



Type of course: Core

Prerequisite: Java programming and Object-oriented programming, Knowledge of RDBMS and OLTP

Rationale: Mobile Application development is becoming need of the day as webpage development was about ten years ago. Most companies are developing their mobile applications so that customers may interact with them on mobiles itself. Android is most popular mobile operating system of today. Android application development course is therefore designed to enable the diploma information technology students to build mobile applications on this platform. This course covers the basics of Android along with required programming codes for developing necessary programming skills for mobile applications. Thus this course is an important course for Software Development students with possibilities of self employment.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory		Practical		
			University exams (ESE)	Internal evaluation (PA)	External Practical /viva Exam(ESE)	Internal Practical /viva Exam(PA)		
3	-	-	3	50	-	-	50	

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Teaching Hrs.	Module % Weightage
1	UNIT-I Android Introduction- Smart phones future, Preparing the Environment, Installing the SDK, Creating Android Emulator, Installing and Using Eclipse, Installing Android Development Tools, Choosing which Android version to use Android Architecture, Android Stack, Android applications structure Creating a project, Working with the AndroidManifest.xml, Using the log system Activities Introduction to UI – Layouts, Fragments, Adapters, Action bar, Dialogs, Notifications , UI best practices, UI Architecture, Application context, Intents, Activity life cycle, Supporting multiple screen sizes	8	20
2	UNIT-II Designing User Interface Using Views – Basic Views- TextView, Button, Image Button, Check Box, Toggle Button, Radio Button etc., Progress Bar View and Auto Complete Text View, Time Picker and Date Picker View, List View, Image View, Image Switcher and Grid View, Digital Clock and Analog Clock Views Notification and Toast, Parameters, on Intents, Pending intents, Status bar notifications , Toast notifications	8	20
3	UNIT-III Menus- Localization, Options menu, Context menu	8	20

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from academic
year 2018-19**

	Dialogs -Alert dialog, Custom dialog, Dialog as Activity Orientation and Movement - Pitch, roll and yaw, Natural device orientation, Reference frame remapping SMS - Sending and Receiving Working with Media –Playing audio and video, Recording audio and video		
4	UNIT-IV Location and Maps - Google maps, Using GPS to find current location Working with data storage - Shared preferences, Preferences activity, Files access, Using External storage, SQLite database Animation -View animation, Drawable animation Working with Sensors - Finding sensors, Accelerometers, Gyroscopes, Other types Working with Camera – Controlling the camera, Preview and overlays, Taking pictures	8	20
5	UNIT-V Content providers - Content provider introduction, Query providers Network Communication - Web Services, HTTP Client, XML and JSON, Using e-mails. Services - Service lifecycle, Foreground service, Creating own services Publishing and Distributing Your App -Preparing for publishing, Google Play requirements, Signing and preparing the graphics, Publishing to the Android Market, Monetization, Tips on becoming a top app, Google analytics	10	20
	Total	42	

Reference Books:

1. Beginning Android, Mark L Murphy, Wiley India Pvt Ltd
2. Professional Android, Sayed Y Hashimi and Satya Komatineni, Wiley India Pvt Ltd
3. Android in Action, Chris King, Robi Sen and W. Frank Ableson, Manning Publications
4. Learning Android, Ramesh Bangia, Khanna Publishing House

Suggested Specification table with Marks (Theory): (For BVOC only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	0	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course Outcomes:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand the concept of open source mobile development and Android Architecture	20
CO-2	Design Android UI Layout.	20
CO-3	Develop applications using menu and dialogue box.	20
CO-4	Develop applications using map, location and animation.	20
CO-5	Develop applications using content provider and services	20



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List of Open Source Software/learning website:

Students must refer to following sites to enhance their learning ability.

- <https://www.udacity.com/course/ud853>
- www.w3schools.com
- <https://www.eclipse.org/downloads/>
- www.mysql.com
- <http://www.codelearn.org/androidtutorial>