PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Computer Science & Engineering
SYLLABUS FOR 6th Sem BTech PROGRAMME
Mobile Computing (203108391)

Type of Course: BTech

Prerequisite:

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/	Lab Hrs/		T	P	T	CE	P	
3	0	0	3	60	-	20	20	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction of Transmission Fundamentals**: Introduction, Transmission Fundamentals Signals for Conveying Information, Analog and Digital Data Transmission, Channel Capacity, Transmission Media, Multiplexing CommunicationNetworks LANs,MANs,andWANs,SwitchingTechniques ,CircuitSwitching,Packet Switching.	20%	10
2	**Cellular Wireless-Networks**: **Cellular Wireless Networks**-Principles of Cellular Networks, First Generation Analog Second-Generation TDMA Second-Generation CDMA, Third-Generation Systems **Antennas and Propagation-**Antennas, Propagation Modes, Line-of Sight Transmission, Fading in the Mobile Environment **Modulation Techniques**-Signal Encoding Criteria, Digital Data-Analog Signals, Analog Data-Analog Signals, Analog Data-Digital Signals **Spread Spectrum**-The Concept of Spread Spectrum, Frequency Hopping Spread Spectrum, Direct Sequence Spread Spectrum, Code Division Multiple Access.	25%	12

3	**Global system for mobile communication**: **GSM**- Global system for mobile communication, GSM architecture, GSM entities, call routing in GSM,PLMN interface, GSM addresses and identifiers, network aspects in GSM,GSM frequency allocation, authentication and security **General packet radio service(GPRS)** - GPRS and packet data network, GPRS network architecture, GPRS network operation, data services in GPRS,	25%	12
4	**Global system for mobile communication**: Applications of GPRS, Billing and charging in GPRS **Wireless System Operations and standards** - Cordless Systems, Wireless Local Loop, WiMAX and IEEE 802.16 Broadband Wireless Access Standards Mobile IP and Wireless Application. Protocol	%	
5	**Wi-Fi and the IEEE 802.11 Wireless**: Wi-Fi and the IEEE 802.11 Wireless LAN Standard – IEEE 802 architecture, IEEE 802.11 architecture and services, IEEE 802.11 Medium access control, IEEE 802.11 physical layer,	10%	4
6	**Bluetooth**: **Bluetooth**-Radio specification, baseband specification, link manager specification, logical link control and adaption protocol	10%	4
7	**Android-APIs**: Android APIs, Android Architecture, Application Framework, The Application components, The manifest file, downloading and installing Android, Exploring the Development Environment, Developing and Executing the first Android application, Working with Activities, The LinearLayout Layout, The RelativeLayout Layout, The ScrollView Layout, The TableLayout Layout, The FrameLayout Layout, Using the TextView, EditText View, Button View, RadioButton, CheckBox, ImageButton, RatingBar, The options Menu, The Context Menu.	10%	7

*Continuous Evaluation:

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Wireless Communication
    T.S.Rappaport; Pearson Edu.
2. "Mobile Cellular Telecommunications Analog and Digital Systems
    William C.Y.Lee; TMH; 2nd edition, 1995
3. Wireless Communication & Networking
    Vijay K. Garg; Elsevier
4. Wireless communication
    T. L. Singal; McGraw Hill; 4TH