

KAUR'S CODING ACADEMY

React Native Full-Stack Mobile App Development

Module-wise Teacher Syllabus

A complete mobile app development course starting with frontend foundations, then moving to React Native, Expo, device features, Node.js, MongoDB, authentication, full-stack integration and app deployment preparation.

Course	Audience	Suggested Duration	Final Output
React Native Full-Stack Mobile App Development	College students, professionals and advanced teens	8 months / approx. 32 weeks	Full-stack mobile app with React Native frontend, Node.js backend, MongoDB database and deployment preparation

Teacher Note

Students should first become comfortable with HTML, CSS and JavaScript before React Native. Use a mobile-first project from Month 5 onward.

Learning Outcomes

- Build strong frontend foundations in HTML5, CSS3 and JavaScript ES6.
- Create React Native apps using Expo, JSX, components, props, state and hooks.
- Implement navigation, storage, forms, animations and device features.
- Build Node.js/Express backend APIs with MongoDB, Mongoose and JWT authentication.
- Connect mobile frontend with backend and prepare app/backend deployment.

Document Use

This PDF is made for teachers to plan classes module by module. Each module includes topic names, teaching points, class practice and revision work.

Complete Module Index

The table below gives a quick view of what will be taught in this course.

Module	Topic Name	Main Things Teacher Will Cover
1	Course Overview and Mobile App Foundation	Native vs hybrid apps, Mobile app development workflow, Frontend and backend roles, React Native overview, and more
2	HTML5 Core Concepts	HTML document anatomy, Semantic elements, Forms and input types, Validation attributes, and more
3	CSS3 and Modern Styling	CSS selectors, Box model, Positioning and display, Flexbox, and more
4	Bootstrap and Tailwind CSS Overview	Framework purpose, Bootstrap grid/components, Tailwind utility classes, Responsive utilities, and more
5	JavaScript ES6 Programming	let, const and var, Arrow functions, Template literals, Destructuring, and more
6	Asynchronous JavaScript and APIs	Promises, Async/await, Fetch/Axios, DOM interaction, and more
7	Frontend Integration Project	HTML/CSS/JS integration, Public API communication, Debugging browser tools, Optimization basics, and more
8	React Native Setup with Expo	Install Expo CLI/tools, Create React Native project, Project structure, Running app on emulator/device, and more
9	React Native Components, JSX, Props and State	View, Text, Image, ScrollView and Touchable components, JSX rules, Functional components, Props, and more
10	React Native Styling and Flexbox	StyleSheet API, Inline vs StyleSheet styling, Flexbox in React Native, Spacing and alignment, and more
11	Navigation in React Native	React Navigation setup, Stack navigation, Tab navigation, Drawer navigation, and more
12	Hooks and API Data in Mobile Apps	useState and useEffect, Fetching API data, Loading and error UI, FlatList rendering, and more
13	Context API and Local Storage	Context API, Global state, AsyncStorage, Offline data persistence, and more
14	Forms and Validation in React Native	TextInput handling, Controlled forms, Formik overview, Yup validation, and more
15	Device Features and UX Enhancements	Camera integration overview, Geolocation, Notifications, Permissions, and more
16	Backend Development with Node.js and Express	Node.js backend overview, Express server, REST APIs, GET/POST/PUT/DELETE, and more
17	MongoDB, Mongoose and Authentication	MongoDB database, Mongoose schemas and models, CRUD operations, bcrypt password hashing, and more
18	Full-Stack Mobile Integration	Connecting React Native with backend APIs, Base URL and environment variables, Login token storage, Authenticated requests, and more
19	Builds, Backend Deployment and App Deployment Planning	Production builds, Android build overview, iOS deployment process overview, Backend deployment to Render/Vercel, and more
20	Full-Stack Mobile Capstone	Capstone planning, Feature list and screen flow, Database schema, Authentication, and more

Detailed Module-wise Teaching Plan

Teachers should first explain the concept in simple language, then demonstrate code, then allow students to practice and customize the output.

