



# Software Engineering Syllabus

Welcome to the Software Engineering course at Skillhob! This comprehensive program is designed to provide you with a strong foundation in software development and equip you with the necessary skills to build web applications. Throughout the course, you will learn industry-leading technologies and best practices to become a proficient software engineer.

## Part 1: Introduction to Software Engineering

- Software development life cycle
- Agile methodology
- Version control with Git

In this part, you will understand the fundamental concepts of software engineering and gain insights into the software development life cycle. You will also learn about Agile methodology, an iterative and collaborative approach widely used in the industry. Additionally, you will master Git, a popular version control system that allows for efficient collaboration and code management.

## Part 2: Web Development with Node.js

- Introduction to Node.js and npm
- Building web servers with Express.js
- Working with databases (MongoDB)
- RESTful API development

In this part, you will dive into web development using Node.js, a powerful JavaScript runtime environment. You will learn how to build web servers using Express.js and interact with databases using MongoDB. Additionally, you will explore RESTful API development, a key skill for building scalable and efficient web applications.

## Part 3: Frontend Development with HTML, CSS, and JavaScript

- HTML fundamentals
- CSS basics and styling techniques
- JavaScript essentials and DOM manipulation
- Responsive web design and mobile optimization

In this part, you will focus on frontend development, mastering HTML, CSS, and JavaScript. You will learn the essentials of HTML for structuring web pages, CSS for styling and layout, and JavaScript for adding interactivity and dynamic functionality. Additionally, you will discover responsive web design techniques to create mobile-friendly and accessible web applications.

## Part 4: Building Dynamic Web Applications with React

- Introduction to React and JSX
- Components and props
- State and lifecycle
- Handling events and form input
- React Router for navigation

In this part, you will explore React, a popular JavaScript library for building dynamic and interactive user interfaces. You will learn the basics of React, including JSX syntax, components, props, state management, and handling events. Additionally, you will use React Router for creating seamless navigation in your web applications.

## Part 5: Advanced Topics

- Authentication and authorization
- Testing and debugging
- Performance optimization
- Deployment strategies
- Project development and management

In this final part, you will delve into advanced topics to enhance your skills as a software engineer. You will learn about authentication and authorization techniques to secure your web applications. You will also discover effective testing and debugging strategies, performance optimization techniques, and deployment strategies for deploying your applications to production environments. Additionally, you will gain insights into project development and management principles to successfully lead software development projects.

By the end of this course, you will have acquired the knowledge and skills necessary to develop robust web applications and embark on a successful career in software engineering. You will be equipped with the latest tools and industry best practices, setting you apart as a competent and sought-after software engineer.

We're excited to have you on this learning journey! Each part of the course is carefully designed to provide you with practical skills and hands-on experience in software engineering. Get ready to build amazing web applications and take your coding skills to the next level!

If you have any questions or need further assistance, feel free to reach out to us:

- Email: [info@skillhob.com](mailto:info@skillhob.com)
- Phone: 07359619442

Happy learning!