

# **Elective Name “Mobile Apps Development”**

## **Course contents**

### **Unit 1: Getting started with Mobility (6 hrs.)**

Mobility landscape, Mobile platforms, Mobile apps development, Overview of Android platform, setting up the mobile app development environment along with an emulator, a case study on Mobile app development

### **Unit II: Building blocks of mobile apps (15 hrs.)**

App user interface designing – mobile UI resources (Layout, UI elements, Drawable, Menu), Activity- states and life cycle, interaction amongst activities. App functionality beyond user interface - Threads, Async task, Services – states and life cycle, Notifications, Broadcast receivers, Telephony and SMS APIs  
Native data handling – on-device file I/O, shared preferences, mobile databases such as SQLite, and enterprise data access (via Internet/Intranet)

### **Unit III: Sprucing up mobile apps (8 hrs.)**

Graphics and animation – custom views, canvas, animation APIs, multimedia – audio/video playback and record, location awareness, and native hardware access (sensors such as accelerometer and gyroscope)

### **Unit IV: Testing mobile apps (5 hrs.)**

Debugging mobile apps, White box testing, Black box testing, and test automation of mobile apps, JUnit for Android, Robotium, MonkeyTalk

### **Unit V: Taking apps to Market (2 hrs.)**

Versioning, signing and packaging mobile apps, distributing apps on mobile market place

## **Practical/Project work**

Students should implement (and learn to use the tools to accomplish this task) the following during Practical hours: (illustrative only)

1. Understand the app idea and design user interface/wireframes of mobile app
2. Set up the mobile app development environment
3. Develop and debug mobile app components – User interface, services, notifications, broadcast receivers, data components
4. Using emulator to deploy and run mobile apps
5. Testing mobile app - unit testing, black box testing and test automation

## Tutorial/Optional Assignments

The assignments for course could include the following. Relevant lab exercises to get exposure to various tools such as Eclipse, Android SDK, Emulator, DDMS, Robotium, and MonkeyTalk.

<b>Sr. No.</b>	<b>Tool Name</b>	<b>Usage Area / Scope</b>
1	Eclipse	IDE
2	Android SDK	Development
3	Emulator	Deployment
4	DDMS	Debugging and Monitoring
5	MonkeyTalk	Test automation and black box testing
6	Robotium	White box and black box Testing