

Course Name: Mobile Application Development

Course Code: TMI 402

Program Name: Master of Science in Information Technology
(M.Sc. IT)

1 Contact Hours: 45 **L** 3 **T** 0 **P** 2

2 Examination Duration(Hrs): **Theory** 0 3 **Practical** 0 0

3 Relative Weightage: **CWE:** 25 **MTE:** 25 **ETE:** 50

4 Credits: 0 3

5 Semester: ☐ ☒ ☐
Autumn Spring Both

6 Pre-Requisite: Knowledge of 'Java' language

7 Subject Area: Computer Science

8 Objective: To familiarize students with the App designing and power of Android Programming.

9 Course Outcome:

CO 1 Apply the development tools in the Android development environment.

CO 2 Create UI-rich apps using all the major UI components and analyze the life cycles of Activities, Fragments and Intent.

CO 3 Design UI-rich apps using all the widgets and multimedia components that will show the power of Android Programming like Graphics, Sensors etc.

CO 4 Design applications to implement the concept of files and SQLite Database.

CO 5 Analyze the concept of web services, Telephony, and instant messaging and utilize the Google map to add location to their apps.

CO 6 Analyze and prepare their apps for distribution on the Google Play Store.

10 Details of the Course:

Unit No.	CONTENT	CONTACT HOURS
1	Introduction to Android: Introduction of Android, OHA, Features of Android, History, versions, Android Architecture, Android core building blocks, Android Emulator, Configuring Android Development Environment: Downloading and installing JDK and Net beans, Downloading and installing Android Studio. Creating First Android App: Creating new Android Project, Creating AVD.	10

	Android project files: Android Manifest.xml, MainActivity.java, R.java, activity_main.xml etc. Android Tools: DVM, AVD Manager, Android SDK Manager, Android Emulator, DDMS, resource folder. App Components: Activity, Service, Broadcast Receiver, and Content Provider.	
2	Fragment: Introduction, needs of fragment and Lifecycle of Fragment. Intent: What is Intent, Why Intent? Types of Intent. Layouts: Linear, Relative, Tabular, Frame, and Absolute. Views: Button, Text View, Edit Text, Radio Button, Image View, Toast, Adapter, Spinner, List View, Grid View. Adaptor: Adaptor and Adaptor View. Android Menu: Option menu, context menu, and popup menu. Events: Event Handling, and Listeners.	10
3	Multimedia: Playing audio, video file and Camera. Graphics: Android Graphics and Animation Sensors: How sensors work, category of sensors, sensor framework, and classes and interfaces used to access sensor. Bluetooth: Bluetooth Adapter class, Paired devices, Enable/Disable devices. Maps & Location: What is Google map, Types of Google map, Methods of Google map.	9
4	Content Provider: How Content Provider works, steps to create content provider, URI, CRUD. Files: Internal and External storage. Shared Preference. Storage: Introduction to SQLite Database, SQLiteOpenHelper class, and Cursor.	8
5	Android Web Services: What is web service, Soap and Restful web service? P2P Communication: Introduction of Instant Messaging. Introduction of Telephony. Versioning the app: Setting the version publishing the app on Google play, Monitorizing the Android app.	8
	TOTAL	45

11 Suggested Books:

Sl. NO.	NAME OF AUTHERS/BOOKS/PUBLISHERS	YEAR OF PUBLICATION
1	Programming Android: Expert Android application Development and professional Android by Reto Meier.	2014
2	Android Black Book, programming android by Zigurd Mednieks, Laird Dormin, G. Blake Meike & Masumi Nakamura.	2015
3	Android Application Development, Black Book by Pradeep Kothari	2014

Code	Title	Description
TMC 402(1)	Mobile Application Design and Development	<p>Unit I: Topic Added: App Components: Activity, Service, Broadcast Receiver, and Content Provider.</p> <p>Unit II: Topic Added: Adaptor: Adaptor and Adaptor View. Android Menu: Option menu, context menu, and popup menu. Events: Event Handling, and Listeners.</p> <p>Topic Removed: App Components: Activity, Service, Broadcast Receiver, and Content Provider.</p> <p>Unit III: Topic Added: Bluetooth: Bluetooth Adapter class, Paired devices, Enable/Disable devices. Maps & Location: What is Google map, Types of Google map, Methods of Google map?</p> <p>Topic Removed: Android Menu: Option menu, context menu, and popup menu. Events: Event Handling, and Listeners.</p> <p>Unit III: Topic Added: Android Web Services: What is web service, Soap and Restful web service? P2P Communication: Introduction of Instant Messaging. Introduction of Telephony.</p> <p>Topic Removed: Bluetooth: Bluetooth Adapter class, Paired devices, Enable/Disable devices.</p> <p>Thread: Introduction, category and AsyncTask.</p> <p>Maps & Location: What is Google map, Types of Google map, Methods of Google map, Need of Callback methods, and Geocoder class?</p>

