**Android – TOC**

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| **Course Code** | **Course Name** | **Module Code** | **Module**  **Name** | **Duration** | **Session Code** | **Session Name** | **Session Duration**  **(in Mins)** | **Objective** |
| 4 | Mobile Application Development  (Android) + UI + PHP | 4.3 | Android | 80  Hours | 4\_3\_01 | Introduction to  Android | 90 | What is Android?  A Short History  Download & Install Android SDK  Download and Configure Eclipse plug-in for Android |
|  |  |  |  |  | 4\_3\_02 | Android  Architecture | 90 | Android Architecture  Android development stack  The Kernel & Libraries  The Dalvik JVM |
|  |  |  |  |  | 4\_3\_03 | Android Development  Environment | 90 | Eclipse with Android plugin  Dalvik Debug Monitor Server (DDMS)  DDMS Tools in Eclipse |
|  |  |  |  |  | 4\_3\_04 | Developing and  running first  Android application  with explanation | 90 | Creating a Project  Running Your Application  Android Hardware Buttons  Run Configuration  Debugging an Application |
|  |  |  |  |  | 4\_3\_05 | Understand  Android Application  Structure | 90 | Activity/services/receiver declarations  Resources & R.java  Values – strings.xml  Layouts & Drawable Resources  Activities and Activity lifecycle  Launching an Activity  Pausing and Stopping an Activity  Destroying an Activity  Registering an Activity  The Default Activity  The Application Class  The Application Context |
|  |  |  |  |  | 4\_3\_06 | Emulator-Android  Virtual Device | 90 | Launching emulator  Editing emulator settings  Emulator shortcuts  Logcat usage  Introduction to DDMS  File explorer  Second App :- (switching between activities)  Develop an app for demonstrating the communication between Intents |
|  |  |  |  |  | 4\_3\_07 | Practical 1  Introduction to  Andriod - Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_08 | Practical 2  Introduction to  Andriod - Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_09 | Getting started  with Android  GUI  Programming | 90 | Simple GUI's  Selection Widgets & Toast  Dates and Times  Tabbed Views  TextView and EditText  Button  CheckBox |
|  |  |  |  |  | 4\_3\_10 | Creating Views  and other  components  Programmatically | 90 | Creating Views  View Hierarchy  Creating Views Programmatically  ToggleButton  RatingBar |
|  |  |  |  |  | 4\_3\_11 | Creating Views  and other  components  using XML  configuration | 90 | Creating View in XML Layout  More on XML Layout  Common Programming Tasks with Views  ToggleButton  RatingBar |
|  |  |  |  |  | 4\_3\_12 | Practical 2  User Interface  Library - Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_13 | Practical 2  User Interface  Library - Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_14 | Layout  Management | 90 | Android Layout Types  Layout Attributes  View Identification  Different types of layout examples |
|  |  |  |  |  | 4\_3\_15 | Event Handling  using Programmatic  approach | 90 | Event Listeners & Event Handlers  Event Listeners Registration  Touch Mode  Focus  Event Handling Examples  Using programmatic approach |
|  |  |  |  |  | 4\_3\_16 | Event Handling  using  XML configuration  Approach | 90 | Event Listeners & Event Handlers  Event Listeners Registration  Touch Mode  Focus  Event Handling Examples  Using XML configuration approach |
|  |  |  |  |  | 4\_3\_17 | Practical 3  User Interface Library  Advanced UI  Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_18 | Practical 4 - User  Interface Library  Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_19 | Working with  Intent | 90 | What is an Intent?  The android.content.Intent Class  Explicity Specifiying Component's Class  Implicit Target Component Specification |
|  |  |  |  |  | 4\_3\_20 | Intent  Filters | 90 | Intent Filters  Data Type Filter  Action Name  Category Name  Starting an Activity  Getting Output from Activity  Pending Intent |
|  |  |  |  |  | 4\_3\_21 | Application  Menu | 90 | Defining Menu Items  Menu XML File  Option Menu  Populating Menu Items from Resource  Manipulating Menu Items  Handling Menu Item Click Event  Context Menu  Showing a Context Menu  Handling a Context Menu Item Click |
|  |  |  |  |  | 4\_3\_22 | Showing Notification  Messages using  Toast and status bar | 90 | Toast  Popping a Toast  Advanced Toast  Status Bar Notification  Advantages of Status Bar Notification  Steps to Create a Status Bar Notification  Posting the Notification  Using a Utility Method |
|  |  |  |  |  | 4\_3\_23 | Showing  Notification  Messages  using dialogs | 90 | Using Dialogs  Alert Dialogs  Handling Button Click Events  ProgressDialog  Setting Progress Amountjec |
|  |  |  |  |  | 4\_3\_24 | Working with  Lists | 90 | Spinner View  Handling Item Selection Event  ListView  Handling ListView Events |
|  |  |  |  |  | 4\_3\_25 | Working with  Adapters | 90 | The Adapter Model  Custom Adapter Class  Using an Adapter  Using a Custom Row Layout  Array adapter  Cursor adapter  Image adapter |
