**Course Sr. No.02**

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| A. Name of the Institute | Centre for Development of Advanced Computing, Mohali |
| B. Name/title of the Course | **Specialized Training Programme in Cloud Based Mobile App Development** |
| C. Proposed Dates and Duration of the Course in weeks / months | From: 06th May 2019 to 31st May 2019  Duration: Four weeks |
| D. Eligibility Criteria for Participants  1.Educational Qualification    2. Work Experience  3. Age Limit  4. Target group (Level of participants and target ministry/department etc. may be identified) | A Bachelor’s Degree in Electrical/ Electronics/ Computer Science/ Information Technology  As per MEA guidelines  As per MEA guidelines  Working Professional with knowledge of computers |
| E. Aims & Objectives of the Course | * Learn Android development, Java programming and Android studio from scratch * Create fun, engaging and real world Android apps (based on Java) * Learn how to work with APIs and advanced databases * Breaks even the most complex applications down into simplistic steps * Upload your android apps to the Google play and reach millions of android users |
| F. Details / Content of the Course ***(please attach detailed Course Profile****)* | As per sheet attached |
| G. Mode of Evaluation of Performance of the ITEC Participant | Assignments and Project Work |

**COURSE CONTENTS**

1. Introduction to Java and Android Development Course
2. Windows PC – Install and Setup for Android App Development: JDK, NetBeans, Android Studio
3. Basics of Java Programming Language: Features, Compilation, Lexical Issues, Control Structures, Arrays
4. Object-Oriented Concepts of Java: Classes, Methods, Constructors, Inheritance, Polymorphism, Packages & Interfaces
5. Advanced Concepts of Java: String handling, Multithreading, Exceptional Handling, Input-Output Streams, Collections Framework
6. Basics of Android and working of Android studio: Dalvik VM, Software Stack, Android Core Building Blocks, Android Emulator, AndroidManifest.xml, R.java file, Hide Title Bar, Screen Orientation
7. UI Widgets: Working with Button, Toast, Custom Toast, Button, Toggle Button, Switch Button, Image Button, CheckBox, AlertDialog, Spinner, AutoCompleteTextView, RatingBar, DatePicker, TimePicker, ProgressBar, Quick Contact Budge, Analog Clock and Digital Clock, Working with hardware Button, File Download
8. Activity, Intent & Fragment: Activity Lifecycle, Activity Example, Implicit Intent, Explicit Intent, Fragment Lifecycle, Fragment Example, Dynamic Fragment
9. Android Menu: Option Menu, Context Menu, Popup Menu
10. Layout Manager: Relative Layout, Linear Layout, Table Layout, Grid Layout
11. Adaptor: Array Adaptor, ArrayList Adaptor, Custom Adaptor
12. View: WebView, ScrollView, TabHost, ViewPager, ListView, DynamicListView, ExpandedListView, RecyclerView
13. Android Service: Android Service, Android Service API, Android Started Service, Android Bound Service, Android Service Life Cycle, Android Service Example
14. Data Storage: Shared Preferences, Internal Storage, External Storage
15. Firebase: Firebase Storage over network, Authentication and Database
16. Telephony API: Telephony Manager, Broadcast Receiver, Making Phone Call, Send SMS
17. Device Connectivity: Bluetooth Tutorial, List Paired Devices, Working with WiFi, Working with Camera
18. Android Permission Model
19. Android Native Development Kit (NDK)
20. Project Work: Develop an application based on Android