Module 1: Course Overview and Mobile App Foundation

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Native vs hybrid apps - Mobile app development workflow - Frontend and backend roles - React Native overview - Full-stack mobile architecture	- Explain how mobile app talks to backend API - Compare native, hybrid and cross-platform approaches - Show sample app screens and architecture
Class Practice / Student Output	Homework / Revision
- Draw app architecture - Install required tools checklist - Discuss final app ideas	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 2: HTML5 Core Concepts

Topics to be Covered	What Teacher Will Explain / Demonstrate
- HTML document anatomy - Semantic elements - Forms and input types - Validation attributes - Multimedia content - Meta tags and accessibility	- Explain web structure as a foundation for mobile frontend thinking - Demonstrate semantic page - Show form validation
Class Practice / Student Output	Homework / Revision
- Create personal portfolio website - Add form and media - Use semantic sections	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 3: CSS3 and Modern Styling

Topics to be Covered	What Teacher Will Explain / Demonstrate
- CSS selectors - Box model - Positioning and display - Flexbox - CSS Grid - Colors, gradients and shadows - Transitions and animations	- Explain styling systems before mobile styling - Demonstrate responsive landing page - Show reusable UI sections
Class Practice / Student Output	Homework / Revision
- Design company landing page - Add hero banner and services section - Make design responsive	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 4: Bootstrap and Tailwind CSS Overview

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Framework purpose - Bootstrap grid/components - Tailwind utility classes - Responsive utilities - When to use custom CSS	- Show how frameworks speed up UI building - Demonstrate component customization - Compare utility and component-based styling
Class Practice / Student Output	Homework / Revision
- Build one landing page section using framework - Customize spacing/colors - Review best practices	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 5: JavaScript ES6 Programming

Topics to be Covered	What Teacher Will Explain / Demonstrate
- let, const and var - Arrow functions - Template literals - Destructuring - Spread/rest operators - Objects and arrays - map, filter and reduce	- Explain ES6 features used heavily in React Native - Demonstrate array methods on product data - Show modern function syntax
Class Practice / Student Output	Homework / Revision
- Build product data list - Use map/filter/reduce - Refactor old syntax to ES6	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 6: Asynchronous JavaScript and APIs

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Promises - Async/await - Fetch/Axios - DOM interaction - Local storage - Public API data handling	- Explain API calls before mobile API integration - Demonstrate fetching public API data - Show loading and error states
Class Practice / Student Output	Homework / Revision
- Create interactive product catalog - Fetch API data - Save selected data locally	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 7: Frontend Integration Project

Topics to be Covered	What Teacher Will Explain / Demonstrate
- HTML/CSS/JS integration - Public API communication - Debugging browser tools - Optimization basics - Git basics - E-commerce frontend prototype	- Guide students to combine frontend skills - Demonstrate cart functionality logic - Show basic Git commits
Class Practice / Student Output	Homework / Revision
- Build e-commerce frontend prototype - Add product listings and cart - Make it responsive	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 8: React Native Setup with Expo

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Install Expo CLI/tools - Create React Native project - Project structure - Running app on emulator/device - Expo Go workflow	- Explain Expo development workflow - Demonstrate first screen - Show reload and debugging process
Class Practice / Student Output	Homework / Revision
- Create first React Native app - Run on device/emulator - Edit first screen text/style	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 9: React Native Components, JSX, Props and State

Topics to be Covered	What Teacher Will Explain / Demonstrate
- View, Text, Image, ScrollView and Touchable components - JSX rules - Functional components - Props - useState - Reusable UI blocks	- Explain React Native components vs HTML tags - Demonstrate card component - Show state-driven UI update
Class Practice / Student Output	Homework / Revision
- Build profile card screen - Create reusable button/card - Add counter or toggle state	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 10: React Native Styling and Flexbox

Topics to be Covered	What Teacher Will Explain / Demonstrate
- StyleSheet API - Inline vs StyleSheet styling - Flexbox in React Native - Spacing and alignment - Responsive screen design - Theme basics	- Explain no CSS files in basic React Native styling - Demonstrate Flexbox layout - Show responsive cards and lists
Class Practice / Student Output	Homework / Revision
- Build mobile home screen - Style header, cards and buttons - Test on different screen sizes	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 11: Navigation in React Native

Topics to be Covered	What Teacher Will Explain / Demonstrate
- React Navigation setup - Stack navigation - Tab navigation - Drawer navigation - Passing params - Screen organization	- Explain navigation flow between screens - Demonstrate stack and tab navigators - Show data passing to detail screen
Class Practice / Student Output	Homework / Revision
- Create multi-screen app - Add tab navigation - Build list-to-detail navigation	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 12: Hooks and API Data in Mobile Apps

