

## **Programming Essentials and Introduction to the Web**

### **Learning Objectives**

- The genesis and evolution of the world wide web, its key stakeholders, and technologies
- Fundamentals of computer programming including key concepts, architecture and more
- The anatomy of a full stack application

### **Topics**

1. Fundamentals of Computers
2. The World Wide Web
3. People and Companies
4. Fundamentals of Computer Programming

## **Software Engineering Fundamentals and Lifecycle**

### **Learning Objectives**

- How to manage end-to-end software development lifecycle (SDLC) using both traditional and agile methodologies
- All about the SDLC - lifecycle, models and methodologies

### **Topics**

1. SDLC Introduction
2. Software Requirement and Specification
3. Software Architecture
4. Software Design
5. Software Implementation, Rollback, Cutover Strategies and Deployment
6. Software Testing
7. Traditional Software Development Models
8. New-Age Software Development Models
9. Deep Dive into Lean Methodology

## **Linux Essentials**

### **Learning Objectives**

- Working in a Linux (\*nix) environment

- Using key commands, workflows, and techniques

### **Topics**

1. Introduction
2. Linux Command Line
3. Files and Directories
4. Creating and Editing Files
5. User, Group and Permissions
6. Other Essential Features
7. Process

## **Git and GitHub Essentials**

### **Learning Objectives**

- Embrace the power of version control and code management
- Learn to manage code and assets using Git and GitHub

### **Topics**

1. Introduction to Version Control with Git
2. Git from the Command Line
3. Everyday Git Commands
4. Git for Collaboration

## **HTML5 and CSS3**

### **Learning Objectives**

- All about building responsive websites using HTML5 and CSS3
- Key HTML5 APIs and their use cases

### **Topics**

1. Introduction to Web Development
2. Introduction to HTML
3. Forms and Inputs
4. Introduction to CSS
5. Advanced CSS

6. Transitions and Animations
7. Responsive Web design
8. Build a Project

## **JavaScript**

### **Learning Objectives**

- JavaScript (ECMAScript 2020 and above)
- Writing asynchronous JavaScript code

### **Topics**

1. Introduction to JavaScript
2. The Absolute Fundamentals
3. Variables and Values
4. Conditional Execution
5. Functions Essentials and more
6. Loops
7. Working with Arrays
8. Working with Objects
9. All about Strings
10. Date and Time
11. Working with Web Pages
12. Level up with Functions and More
13. Object Oriented JavaScript
14. Asynchronous Programming
15. Working with Remote Data
16. Proxies, Maps, Sets & More
17. HTML5 APIs

## **Web Development using React**

### **Learning Objectives**

- How to build componentized JavaScript web applications and user interfaces including the Hooks API, server-side rendering, and writing testable components

- Global state management and transitions in a React application using Redux

### **Topics**

1. Introduction to React
2. Components
3. State and Props
4. Rendering Lists
5. Components Revisited
6. Building Forms
7. Render Props and Higher Order Components
8. Portals
9. Global and Shared Data
10. Hooks in Focus
11. Routing in a React App
12. Code Splitting
13. Isomorphic React
14. State Management using Redux
15. Testing Components
16. The React Ecosystem

## **Software Testing for JavaScript Applications**

### **Learning Objectives**

- Gain in-depth knowledge of software testing, its principles, testing phases, automation and lots more

### **Topics**

1. Fundamentals of Testing
2. Testing Principles
3. Test Phases and Testing Types
4. Introduction to Automation
5. Testing with Jest
6. E2E Testing with Jest & Puppeteer
7. E2E Testing with Cypress.io

## **Agile and Scrum**

### **Learning Objectives**

- Gain in-depth knowledge of Agile, APM framework, Scrum and its building blocks, Monitoring and tracking and more

### **Topics**

1. Background to Agile
2. Agile Basics
3. Business Inputs
4. Agile Variants
5. APM Framework
6. Introducing Scrum
7. Scrum Building Blocks
8. Agile Estimation
9. Agile Planning
10. Monitoring and Tracking
11. Agile Metrics and Agile Tools
12. Scaling Agile