# C.U.SHAH UNIVERSITY – Wadhwan City

**FACULTY OF**: -Technology and Engineering (Diploma Engineering)
**DEPARTMENT OF**: -Computer Engineering
**SEMESTER**: -VI          **CODE**: - 2TE06MAD1
**NAME** – Mobile Application And Development

## Teaching & Evaluation Scheme:-

| Subject Code | Name of the Subject | Teaching Scheme | | | | Evaluation Scheme | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Th | Tu | Pr | Total | Theory | | | | Practical (Marks) | | | |
| | | | | | | Sessional Exam | | University Exam | | Internal | | University | |
| | | | | | | Marks | Hours | Marks | Hours | Pr/Viva | TW | Pr | |
| 2TE06MAD1 | Mobile Application And Development | 04 | 00 | 02 | 06 | 30 | 1.5 | 70 | 03 | ---- | 20 | 30 | 150 |

## Objectives:-

The objective of Mobile computing and Android Apps Development is to make students attentive about how mobile communication works and how to build mobile apps for android mobile operating System. This course covers the necessary concepts which support mobile application development.

**Prerequisites:** Basic Computer Skills, Basic knowledge of Mobile Operating System.

## Course Outlines:-

| Sr. No. | Course Contents | Hours |
|---|---|---|
| 1 | **Introduction to Mobile Computing**<br>History of Wireless Communications, Evolution of mobile computing ,Various Types of Wireless Communication Technologies used in Mobiles, Mobile Computing Functions, Applications, Mobile Computing Devices and Networks(Wire line, Wireless, Ad-hoc), Mobile computing OS, Architecture of mobile computing, Three tier architecture. | 08 |
| 2 | **Global System for Mobile Communication:**<br>Global system for mobile communication, GSM Architecture, GSM entities, Call routing in GSM, GSM address and identifiers, GSM Frequency allocation, | 08 |

| | authentication and security, Short message services, Value added services through SMS, accessing the SMS bearer. | |
|---|---|---|
| **3** | **General Packet Radio Service (GPRS):**<br>GPRS, GPRS Architecture, Applications of GPRS, Limitation of GPRS. | 08 |
| **4** | **CDMA-3G and 4G:**<br>Introduction to CDMA ,CDMA Architecture, CDMA Vs GSM, Introduction to 3G & 4G,UMTS, Wi-Fi v/s 3G.Application of 3G and 4G. | 06 |
| **5** | **Introduction to Android**<br>Overview of Android, Open Handset Alliance, What does Android run On – Android Internals?, Why Android for mobile apps development?, Environment setup for Android apps Development, Framework - Android- SDK, Eclipse, Emulators – What is an Emulator / Android AVD?, Android Emulation – Creation and set up, Android Project Framework, First Android Application | 12 |
| **6** | **Android Activities and GUI Design Concepts**<br>Intent, Activity, Activity Lifecycle, Creating Application and new Activities, Expressions and Flow control, Android Manifest, Simple UI -Layouts and Layout properties, Introduction to Android UI Design, Introducing Layouts, Creating new Layouts, Draw able Resources, Resolution and density independence (px, dip, dp, sip, sp), XML Introduction to GUI objects(Push Button, Text / Labels, Edit Text, Toggle Button, Checkbox, Radio button), Event driven programming in Android | 14 |

**List of Experiments:-**

- To study about mobile computing.
- To Study the architecture of GSM..
- To study the architecture of GPRS.
- To study the architecture of CDMA.
- To study about 3G and 4G.
- Create "Hello World" application. That will display "Hello World" in the middle of the screen in the red color with white background.
- Create sample application with login module. (Check username and password) On successful login, go to next screen. And on failing login, alert user using Toast. Also pass username to next screen.
- Create login application where you will have to validate Email-ID (UserName). Till the username and password is not validated, login button should remain disabled.
- Create and Login application as above. On successful login, open browser with any URL.
- Create an application that will pass some number to the next screen, and on the next screen that number of items should be display in the list.
- Create spinner with strings taken from resource folder (res >> value folder). On changing spinner value, change image.
- Create an application that will change color of the screen, based on selected options from the menu.
- Create an application that will display toast (Message) on specific interval of time.
- Create a background application that will open activity on specific time.

- Create an application that will have spinner with list of animation names. On selecting animation name, that animation should affect on the images displayed below.
- Create an UI such that, one screen have list of all the types of cars. On selecting of any car name, next screen should show Car details like: name, launched date, company name, images (using gallery) if available, show different colors in which it is available.
- Understanding content providers and permissions: Read phonebook contacts using content providers and display in list.
- Create an application to call specific entered number by user in the Edit Text.

## Learning Outcomes:-

The theory should be taught and practical should be carried out in such a manner that Students are able to acquire different learning out comes in cognitive, psychomotor And affective domain to demonstrate following course outcomes.
- Explain mobile technology.
- GSM and GPRS and CDMA.
- Demonstrate Android activities life cycle.
- Execute operations on GUI objects.
- 3G and 4G .

## Books Recommended:-

- Professional Android 2 Application Development by Reto Meier (Wiley India Pvt Ltd)
- Beginning Android by Mark L Murphy (Wiley India Pvt Ltd)
- Pro Android by Sayed Y Hashimi and Satya Komatineni (Wiley India Pvt Ltd)
- A.K.Talukder and R.R. Yavgal ,Mobile computing,TMH
- Dasbit and Sikdar, Mobile Computing PHI
- Wayne Tomasi, Electronics communications systems fifth edition Pearson
- Mobile & Cellular Communication-3e- Lee- MGH.

## E- References:-

- http://www.tutorialspoint.com/android/
- http://www.tutorialspoint.com/android/android_overview.htm
- http://www.codelearn.org/android-tutorial/android-introduction
- http://pl.cs.jhu.edu/oose/resources/android/Android-Tutorial.pdf
- http://mobisys.in/blog/2012/01/introduction-to-android-sqlite-database/
- http://mobisys.in/blog/2012/01/introduction-to-android-sqlite-database/
- http://www.activexperts.com/mmserver/cellular/gprsintro/
- https://sites.google.com/site/the4gtelecom/cdma-network-structure