|  |  |  |  |  | 4\_3\_26 | Getting started  with Android  Services | 90 | What is a Service?  Creating a Service  Starting and Stopping a Service  Starting Long Running Work  Sending Control Messages to a Service  Usability Guidelines  Service Lifecycle |
|  |  |  |  |  | 4\_3\_27 | Create and  run background  Services | 90 | Service Lifecycle  Background services  How to start and stop background services  Configure services in app |
|  |  |  |  |  | 4\_3\_28 | Broadcast  Receivers 1 | 90 | Developing a Broadcast Receiver Component  Registering a Receiver  Broadcasting a Custom Intent  Unregister dynamically registered receiver  Long running operations  Restrictions for defining BroadcastReceiver |
|  |  |  |  |  | 4\_3\_29 | Broadcast  Receivers 2 | 90 | Sticky Broadcast Intents  System broadcasts  Automatically starting Services from a Receivers |
|  |  |  |  |  | 4\_3\_30 | Practical 4  Services, Intent  & ContentProviders  Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_31 | Practical 4  Services, Intent  & ContentProviders  Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_32 | Preferences 1 | 90 | Data Storage Options  Data Privacy  Shared Prefereances  Modifying Shared Preferences  Default Preferences |
|  |  |  |  |  | 4\_3\_33 | Preferences 2 | 90 | Editing Preferences  Internal Storage  Private Directory  Cache Directory |
|  |  |  |  |  | 4\_3\_34 | Data storage  using File  system 1 | 90 | External Storage  Checking State of External Storage  Working with Files in External Storage |
|  |  |  |  |  | 4\_3\_35 | Data storage  using File  system 2 | 90 | Shipping Files with the Application  Working with Raw Resource Files  Working with Asset Files |
|  |  |  |  |  | 4\_3\_36 | Working with  Data (SD Card) 1 | 90 | Using the external storage  Getting access to external storage  Checking media availability  Saving files that can be shared with other apps  Saving files that are app-private |
|  |  |  |  |  | 4\_3\_37 | Working with  Data (SD Card) 2 | 90 | Reading and Writing a file to SD card sample program in Android |
|  |  |  |  |  | 4\_3\_38 | Data storage  using SQLite 1 | 90 | SQLite Programming  SQLiteOpenHelper  SQLiteDatabse  Inserting Data  Updating Data  Deleting Data |
|  |  |  |  |  | 4\_3\_39 | Data storage  using SQLite 2 | 90 | Fetching Data  Transaction Management  A Pattern for Connection and Transaction Handling |
|  |  |  |  |  | 4\_3\_40 | SQLite  Queries  & Cursor | 90 | Example Queries  Iterating Over a Cursor  Reading Column Values from Cursor  Cursor Management  Binding Cursor to ListView  Custom Data Binding  Handling Item Click Event  Refreshing the ListView  Schema Creation Issues  Using the Helper Class |
|  |  |  |  |  | 4\_3\_41 | Content  Providers 1 | 90 | Content providers overview  Using existing Android content providers  Creating own content providers  Using custom made content providers |
|  |  |  |  |  | 4\_3\_42 | Content  Providers 2 | 90 | Implement the query () Method  Implement the insert() Method  The update() and delete() Methods  Implement getType()  Registering a Provider  Writing a Data Consumer  Performing a Query |
|  |  |  |  |  | 4\_3\_43 | Practical 5  Instance State,  SharedPreferences, SQLite DB and  Cursors - Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_44 | Practical 5  Instance State,  SharedPreferences,SQLite DB and  Cursors - Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_45 | Android  Telephony API | 90 | Common Uses of Telephony API  Making a Phone Call  Sending SMS Message  Call and Service State  Monitoring Call and Service State  Register the Listener  Getting Detail Phone Information |
|  |  |  |  |  | 4\_3\_46 | Android  Audio API | 90 | Recording Audio  Start Recording Audio  Stop Recording  Playing Audio |
|  |  |  |  |  | 4\_3\_47 | Android  Video API | 90 | Playing from Raw Resource  Playing from a File or Network Stream  Stopping and Cleanup  Video Playback  Playing Video |
|  |  |  |  |  | 4\_3\_48 | Sensor API | 90 | Android Sensors  SensorManager  SENSOR\_SERVICE  Sensor.TYPE\_ACCELEROMETER with example  SensorEvent and SensorEventListener  Sensor.TYPE\_ORIENTATION with example |
|  |  |  |  |  | 4\_3\_49 | Location Based  Services | 90 | Guidelines for Obtaining Current Location  Obtaining Current Location from an Activity or Service  Reading Location Data  Other Considerations  Proximity Alert  Geocoding  Using MapView  Setting up the Project  Showing MapView from an Activity |
|  |  |  |  |  | 4\_3\_50 | Practical 6  Google maps,  GPS,  Camera Activity  and File handling  Part 1 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_51 | Practical 6  Google maps,  GPS,  Camera Activity  and File handling  Part 2 | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_52 | Practical 7  SMS and  Accelerometer  monitoring | 90 | * Students will work on   given practice assignments |
|  |  |  |  |  | 4\_3\_53 | Assessment | 90 | * Students will take   online/offline assessment |