

(Building Futures Through Digital Knowledge and Innovation)

Cascading Style Sheet (CSS3) (03 Months)

Syllabus

1: Introduction to CSS

- ✓ What is CSS?
- ✓ Role in Web Development
- ✓ Evolution (CSS1, CSS2, CSS3)
- ✓ CSS Syntax
- ✓ How browsers apply CSS
- **Implementation Techniques**
 - ✓ Inline CSS
 - ✓ Internal CSS (<style>)
 - ✓ External CSS (.css file with <link>)

2: CSS Selectors

- **Basic Selectors**
 - ✓ * Universal Selector
 - ✓ #id Selector
 - ✓ .class Selector
 - ✓ h1, p, etc. Element Selectors
- **Advanced Selectors**
 - ✓ Attribute Selectors:
 - [type="text"], [href^="https"], [alt*="logo"]
 - ✓ **Combinators:**
 - Descendant (div p)
 - Child (div > p)
 - Adjacent Sibling (div + p)
 - General Sibling (div ~ p)
 - ✓ **Pseudo-classes:**
 - :hover, :focus, :nth-child(), :checked, :not()
 - ✓ **Pseudo-elements:**
 - ::before, ::after, ::first-letter, ::selection

3: Color, Backgrounds, and Borders

- ✓ CSS Color Modes:
 - Named, HEX, RGB/RGBA, HSL/HSLA
- ✓ background, background-size, background-position, background-repeat
- ✓ background-origin, background-clip
- ✓ CSS Gradients:
 - Linear, Radial, Repeating
- ✓ background-blend-mode
- ✓ mix-blend-mode

- ✓ border, border-radius, border-inline, border-block
- ✓ outline and outline-offset
- ✓ box-shadow, text-shadow

4: Box Model & Sizing

- ✓ Content → Padding → Border → Margin
- ✓ box-sizing: border-box
- ✓ Width and Height
 - inline-size, block-size
 - min-width, max-width, min-height, max-height
- ✓ overflow, overflow-x, overflow-y
- ✓ display: block, inline, inline-block, none, flow-root

5: Typography and Fonts

- ✓ Text Styling:
 - color, text-align, line-height, letter-spacing, word-spacing
 - text-transform, text-indent, text-decoration, white-space
- ✓ font-family, font-style, font-weight, font-size, font-variant
- ✓ @font-face, @import (Google Fonts)
- ✓ text-stroke, writing-mode, text-orientation
- ✓ Vertical Text and RTL Support

6: Layout and Positioning

- ✓ position: static, relative, absolute, fixed, sticky
- ✓ z-index
- ✓ Float and Clear
- ✓ align, clear, and vertical-align
- ✓ display: flow-root
- ✓ object-fit, object-position
- ✓ resize

7: Flexbox Layout System

- ✓ display: flex, flex-direction, flex-wrap, flex-flow
- ✓ justify-content, align-items, align-content
- ✓ align-self, order
- ✓ flex-grow, flex-shrink, flex-basis
- ✓ Nested Flexbox
- ✓ Real-world Flexbox Projects

8: CSS Grid Layout

- ✓ Grid Containers:
 - display: grid, grid-template-rows, grid-template-columns
 - gap, row-gap, column-gap
- ✓ Grid Positioning:
 - grid-row-start/end, grid-column-start/end
- ✓ Grid Spanning:
 - Spanning multiple rows/columns
 - Naming grid lines and areas
- ✓ Implicit and Explicit Grids:
 - grid-auto-rows, grid-auto-columns, grid-auto-flow
- ✓ Alignment:
 - Items: align-items, justify-items, place-items
 - Self: align-self, justify-self, place-self
 - Tracks: align-content, justify-content
- ✓ Advanced:
 - minmax(), min-content, max-content, auto-fill, auto-fit
 - fit-content
 - Nested Grids and Overlapping Items

9: Visual Styling & UI Enhancements

- ✓ CSS Icons: Font Awesome, Material Icons
- ✓ Styling Links (a:link, a:hover, etc.)
- ✓ Styling Lists (list-style, custom bullets/images)
- ✓ Styling Tables (striped, bordered, hoverable)
- ✓ Forms:
 - Inputs, buttons, checkboxes, radio
 - accent-color, ::file-selector-button
- ✓ Navigation Bar Design
- ✓ Dropdown Menus
- ✓ Cards UI Component
- ✓ Scrollbar Styling:
 - scrollbar-color, scrollbar-width
 - ::-webkit-scrollbar, ::-webkit-scrollbar-thumb, ::-scrollbar-corner
- ✓ scroll-behavior: smooth

10: CSS Utilities & Special Properties

- ✓ CSS Units:
 - px, %, em, rem, vw, vh, vmin, vmax, ch, ex
- ✓ CSS Variables (--name, var())
- ✓ calc()
- ✓ @support
- ✓ !important and specificity handling
- ✓ currentColor, caret-color

11: Animation and Transition

- ✓ CSS Transitions:
 - transition-property, transition-duration, transition-timing-function, transition-delay
- ✓ CSS Animation:
 - @keyframes
 - animation-name, animation-duration, animation-iteration-count, animation-delay, animation-fill-mode
- ✓ 2D Transforms:
 - translate, rotate, scale, skew
- ✓ 3D Transforms:
 - rotateX, rotateY, perspective, transform-style, backface-visibility

12: Advanced CSS Features

- ✓ CSS Media Queries (Responsive Design)
- ✓ CSS Container Queries (@container)
- ✓ CSS Filters: blur(), brightness(), contrast()
- ✓ backdrop-filter
- ✓ clip-path (via [clippy](#))
- ✓ shape-outside, float, and custom shapes
- ✓ user-select
- ✓ box-decoration-break
- ✓ border-image
- ✓ counter-increment, counter-reset

13: Practical Web Design Projects

- **Mini Projects:**
 - ✓ Navigation Bar
 - ✓ Dropdown Menu
 - ✓ Responsive Cards
 - ✓ Form with Custom Styling
- **Capstone Projects:**
 - ✓ Responsive Portfolio Website
 - ✓ E-commerce Homepage with Grid & Flexbox
 - ✓ Blog Layout with Sidebars and Sticky Nav

14: Interview & Industry Preparation

- ✓ CSS Best Practices
- ✓ CSS Architecture (BEM, OOCSS, SMACSS)
- ✓ CSS Debugging (DevTools, box inspection)
- ✓ Performance Optimization
- ✓ Common Interview Questions & Exercises
- ✓ Mock Tests & Project Evaluations