# 17CS4101 - MOBILE APPLICATION AND DEVELOPMENT

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| **Course Category:** | Program Core | **Credits:** | 3 |
| **Course Type:** | Theory | **Lecture - Tutorial - Practical:** | 3-0-0 |
| **Prerequisite:** | Awareness on programming languages, operating systems and mobile usage. | **Sessional Evaluation:**  **Univ. Exam Evaluation:**  **Total Marks:** | 40  60  100 |
| **Objectives** | * Implement the design using specific mobile development frameworks * Develop and deploy the mobile applications in marketplace for distribution | | |

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| **Course Outcomes** | Upon successful completion of the course, the students will be able to: | |
| CO1 | Gain knowledge in the accessibility and usability features for mobile innovation |
| CO2 | Know the web content accessibility guidelines for mobile. |
| CO3 | Understand the overview of Mobile applications and Mobile interface. |
| CO4 | Implement the design and application development using Android SDK. |
| CO5 | Practice the skills of 2D graphics and UI design as well as multimedia in Android mobile apps. |
| CO6 | Explore the techniques of mobile cloud computing in mobile applications deployment. |
| **Course Content** | UNIT-I  Accessibility: The Telephone and Accessible Innovation, Understand Disability, The Business Case for Accessibility, Advocating for Accessibility, The History of Inclusive Thinking: Universal and Inclusive Design  UNIT-II  Inclusive Thinking: Persona Spectrum, Digital Inclusion, Users, Empathy.  Web Content Accessibility Guidelines for Mobile: Perceivable, Understandable, Robust  UNIT-III  **Overview of Mobile App and Mobile Interface:** Mobile System, Mobile Interface and Applications, Big Data Application in Mobile Systems, Data Security and Privacy Protection in Mobile Systems, Concept of Mobile Apps, Brief Introduction of Android and its Framework  UNIT-IV  **Quick Start on Android:** Installing Java, Installing Integrate Development Environment, Installing Android SDK, Creating an Android Application, Android Virtual Device.  **Introduction of Key Concepts of Android:** App Components-Activities, Services, Content Providers, Intents. App Resources, App Mainfest.  UNIT-V  **2-D Graphics and Multimedia in Android:** Introduction of 2-D Graphics Techniques- Color, Paint, Path, Canvas, Drawable, Button Selector. Advanced UI Design-Multiple Screens, Action Bar, Custom Views. Overview of Multimedia in Android, Audio Implementations in Android, Executing Video in Android.  UNIT-VI  **Data Storage and SQLite Operations:** Local Data- Internal and External Storage, Save a File, Delete a File, SQLITE Database-Table Structure, Crud Operations, Usage of SQLITE Techniques  **Mobile Cloud Computing in Mobile Applications Deployment:** Concepts and main techniques Of Mobile Cloud Computing, Mobile Cloud Computing Architecture | |
| **Text Books and References:** | Text Books:   1. Rob Whitaker, Developing Inclusive Mobile Apps: Building Accessible Apps for iOS and Android, A Press, 2020. 2. Meikang Qiu, Wenyun Dai, and Keke Gai “Mobile Applications Development with Android Technologies and Algorithms”, CRC Press, Taylor & Francis Group, 2017. | |
| Reference Books:   1. Jeff McWherter and ScottGowell, "Professional Mobile Application Development", Wrox, 2012 2. Charlie Collins, Michael Galpin and Matthias Kappler, “Android in Practice”, DreamTech, 2012 | |
| **E-Resources** | 1. <http://developer.android.com/develop/index.html> | |