# MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
*(A constituent unit of MAHE, Manipal)*

## COURSE PLAN

| | | |
|---|---|---|
| **School** | : | School of Computer Engineering |
| **Course Name & code** | : | MOBILE APPLICATIONS DEVELOPMENT & MCA 5142 |
| **Semester & branch** | : | III & MCA |
| **Name of the faculty** | : | SSS Shameem, Shreenidhi H Bhat, Tojo Thomas, Vidya Rao |

**No of contact hours/week:**

| L | T | P | C |
|---|---|---|---|
| Lecture(L) | 1 | 3 | 2 |

## Course Outcomes (COs)

| | ***At the end of this course, the student should be able to:*** | **No. of Contact Hours** | **Marks** |
|---|---|---|---|
| CO1: | Understands the basic technologies used by the Android platform, familiarize with the structure of an Android application project and use the necessary tools for Android application project. | 09 | 25 |
| CO2: | Design and develop user Interfaces for the Android platform. | 07 | 20 |
| CO3: | Apply Java programming concepts to Android application development. | 08 | 25 |
| CO4: | Demonstrate the ability to handle the client server management using Android application and running through mobile devices. | 12 | 30 |
| CO5: | Click or tap here to enter text. | Hrs. | Marks |
| | **Total** | 36 | 100 |

## Assessment Plan

| | |
|---|---|
| **1. Continuous Evaluation** | **20%**<br>✓ **Total 20 marks**<br>✓ **5 marks - write-up of the experiments,**<br>✓ **7.5 marks - experiment execution check,**<br>✓ **7.5 marks - Quiz** |
| **2. Mid Term Evaluation** | **20%**<br>✓ **Total 20 marks**<br>✓ **5 marks - write-up of experiment & execution check**<br>✓ **15 marks - Test** |
| **3. Mini Project Evaluation** | **20%**<br>✓ **Total 20 marks** |
| **4. Lab Examination** | **40%**<br>✓ **Total 40 marks**<br>✓ **Examination of 2 hours duration** |

## Lesson Plan

| Lab No. | Topics | Course Outcome Addressed |
|---|---|---|
| **L1** | 1. Create a **Hello world** android application using android studio and compile it using android SDK. Run it on both Android Virtual Device (AVD) and your own mobile.<br>2. Create an android application to display the welcome message as a **toast**.<br>a) Default toast display<br>b) Toast on button click<br>3. Create an android application and understand the application **life-cycle** in different scenarios. | CO1 |
| **L2** | 4. Create an android application to input two numbers and display the sum on button click.<br>a) Display result in toast & textview.<br>b) Validate the sum action.<br>c) Provide Reset button with its functionality.<br>d) Customize the app name, and icon.<br>e) Customize the UI component with color, font properties.<br>f) Make use of String & Color resource files.<br>g) Apply different layouts for this; Relative, Constraint and Linear. | CO1, CO2 |

| | | |
|---|---|---|
| **L3** | 5. Create an android application that accepts basic user info and displays the same.<br>a) Make use of TextView, EditView, Button, RadioButton, CheckBox, Image, nested layouts etc.<br>b) Display suitable toast for any radiobutton/checkbox selection.<br><br>6. Create simple application of calculator (GUI). | CO1, CO2 |
| **L4** | 7. For the Project in L3/E5; add the following features;<br>a) Display the info in DIFFERENT page/activity.<br>b) Enable 'back' button to return to Home page.<br>c) Use toggle button to 'Reset' input area.<br><br>8. Create a Master App by integrating ALL previous programs into one single App. Provide suitable options to navigate between activities. | CO2, CO3 |
| **L5** | 9. Create an android application to display a list of bank names in a spinner and when you select the particular bank name, the logo and IFSC-code of the selected bank should be displayed using custom toast.<br><br>10. Create an android application to depict the option menu with following features:<br>a) Toast menu option to display a Toast message.<br>b) Exit menu to close the App.<br>*c)* President menu should open a new activity with two fragments. First fragment should contain a listview of all presidents of Independent India.<br>*d)* When you select any president's name, corresponding details should be visible in the second fragment.<br>*e)* Details should include: *Name, Presidential period, Qualification, Professional experience, Lifetime, Special Achievements, & Image, etc.* | CO2, CO3 |
| **L6** | 11. For the Project in L5/E10; add the following features:<br>a) Gallery menu should open an image gallery of all presidents' using gridview.<br>b) Display the selected grid image in full screen mode.<br><br>12. Create android applications to demonstrate the use of following;<br>a) Date picker and Time picker.<br>b) Floating Action Button.<br>c) Progress bar. | CO2, CO3 |

