



# Kadi Sarva Vishwavidyalaya

Faculty of Engineering & Technology

Third Year Bachelor of Engineering (CE/IT)

(In Effect From Academic Year 2019-20)

<b>Subject Code: CT604A-N</b>	<b>Subject Title: Android Programming</b>
<b>Pre-requisite</b>	Java

## Teaching Scheme (Credits and Hours)

Teaching scheme				Total Credit	Evaluation Scheme					Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.	
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
03	00	02	05	04	03	70	30	20	30	150

### Course Objective:

An Android technology is generally used in mobile system, where android is an open source technology. This technology is used for mobile application development. Using android technology, student can make own mobile applications and upload easily on mobile devices.

### Outline of the Course:

Sr. No	Title of the Unit	Minimum Hours
1	Introduction to Android	5
2	Android Application Design and Resources	5
3	Exploring User Interfaces screen elements	4
4	Designing User Interfaces with Layouts	4
5	Drawing and working with Animation	3
6	Android Storage APIs	4
7	Sharing Data Between Applications with Content Providers	6
8	Using Android Network, Web and Multimedia APIs	9
9	Telephony API and Notifications	8

**Total hours (Theory): 48**

**Total hours (Lab): 32**

**Total hours: 80**



**Kadi Sarva Vishwavidyalaya**  
**Faculty of Engineering & Technology**  
**Third Year Bachelor of Engineering (CE/IT)**  
(In Effect From Academic Year 2019-20)

**Detailed Syllabus:**

Sr. No	Topic	Lecture Hours	Weightage (%)
1	<b>Introduction of Android:</b> Android Operating System, History of Mobile Software Development, Open Handset Alliance (OHA), The Android Platform, Downloading and Installing Eclipse, Exploring Android SDK, Using the Command-Line Tools and the Android Emulator, Build the First Android application, Android Terminologies, Application Context, Application Tasks with Activities, Intents, and Closer Look at Android Activities.	5	10
2	<b>Android Application Design and Resources:</b> Anatomy of an Android Application, Android Manifest file, Editing the Android Manifest File, Managing Application's Identity, Enforcing Application System Requirements, Registering Activities and other Application Components, Working with Permissions.	5	10
3	<b>Exploring User Interface Screen Elements:</b> Introducing Android Views and Layouts, Displaying Text with TextView, Retrieving Data From Users, Using Buttons, Check Boxes and Radio Groups, Getting Dates and Times from Users, Using Indicators to Display and Data to Users, Adjusting Progress with SeekBar, Providing Users with Options and Context Menus, Handling User Events, Working with Dialogs, Working with Styles, Working with Themes.	4	8
4	<b>Designing User Interfaces with Layouts:</b> Creating User Interfaces in Android, View versus ViewGroup , Using Built-In Layout Classes such as FrameLayout, LinearLayout, RelativeLayout, TableLayout , Multiple Layouts on a Screen, Data-Driven Containers, Organizing Screens with Tabs, Adding Scrolling Support.	4	8
5	<b>Drawing and Working with Animation:</b> Working with Canvases and Paints, Working with Text, Working with Bitmaps, Working with Shapes, Working with Animation.	3	6



**Kadi Sarva Vishwavidyalaya**  
**Faculty of Engineering & Technology**  
**Third Year Bachelor of Engineering (CE/IT)**  
(In Effect From Academic Year 2019-20)

<b>6</b>	<p><b>Android Storage APIs:</b>  Working with Application Preferences such as Creating Private and Shared Preferences, Adding, Updating, and Deleting Preferences. Working with Files and Directories, Storing SQLite Database such as Creating an SQLite Database, Creating, Updating, and Deleting Database Records, Closing and Deleting a SQLite Database.</p>	4	8
<b>7</b>	<p><b>Sharing Data Between Applications with Content Providers:</b>  Exploring Android's Content Providers, Modifying Content Providers Data, Enhancing Applications using Content Providers, Acting as a Content Provider, Working with Live Folders.</p>	6	13
<b>8</b>	<p><b>Using Android Networking APIs:</b>  Understanding Mobile Networking Fundamentals, Accessing the Internet (HTTP).  <b>Using Android Web APIs:</b>  Browsing the Web with WebView, Building Web Extensions using WebKit, Working with Flash.  <b>Using Android Multimedia APIs:</b>  Working with Multimedia, Working with Still Images, Working with Video, Working with Audio.</p>	9	19
<b>9</b>	<p><b>Using Android Telephony APIs:</b>  Working with Telephony Utilities, Using SMS, Making and Receiving Phone Calls.  <b>Working with Notifications:</b>  Notifying a User, Notifying with Status Bar, Vibrating the Phone, Blinking the Lights, Making Noise, Customizing the Notification, Designing Useful Notification.</p>	8	18
	<b>Total</b>	48	100

**Instructional Method and Pedagogy:**

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lecture and laboratory which carries 10 marks in overall evaluation.
- One internal exam will be conducted as a part of internal theory evaluation.
- Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.
- Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five marks in the overall internal evaluation.
- The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures.
- Experiments shall be performed in the laboratory related to course contents.



**Kadi Sarva Vishwavidyalaya**  
**Faculty of Engineering & Technology**  
**Third Year Bachelor of Engineering (CE/IT)**  
(In Effect From Academic Year 2019-20)

**Learning Outcome:**

By the end of the course, student will be able to make simple mobile applications, use built-in widgets and components, work with the database to store data locally.

**e-Resources:**

- <https://nptel.ac.in/courses/106105175/>

**Reference Books:**

1. Android Wireless Application Development By Lauren Darcey and Shane Conder, Pearson Education, 2<sup>nd</sup> Edition.
2. Unlocking Android Developer's Guide By Frank Ableson and Charlie Collins and Robi Sen, Manning Publication Co.

**List of experiments:**

Sr. No	Name of Experiment
1	To print "hello world" using string.xml file in android application.
2	Android Life Cycle: Android system initiates its program with an Activity starting with a call on onCreate() callback method. There is a sequence of callback methods that start up an activity and a sequence of callback methods that tear down an activity as shown in the below Activity life cycle program.
3	To perform button click event in android application. There are 3 different methods used to handle button click event.(Mention All 3 methods)
4	To perform Arithmetic Operations in android.
5	To perform Custom Toast & Dialog Box in android.
6	To perform Explicit Intent in android.
7	To perform Implicit Intent - Messages wiring components together. The source and destination for the content transfer are not known. Only the task and the action to be performed are known.
8	To perform UI Controls in Android.
9	To perform DATABASE in Android
10	SMS Sending – Message can be sent using 2 methods – using Intent, using Sms Manager.
11	Plotting a location on Google Map
12	GPS tracking in android application.
13	Create an Android App to display student details in ListView (using Database helper class and Adapter class).
14	Create an Android App to display student details in ListView(List must contain image and textview).
15	Implement the concept of Async Task in Android App.
16	Implement the concept of Shared preference in Android.
17	Demonstrate the use of shared preference as session in Android.
18	Implement the concept of Insert, Update and Delete Student facilities using fragment and database helper.



**Kadi Sarva Vishwavidyalaya**  
**Faculty of Engineering & Technology**  
**Third Year Bachelor of Engineering (CE/IT)**  
(In Effect From Academic Year 2019-20)

19	Playing audio files in Android Application.
20	Playing video files in Android Application.
21	Implement the concept of Web View to load different web URLs in Android App.
22	Create a web service using URL Connection in android.
23	To Implement the notification concept in Android.