Topics to be Covered	What Teacher Will Explain / Demonstrate
- useState and useEffect - Fetching API data - Loading and error UI - FlatList rendering - Pull-to-refresh overview	- Demonstrate API call in mobile app - Show FlatList performance basics - Explain mobile loading states
Class Practice / Student Output	Homework / Revision
- Build mobile news reader app - Fetch news/API data - Navigate to detail screen	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 13: Context API and Local Storage

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Context API - Global state - AsyncStorage - Offline data persistence - Theme toggling - Login state storage	- Explain global state in mobile app - Demonstrate saving data to AsyncStorage - Show theme toggle with Context
Class Practice / Student Output	Homework / Revision
- Save user preferences - Build offline notes/favorites feature - Add theme toggle	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 14: Forms and Validation in React Native

Topics to be Covered	What Teacher Will Explain / Demonstrate
- TextInput handling - Controlled forms - Formik overview - Yup validation - Error messages - Keyboard handling	- Demonstrate mobile form patterns - Show validation with Formik/Yup - Explain user-friendly error messages
Class Practice / Student Output	Homework / Revision
- Build signup/login form - Add validation rules - Show success/error feedback	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 15: Device Features and UX Enhancements

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Camera integration overview - Geolocation - Notifications - Permissions - Animations with Animated/Reanimated - UX improvements	- Explain permission-based device features - Demonstrate one device feature where environment allows - Show simple animated interaction
Class Practice / Student Output	Homework / Revision
- Add location/camera placeholder flow - Create animation for card/button - Improve app UX	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 16: Backend Development with Node.js and Express

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Node.js backend overview - Express server - REST APIs - GET/POST/PUT/DELETE - Middleware - Postman testing	- Explain backend role in mobile apps - Demonstrate creating API endpoints - Show testing API before mobile integration
Class Practice / Student Output	Homework / Revision
- Create task API backend - Test endpoints in Postman - Prepare API routes for mobile app	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 17: MongoDB, Mongoose and Authentication

Topics to be Covered	What Teacher Will Explain / Demonstrate
- MongoDB database - Mongoose schemas and models - CRUD operations - bcrypt password hashing - JWT authentication - Authorization basics	- Explain data model for mobile app - Demonstrate user registration/login backend - Show token verification
Class Practice / Student Output	Homework / Revision
- Build user auth APIs - Create task/product model - Test protected route	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 18: Full-Stack Mobile Integration

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Connecting React Native with backend APIs - Base URL and environment variables - Login token storage - Authenticated requests - Context/Redux integration	- Demonstrate mobile app calling backend - Show token storage and API headers - Explain environment configuration
Class Practice / Student Output	Homework / Revision
- Connect login screen to backend - Fetch user tasks/data - Handle loading/errors	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 19: Builds, Backend Deployment and App Deployment Planning

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Production builds - Android build overview - iOS deployment process overview - Backend deployment to Render/Vercel - Git-based collaboration - Common deployment issues	- Explain app store deployment requirements at a high level - Demonstrate backend deployment workflow - Show build configuration checklist
Class Practice / Student Output	Homework / Revision
- Deploy backend API - Prepare mobile app build checklist - Update README and screenshots	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Module 20: Full-Stack Mobile Capstone

Topics to be Covered	What Teacher Will Explain / Demonstrate
- Capstone planning - Feature list and screen flow - Database schema - Authentication - Offline storage - API integration - Final demo and assessment	- Guide students milestone by milestone - Review UI, backend and integration - Train students to present full-stack architecture
Class Practice / Student Output	Homework / Revision
- Build fitness tracker/news/task/food-order app - Submit GitHub and screenshots - Present final app demo	- Revise the class notes and complete a small improvement in the class project. - Write down two doubts or two new things learned in the module.

Final Review and Certification Checklist

- Student can explain the main concepts in simple words.
- Student has completed the required practice tasks and mini projects.
- Student can run the project, fix common errors and present the work confidently.
- For advanced courses, student should submit GitHub repository, screenshots and deployment link where possible.