

📌 Next.js Full Syllabus

1. Introduction to Next.js

- What is Next.js?
- Features and Benefits
- Comparing Next.js with React and other frameworks
- Project Setup with Create Next App

2. Pages and Routing

- Pages in Next.js
- File-based Routing

- Dynamic Routes
- Catch-all Routes
- Nested Routes
- Linking with next/link

3. Rendering Methods

- Client-Side Rendering (CSR)
- Server-Side Rendering (SSR)
- Static Site Generation (SSG)

- Incremental Static Regeneration (ISR)
- Choosing the right rendering strategy

4. API Routes

- Creating API Routes
- Handling Requests and Responses
- Using Middleware
- Deploying API Routes

5. Data Fetching Techniques

- getStaticProps
- getServerSideProps
- getStaticPaths
- SWR and React Query for Client-side fetching

6. Styling in Next.js

- CSS Modules
- Global CSS
- Tailwind CSS Integration
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Styled Components

7. Image Optimization

- Using the next/image component
- Image Layouts and Loaders
- Static and External Images

8. Authentication and Authorization

- Using NextAuth.js
- JWT and Session-based Auth
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Protecting Routes

9. Middleware and Edge Functions

- Introduction to Middleware
- Writing and Applying Middleware
- Edge API Routes

10. Deployment and Optimization

- Exporting and Deploying to Vercel
- Environment Variables
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Performance Optimization

- Bundle Analyzer

11. Advanced Concepts

- App Directory and Layouts (Next.js 13+)
- File and Folder Structure
- Metadata API
- Server Components vs Client Components

12. Testing and Debugging

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Using Jest with Next.js

- Writing Unit and Integration Tests
- Debugging Tools

13. Real-time and WebSockets

- Integrating Socket.io
- Real-time Chat or Notification System

14. Building Projects

- Blog with Markdown
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eCommerce Website

- Admin Dashboard
- Portfolio Website
- AI-powered Web App with Next.js