| | | |
|---|---|---|
| **L7** | 13. Create an android application to implement the following:<br>a) Create a registration page of fields Username, password, email and phone number.<br>b) Create a database with name “myDb” and table with name "register".<br>c) Store the data from registration form into the "register" table.<br>d) Display the registered details using the list view.<br>e) Enable search feature to display the result for specific student id.<br>f) Enable the user to edit or remove the details. | CO3, CO4 |
| **L8** | 14. Create an android application with THREE activities. First activity should have two buttons such as Log in and Registration.<br>a) By clicking “Log in” button, it should bring user to the Log in screen.<br>b) By clicking “Registration”, it should bring user to registration page.<br>c) Create a registration page of fields Username, password, email, phone number, course, gender, age, etc.<br>d) Apply necessary Validations to it:<br>• Make all the fields as mandatory<br>• Password must contain minimum of 6 characters, upper, lower, number.<br>• Phone should accept only 10 numbers<br>• Email should follow the standard format ‘@xyz.COM/EDU/IN/ORG’<br>e) Use shared preferences that stores user name & password; and retrieve for login. | CO3, CO4 |
| **L9** | 15. Create android applications to demonstrate the use of following<br>Notification, Alert message, Scrolling, Cardview, Style & Theme. | CO2, CO3 |
| **L10** | Mini Project | CO1-CO4 |
| **L11** | Mini Project Evaluation | CO1-CO4 |
| **L12** | End Sem Evaluation | CO1-CO4 |

## Tutorial Plan

| Tutorial No. | Topics |
|---|---|
| **T1** | Introduction to Android, Architecture, Toast, Life-cycle. |
| **T2** | Android Components, Layout, Mini Project details. |
| **T3** | Android Components: TextView, EditView, Image, RadioButton, CheckBox. |
| **T4** | Intent, UI Components: Toggle Button, Multiple Activity. |
| **T5** | UI Components: Spinner, Custom Toast, Menu, Sub-Menu, Listview. |
| **T6** | Fragment, Gallery, Date picker, Time picker, Floating Action Button, Progress bar. |
| **T7** | Database. |
| **T8** | Data validation, Shared preference. |
| **T9** | Notification, Alert message, Scrolling, Card, Theme. |
| **T10** | Mini Project Doubt session |
| **T11** | Mini Project Evaluation |
| **T12** | Revision & Doubt session |

**References:**


| | |
|---|---|
| 1. | Android Community Experts, Android Cookbook, O'Reilly Media, Inc., First Edition, 2011 |
| 2. | J. Paul Cardle, Android App Development in Android Studio, Manchester Academic Publishers |
| 3. | Dawn Griffiths & David Griffiths, Head First Android Development - A Brain-Friendly Guide, O'Reilly Media, Inc., Second Edition, 2017 |


**Submitted by: Mr SSS Shameem, Mr Shreenidhi H Bhat, Mr Tojo Thomas, Dr Vidya Rao**

**(Signature of the faculty)**
**Date: 21-07-2025**

**Approved by:**

**(Signature of HOD)**
**Date:**

| Faculty | Section |
|---|---|
| Mr SSS Shameem, Mr Shreenidhi H Bhat, Mr Tojo Thomas | A, C |
| Mr Shreenidhi H Bhat, Mr Tojo Thomas, Dr Vidya Rao | B, C |

**Faculty members teaching the course (if multiple sections exist):**