance
- Grouping Selectors
- Class and ID Selectors
- Attribute Selectors
- Pseudo-classes (:hover, :focus, :nth-child, etc.)
- Pseudo-elements (::before, ::after)
- Combinator Selectors (descendant, child, adjacent, sibling)
- Specificity Explained
- Universal Selector (*)

@ Practical Exercise:

Create a styled navigation menu using different selector types and pseudo-classes.

Topic 4 - The CSS Box Model

- Introduction to the Box Model Concept
- Content, Padding, Border, and Margin

- Box Sizing (content-box vs border-box)
- Width and Height Properties
- Background Color and Image
- Border Radius and Shadows
- Display Property (block, inline, inline-block)
- CSS Reset and Normalize
- Container Design: Max-width, Min-width, Max-height, Min-height

Practical Exercise:

Build a card layout demonstrating margin, padding, and border manipulation.

Topic 5 – CSS Units

- Understanding Absolute vs. Relative Units
- Pixels (px), Points (pt), Centimeters (cm)
- Percentages (%)
- ems and rems
- Viewport Units (vw, vh)
- Choosing the Right Unit for Responsive Design

@ Practical Exercise:

Rebuild your card layout using relative and viewport units for responsiveness.

Topic 6 – CSS Functions

- Introduction to CSS Variables (Custom Properties)
- Using calc() for Dynamic Layouts
- Combining CSS Variables and Functions

Practical Use Cases in Real Projects

@ Practical Exercise:

Build a responsive color theme using CSS variables and calc() for spacing.

Part 2: Modern Layouts and Advanced CSS

Topic 7 - Flexbox

- What is Flexbox and Why Use It
- Normal Flow vs. Flexbox Layout
- The Flex Container and Flex Items
- Properties:
 - o justify-content
 - o align-items
 - o align-content
 - o flex-wrap
 - o gap
 - o align-self
- Nested Flexbox
- Centering Elements with Flexbox

Oractical Exercise:

Design a responsive navigation bar and a pricing table using Flexbox.

Topic 8 - CSS Grid

Introduction to CSS Grid Layout

- Grid Columns and Rows
- Grid Gap and Auto-fit / Auto-fill
- Grid Template Areas
- Aligning Grid Cells and Containers
- · Positioning Items in the Grid
- Combining Grid with Flexbox

@ Practical Exercise:

Build a multi-section landing page using CSS Grid.

Topic 9 – Responsive Design

- What is Responsive Web Design (RWD)?
- Understanding Viewport and Media Queries
- Common Breakpoints for Devices
- CSS vs Physical Pixels
- Mobile-first vs Desktop-first Design
- Responsive Typography and Images

@ Practical Exercise:

Make your landing page fully responsive across mobile, tablet, and desktop.

Topic 10 – CSS Positioning

- Position Property: static, relative, absolute, fixed, sticky
- Understanding Z-index and Stacking Context
- Layering and Overlapping Elements
- Using CSS Transform for Rotation, Translation, and Scaling

© Practical Exercise:

Create a sticky header and floating button using positioning and transform.

Topic 11 – Shadows and Transitions

- Adding Depth with Box Shadows and Text Shadows
- CSS Transitions: Duration, Timing Function, Delay
- Hover and Focus Effects
- Smooth UI Interactions with Transitions

Practical Exercise:

Add hover animations to buttons and cards using shadows and transitions.

Topic 12 – CSS Frameworks

- Why Use a CSS Framework
- Overview of Popular Frameworks
 - Bootstrap
 - Tailwind CSS
- Advantages and Limitations
- Customizing Framework Components

@ Practical Exercise:

Rebuild your landing page using either Bootstrap or Tailwind for faster styling.

V Final Project:

Build a Complete Responsive Website

- Combine Flexbox, Grid, Transitions, and Frameworks
- Use CSS Variables and Functions for theme control

• Include at least one interactive section