

# Savitribai Phule Pune University, Pune

*Faculty of Commerce and Management*

Master of Computer Applications (MCA)

Programme Curriculum ( Sem. III & IV)  
(2020-2022)

## Semester III

Course Code: IT-31

Course Name: Mobile Application Development

| Credit Scheme |           |        | Evaluation Scheme |           |          |          |       |
|---------------|-----------|--------|-------------------|-----------|----------|----------|-------|
| Lecture       | Practical | Credit | Internal          |           |          | External | Total |
|               |           |        | Written           | Practical | Tutorial |          |       |
| 3 Hrs./Week   | -         | 3      | 25                | -         | -        | 50       | 75    |

### Course Description:

#### *Course Objectives:*

1. To understand the different mobile application Architectures.
2. To understand different types of widgets like buttons, views, layout etc.
3. To know the ways of application handling like intents, adapters, Notifications, Web Services and Web View.
4. To learn and know about data storing, retrieval and sharing in android.
5. To explore cross platform mobile application development framework, React Native and Flutter.

#### *Course Outcomes:*

Student will be able to

- CO1: Understand Various Mobile Application Architectures. (Understand)
- CO2: Apply different types of widgets and Layouts. (Apply)
- CO3: Describe Web Services and Web Views in mobile applications. (Understand)
- CO4: Implement data storing and retrieval methods in android. (Apply)
- CO5: Demonstrate Hybrid Mobile App Framework. (Apply)

#### *Course Structure:*

| Unit No. | Topics Details   | Weightage in % | No of Sessions |
|----------|--|----------------|----------------|
| 1        | 1. Mobile application development architectures<br>1.1. Introduction to Mobile Application technologies<br>1.2. Android Architecture<br>1.3. IOS Architecture<br>1.4. Windows Architecture<br>1.5. Hybrid Architecture           | 14             | 5              |
| 2        | 2. Creating Android Application<br>2.1. Creating Android project<br>2.2. Project Structure<br>2.3. Activity and Activity Life Cycle<br>2.4. Fragment and Fragment Life Cycle<br>2.5 Views and View groups                        | 20             | 10             |
| 3        | 3. Interactivity Tools<br>3.1. Intents and Filters<br>3.2. Adapters<br>3.3. Dialogs<br>3.4. Menus<br>3.5. Notifications  | 20             | 10             |
| 4        | 4. Interaction with Database<br>4.1. Introduction to Database (SQLite and Firebase)<br>4.2. Cursors and content values<br>4.3. CRUD Operations   | 16             | 6              |
| 5        | 5. Web Services and Web View<br>5.1. Introduction to web services<br>5.2. Receiving HTTP Response (JSON, XML)<br>5.3. Parsing JSON and XML<br>5.4. Introduction to Web View  | 12             | 5              |
| 6        | 6. React Native<br>6.1. Introduction<br>6.2. Environment Setup<br>6.3. JavaScript ES6 Overview<br>6.4. Create React Native App<br>6.5. React Native Alert API<br>6.6. React Native Geolocation API<br>6.7. Third Party Libraries | 10             | 5              |
| 7        | 7. Introduction Flutter<br>7.1. Overview of Flutter<br>7.2. Installation of Flutter<br>7.3. Architecture of Flutter<br>7.4. Introduction to Dart Programming<br>7.5. Demonstration of Simple application                         | 8              | 4              |
| Total:   |  | <b>100</b>     | <b>45</b>      |

## *Course References:*

### Reference Books:

1. Professional Android 4 Application Development by Meier, Reto - Wiley Education
2. Beginning Android 4 Application Development by Lee, Wei- Meng - Wiley Education
3. Android application Development: in 24 hours by Delessio, Carmen; Darcey, Lauren; Conder, Shane - Pearson Education
4. Android by Dixit, Prasanna Kumar - Vikas Publishing House
5. Android Studio Development Essentials Book by Neil Smith
6. Beginning App Development with Flutter by Rap Payne
7. Flutter in Action by Eric Windmill
8. REACT NATIVE IN ACTION DEVELOPING IOS AND ANDROID APPS WITH JAVASCRIPT BOOK BY NADER DABIT

### Web Reference:

1. <https://developer.android.com>
2. <https://facebook.github.io/react-native/docs/tutorial>
3. <https://flutter.dev/docs/get-started/install>