COURSE TITLE	**CROSS PLATFORM APP DEVELOPMENT-II**
COURSE CODE	**05MB0303**
COURSE CREDITS	**4**

Objective:

1 Learn how React Native works, its core principles, and the role of Node.js, Git, and NPM in mobile development.

2 Install and configure essential tools such as Visual Studio Code, Node.js, Git, ESLint, and NPM to create React Native applications.

3 Utilize JSX, Views, State, Props, and various UI components like Buttons, TextInput, Modals, Sliders, and Date Pickers to build dynamic mobile UIs.

4 Work with FlatList, SectionList, ScrollView, and animations like fade-in/out, transformations, and WebView to enhance app interactivity.

5 Implement Stack Navigator, Tab Bar Navigator (Top/Bottom), Card Views, and work with Fetch API and Async Storage for efficient data management.

6 Utilize platform-specific functionalities such as Status Bar, Vibration, Share API (Text, WhatsApp), and Phone Call integration for a seamless user experience.

Course Outcomes: After completion of this course, student will be able to:

1 Explain how React Native works, its requirements, and how Node.js and Git function in the development environment.

2 Install and configure essential tools such as Visual Studio Code, Node.js, Git, ESLint, and NPM for efficient React Native development.

3 Utilize JSX, components, state, props, and styling techniques (inline, internal) to create dynamic and responsive UI elements like Buttons, Sliders, Modals, Pickers, and more.

4 Work with lists (FlatList, SectionList), ScrollView, WebView, and apply animations such as fade-in/out, transformations, and rotations to enhance the user experience.

5 Implement Stack Navigator, Tab Navigator (Top & Bottom), Material Design navigation, and manage asynchronous data using AsyncStorage and API fetching.

6 Integrate platform-specific features like Share API, WhatsApp sharing, making phone calls, vibration, and status bar control for a complete mobile experience.

Pre-requisite of course: Basic Knowledge of Programming

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	4	50	30	20	50	50

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Contents : Unit	Topics	Contact Hours
1	**Introduction React Native** How works React Native, Requirement for the React Native, Installation, What is Node js,How works node js, How works git,Environment Setup: Visual Studio Code, Node js, Git, Eslint, Npm, User Interface,Introduction to JSX, the MVC model, UI Controls, Variable, Variable with function, Views, State, Props, Inline style, Internal style, Height and width, Button, Alert, Layout with flex, Positioning Element with flex, Slider, Switch, Image, Modal, Date picker, Text, Text Input, Image, Touchable, Switch, Slider, Modal, Pressable, Picker, Activity Indicator	15
2	**User Interface-2** Alert, Simple Alert, Two Option Alert, List, Flat List, Section List, Scroll View, Animation, Fade in/out, Transforms, Rotate/flip, WebView, Status Bar, Vibration., Navigation,Card View, Navigation, Stack Navigator, Tab Bar Navigator,Material Design Tab Bar-Bottom,Material Design Tab Bar - Top,Share API (text), Text Share, WhatsApp, Make Phone Calls, Async Storage, Fetch the Data from Web APIs	15
Total Hours		**30**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Unit-1** Setup React Native Development Environment – Install Node.js, Git, and Visual Studio Code, and set up a new React Native project,Understand Node.js & Git – Execute basic Node.js commands and learn Git version control operations., Create a Simple JSX-Based UI – Build a basic screen using JSX and the MVC model,Implement Variables & Functions in JSX – Use variables, state, and props in functional and class components. 5. Style Components Using Inline & Internal Styles – Apply different styling techniques in React Native., Implement a Button & Alert System – Create buttons that trigger different types of alerts,Build a Layout with Flexbox – Design a responsive layout using flexbox,Position Elements Using Flexbox – Arrange UI elements dynamically with justifyContent and alignItems,Implement a Slider & Switch – Use built-in Slider and Switch components for UI interactions,Create a Modal & Date Picker – Design pop-up modals and use DatePicker for date selection., Display Images with Different Sources – Load images from local and remote source,Use Touchable Components – Implement TouchableOpacity, TouchableHighlight, and TouchableWithoutFeedback,Build a Dynamic List with FlatList – Fetch and display data using FlatList,Create a Section List – Organize data into sections using SectionList,Implement ScrollView – Create a scrollable UI layout,Add Basic Animations – Perform fade-in/out animations using Animated API.	30

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
2	**Unit-2** Implement Rotate & Flip Transformations – Rotate or flip elements using animated transforms,Embed Web Content using WebView – Load a website inside a React Native app,Control Status Bar Appearance – Customize the look of the device's status bar,Use Vibration API – Trigger device vibration on button press,Implement Stack Navigator – Create a multi-screen navigation system using react-navigation., Use Tab Bar Navigation (Bottom & Top) – Implement material design tab navigation,Build a Card View with Navigation – Display cards and navigate between screens,Customize Material Design Tab Bars – Apply styling to bottom and top tab bars,Implement Text Sharing with Share API – Share text using the device's built-in share options.,Share Text via WhatsApp – Integrate WhatsApp sharing functionality., Make Phone Calls from the App – Use React Native's Linking API to initiate calls,Store Data Using AsyncStorage – Save and retrieve local data using AsyncStorage,Fetch Data from a Web API – Retrieve and display JSON data from an external API,Submit Data to a Web API – Send user input data to a server using a POST request,Debug a React Native App Using ESLint – Identify and fix code errors using ESLint,Develop a Mini-Project – Build a small functional app incorporating UI, navigation, and API calls.	30
Total Hours		**60**

Textbook :

1 Learning React Native: Building Native Mobile Apps with JavaScript, Bonnie Eisenman, O'Reilly Media, 2017

2 React Native in Action, Nader Dabit , Manning Publications, 2019

References:

1 Mastering React Native, Mastering React Native, Eric Masiello and Jacob Friedmann , Packt Publishing, 2017

2 React Native Cookbook: Bringing the Web to Native Platforms , React Native Cookbook: Bringing the Web to Native Platforms , Dan Ward, Packt Publishing, 2019

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
10.00	20.00	25.00	25.00	10.00	10.00

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Instructional Method:

1 PPT,BOARD WORK,PRACTICALS

Supplementary Resources:

1 https://www.designveloper.com/blog/react-native-courses/

2 https://www.reddit.com/r/reactnative/comments/tmc5an/whats_the_best_react_native_course_to_take/

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