Course: BTech **Semester:** 6

Prerequisite: Basic knowledge of java language

Rationale: The mobile application development syllabus covers the essential concepts and tools for building apps across platforms, including UI/UX design, app architecture, networking, databases, and deployment. It explores both native development (Android) and cross-platform frameworks, emphasizing practical skills for creating functional, user-friendly mobile applications.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	0	0	3	20	20	-	60	-	100

SEE - Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

W - Weightage (%) , **T** - Teaching hours

Sr.	Topics	W	T
1	**Android Operating System and Development Environment :** Introduction, Android Architecture, Versions, Features, OHA, Dalvik VM, Android SDK, Android Development Tools, Android Virtual Devices, Development Environment, Directory Structure of Android Application, Android Manifest file	10	3
2	**Android Components and Resource handling :** Components: Context, Activity, Intent, Service, Broadcast Receiver, Resources:String, Color, Drawable, Styles, Theme, Localization:Prepare Application for Localization	20	7
3	**Android User Interface Elements and Layouts:** Introduction of Material Design, UI and UX **Layouts:** Linear Layout, Absolute Layout, Frame Layout, Relative Layout, Constraint Layout, Dynamic Implementation of Layout. UI widgets with properties, events and methods, Dialog boxes, Menus: Option and Context	20	8
4	**Working with Views and Fragment:** GridView, WebView, ScrollView, ListView, RecyclerView, CardView Fragment: Introduction, life Cycle, Implementation	10	5
5	**Data Storage Techniques :** Shared Preferences, Files and Directories, SQLite Database Connectivity andOperations, Content Providers: Basics, Content URI, Content Resolver, Built-in content providers.	20	9
6	**Web Application Integration Techniques:** Introduction of AsyncTask, Communication with Web API, Introduction to JSON data, JSON Parsing,Implementation of Third-PartyLibraryto Fetch Network Data, Notifications, Telephony API, Google API	10	8
7	**Polish and Publish Application:** Different Ways to Monetize, Versioning, Signing, Packaging and Beta Test of Mobile Application, Distributing Application on Mobile Market Place	10	5

Reference Books	
1.	**Android Wireless Application Development By Lauren Darcey and Shane Conder | Pearson Education,2011 | second edition (TextBook)**
2.	**Head First Android Development: A Brain Friendly Guide, O`Reilly, David Griffiths and Dawn Griffiths**
3.	**Professional Android 4 Application Development, John Wiley & Sons Author(s): Reto Meier**
4.	**Beginning Android, Apress Author(s): Mark L Murphy**

Course Outcome

After Learning the Course the students shall be able to:
1. Acquire an insight into concepts of mobile application development terminologies, environment and architecture 2. Design mobile application using various UI components and layouts. 3. Develop robust mobile applications with database interaction and webservice integration 4. Deploy application on mobile device