

GUJARAT TECHNOLOGICAL UNIVERSITY

ANDROID PROGRAMMING B.E. 8th Semester

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE Viva (V)	PA (I)	
4	0	2	6	70	30	30	20	150

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

Content:

Sr #	Topic	Teaching Hrs.
1	Fundamentals: OOPS, Software Engineering, SQL Queries, Basics of Designing	5
2	Android OS: Introduction to Java And Android, Introducing Development Framework, Dalvik Virtual Machine – DVM, Developing with Eclipse, Android Virtual Device and SDK Manager, Android Architecture and OOPS, Android Development Tools, Android Asset Packaging Tool (AAPT), Android Debug Bridge, Types of Android Applications, Android Architecture and OOPS, Activity Lifecycle, Activity Classes, Introduction to Application Manifest, Installing Android, Component Lifecycle	15
3	Building mobile applications with android: Android Layouts, Android UI and Advance Java, Android GUI Architecture, Layouts, Android Widget Toolbox, WebView, GridView, Understanding Android Menus, Intents and Processes, Graphics Animation and Multimedia, Bitmaps, Introduction to Audio on Android, Introduction to Video, Android Persistence, Android Preferences, Using File system, Accessing SD cards, Location and maps, Using GEOCoder, Creating and Using Overlays, Projections, Using Wake Locks, Android Text To Speech, Interprocess Communication, Paranoid Android, Internet Services, Broadcast receivers, Using Camera, Sensor Manager, Bluetooth, Network, Wi-Fi, AIDL and IPC, XML Parsing, Dom Parsing, SAX Parsing, JSON Parsing, SQLite Databases, Services and Content Providers, Introduction to Android NDK	25
4	Database Connectivity: SQLite Database, SQLite Data Types, Cursors and Content Values, SQLite Open Helper, Adding, Updating and Deleting Content	4
5	Applicability to industrial projects: Project Scope, Database Dictionary, Flow Chart, High Level Requirements, Using Bluetooth and NFC in Android ,device, Localization in Android, Configuration changes, Security and permissions, Web Services Integration, Deployment	2

Reference Books:

1. Android Developer Tools Essentials by Mike Wolfson - O'Reilly Media Publications
2. Learn Java for Android Development, 2nd Edition - Jeff Friesen - Apress Publications
3. OpenGL ES 2 for Android - Kevin Brothaler- The Pragmatic Programmers

Course Outcome:

The main objectives to give the subject Mobile Application Development in Android are:

1. To introduce basic concepts of Android Programming
2. To introduce Android OS
3. To introduce Building Mobile Application With Android
4. To introduce cutting edge technology to the students

Instructional Method and Pedagogy:

1. Lectures will be taken in class room with the use of multi-media presentations, black board or mix of both.
2. Assignments based on above course content will be given to the students at the end of each module. Each assignment contains minimum 10 questions.
3. Mini Project based learning

Reference Links/ e-content

1. VideoTutorials:
<http://www.youtube.com/watch?v=SUOWNXGRc6g&list=PL2F07DBCDC01493A>
2. Study Tutorial: <https://developer.android.com/sdk/index.html>