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| **Course Name:** | | | | | | | | | | | Mobile Application Design and Development | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Course Code:** | | | | | | | | | | | TMC 402 (1) | | | |
| **program Name:** | | | | | | | | | | | Master of Computer Applications (MCA) | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | |  | | | |
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| **1** | **Contact Hours:** | | | | | | | | | | | 45 | | | |  | | | | | | | | | | | | | | | | | | | | | | | | **L** | | 3 | | | | | | **T** | | | 0 | **P** | 2 |
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| **2** | **Examination Duration(Hrs):** | | | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | | 0 | | 3 |  | **Practical** | | | | | | | | 0 | | | 0 | | |  | | | | | | |
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| **3** | **Relative Weightage:** | | | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | | 25 | | | **MTE:** | | | | | 25 | | | **ETE:** | | | | | 50 | | | | | | |  | | | |
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| **4** | **Credits:** | | | | | | | 0 | | 3 | |  | | | | | | | | | | | | |  | | | |  | | | | |  | | |  | | | | |  | | | | | | | |  | | | |
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| **5** | **Semester:** | | | | | | | |  | | |  | | | **\*** | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | **Autumn** | | | | | | **Spring** | | | | | | | **Both** | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **6** | **Pre-Requisite:** | | | | | | | | | | | Knowledge of ‘Java’ language | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **7** | **Subject Area:** | | | | | | | | | | | Computer Science | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **8** | **Objective:** | | | | | | | | | | To familiarize students with the App designing and power of Android Programming. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **9** | **Course Outcome:** | | | | | | | | | | | | | | After completion of the course students will be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 1** | | | | | Apply the development tools in the Android development environment. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 2** | | | | | Create UI-rich apps using all the major UI components and analyze the life cycles of Activities, Fragments and Intent. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 3** | | | | | Design UI-rich apps using all the widgets and multimedia components that will show the power of Android Programming like Graphics, Sensors etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 4** | | | | | Design applications to implement the concept of files and SQLite Database. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 5** | | | | | Analyze the concept of web services, Telephony, and instant messaging and utilize the Google map to add location to their apps. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **CO 6** | | | | | Analyze and prepare their apps for distribution on the Google Play Store. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **10** | | **Details of the Course:** | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | | | | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | | | | |
| **1** | | | | **Introduction to Android:** Introduction of Android, OHA, Features of Android, History, versions, Android Architecture, Android core building blocks, Android Emulator, **Configuring Android Development Environment:** Downloading and installing JDK and Net beans, Downloading and installing Android Studio. **Creating First Android App:** Creating new Android Project, Creating AVD. **Android project files:** Android Manifest.xml, MainActivity.java, R.java, activity\_main.xml etc. **Android Tools:** DVM, AVD Manager, Android SDK Manager, Android Emulator, DDMS, resource folder. **App Components**: Activity, Service, Broadcast Receiver, and Content Provider. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **10** | | | | | | | |
| **2** | | | | **Fragment:** Introduction, needs of fragment and Lifecycle of Fragment.  **Intent:** What is Intent, Why Intent? Types of Intent.  **Layouts**: Linear, Relative, Tabular, Frame, and Absolute.  **Views**: Button, Text View, Edit Text, Radio Button, Image View, Toast, Adapter, Spinner, List View, Grid View.  **Adaptor:** Adaptor and Adaptor View.  **Android Menu:** Option menu, context menu, and popup menu.  **Events:** Event Handling, and Listeners. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **10** | | | | | | | |
| **3** | | | | **Multimedia:** Playing audio, video file and Camera.  **Graphics:** Android Graphics and Animation  **Sensors:** How sensors work, category of sensors, sensor framework, and classes and interfaces used to access sensor.  **Bluetooth:** Bluetooth Adapter class, Paired devices, Enable/Disable devices.  **Maps & Location:** What is Google map, Types of Google map, Methods of Google map. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **9** | | | | | | | |
| **4** | | | | **Content Provider:** How Content Provider works, steps to create content provider, URI, CRUD.  **Files:** Internal and External storage**. Shared Preference**.  **Storage**: Introduction to SQLite Database, SQLiteOpenHelper class, and Cursor. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | | |
| **5** | | | | **Android Web Services:** What is web service, Soap and Restful web service?  **P2P Communication:** Introduction of Instant Messaging.  **Introduction of Telephony.**  **Versioning the app:** Setting the version publishing the app on Google play, Moniterizing the Android app. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | | |
|  | | | | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **45** | | | | | | | |
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| **11** | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | |
| **Sl. NO.** | | | **NAME OF AUTHERS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION** | | | | |
| **1** | | | **Programming Android:** Expert Android application Development and professional Android by Reto Meier. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2014 | | | | |
| **2** | | | Android Black Book, programming android by Zigurd Mednieks, Laird Dormin, **G. Blake Meike & Masumi Nakamura.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2015 | | | | |
| **3** | | | Android Application Development, Black Book by Pradeep Kothari | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2014 | | | | |

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| **Code** | **Title** | **Description** |
| TMC 402(1) | Mobile Application Design and Development | **Unit III: Topic Removed: Thread:** Introduction, category and AsyncTask. |