



# ATMIYA UNIVERSITY

## FACULTY OF SCIENCE

### DEPARTMENT OF COMPUTER APPLICATIONS

#### MASTER OF COMPUTER APPLICATIONS

Course Code	Course Name	Credits
20MCACC302	Mobile App Development using Android in Kotlin	03

#### ❖ Aim of the Course:

The aim of this course is to introduce to the students able to understand the process of developing

- 1 application for the mobile and able to create the mobile applications on android platform in kotlin which useful to the people in real life.

#### ❖ Course Overview and Context:

- 1 The course is divided into five units. The first units deal with basic introduction of the Kotlin Programming. Unit-2 designed to learn concepts of User Interface in Android and basics of android. Unit-3 is designed to learn the concept of storage like content provider, database and file handling. Unit-4 is designed to enhance the user experience, maps and location-based services. Unit-5 is designed to learn the concepts of audio, video, camera and telephony and how to publish app on google play.

#### ❖ Course Outcomes:

Sr #	Course Outcome	Cognitive Level
1	To <b>illustrate</b> and <b>explain</b> basic concepts of KOTLIN programming	Understand
2	To <b>understand</b> the architecture of android and user interface.	Understand
3	To <b>translate</b> the real-life situations in android programming form and <b>solve</b> them by storing data on database.	Understand, Apply
4	To <b>translate</b> the real-life situations in android programming form and <b>solve</b> them by providing concepts of Maps, Location, UI-UX and test and detect that it is optimized applications.	Understand, Apply
5	To <b>understand</b> the real-life situation in android programming and <b>solve</b> it using concepts of Audio, Video, Camera, Telephony and make it live for the other people.	Understand, Apply

#### ❖ Content of the Course:

##### Unit-1 Introduction to KOTLIN Programming

- Basics of Kotlin, Operations and Priorities, Decision Making
- Loop Control, Data Structures(Collections), Functions
- Object Oriented Programming: Inheritance, abstract, interface, super and this, visibility modifiers.

##### Unit-2 Introduction to Android and User Interface

- ANDROID SDK Features, Introduction to Development Features
- Developing for ANDROID, developing for mobile and embedded devices, ANDROID development tools
- Basics of an ANDROID application, introduction to manifest, externalizing resources, application lifecycle, ANDROID activities
- Widgets: Button, TextView, ImageView, ProgressBar, ListView, EditText, Calendar, DateTime etc
- Working with Intent



#### Unit-3 File, Preferences, Database and Content Provider

- Creating, saving and retrieving shares preferences
- Including static files as resources, working with the file system
- Introducing ANDROID databases
- Content values and cursors
- Working with SQLite databases
- Creating content providers
- Using content providers
- Native ANDROID Content providers

#### Unit-4 Enhancing User Experience, Maps and Location Based Services

- Introduction and addition of action bar
- Menus and dialogs, drawable and gradients
- Using location-based services
- Selecting a location provider,
- Finding your current location, and
- Creating map-based activities.
- Introduction of recycle view and card view.

#### Unit-5 Audio, Video, Camera, Telephony & SMS, and Monetizing the applications

- Playing audio and video, manipulating raw audio, using camera to take pictures, recording video, adding media to media store
- Hardware support for telephony, using telephony, introducing SMS and MMS
- Signing and publishing applications, introduction to monetizing applications

#### ❖ Learning Resources:

Sr #	Textbook   References   Internet Links
1	Learn Android Studio 3 with Kotlin – Teg Hagos – Apress – 2019
2	Headfirst Kotlin, A Brain Friendly Guide – Dawn Griffiths, David Griffiths – Orilly – 2019
3	Learn Kotlin for Android Development – Peter Spath – Apress – 2019
4	Beginning Android Development With Kotlin - Greg Lim (Author) – March – 2020

#### ❖ Assignments :

Sr #	Description	Available From (Date)	Submission Date
1	Introduction to Kotlin and Basics of Android	After 3 Weeks	Within 7 Days
2	Database, Storage and Enhancing user experience in Android	After 6 Weeks	Within 7 Days
3	Map, Location Based Services, Recyclerview, CardView	After 9 Weeks	Within 7 Days
4	Audio, Video, Camera, Telephony & Monetization	After 12 Weeks	Within 7 Days