Course : ICT 204 : Digital Communication

Course Code	ICT 204
Course Title	Digital Communication
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June 2019
Purpose of Course	This course provides in depth knowledge of mobile communication architecture and wireless communication technologies.
Course Objective	To make student understand Mobile technology architecture, its components and Wireless communication technology.
Pre-requisite	Fundamental knowledge of network communication
Course Out come	This course enables students to understand mobile communication. This course will also help students to understand the role of various wireless communication systems and select particular type of communication technology for their application development.
Course Content	**Unit : 1 : Introduction of communication system** 1.1 Introduction of Electronic communication System 1.2 Wave Property and Characteristics. 1.3 Electromagnetic Spectrum, Bandwidth and Information Capacity 1.4 Signal Analysis 1.5 Introduction of Sensor, Analog to Digital Conversion and Digital to Analog Conversion 1.6 Pulse code Modulation(PCM) 1.7 Digital Modulation and Transmission Techniques (ASK, FSK, PSK) **Unit : 2 : multiplexing techniques and Network switching** 2.1 FDMA 2.2 TDMA 2.3 WDM 2.4 Circuit and Data (Packet) Mode, Circuit Switching, Packet Switching 2.5 Introduction of Transmission Media **Unit : 3 : Cellular communication systems** 3.1 Mobility, Mobile and Ubiquitous computing 3.2 Global System for Mobile Communication (GSM) system overview: 3.2.1 Cellular concept 3.2.2 GSM Architecture 3.2.3 Frequency Reuse Planning and Design 3.2.4 Mobility Management(Hard Handoff) 3.3 General Packet Radio Service (GPRS) architecture and working 3.4 Wireless Local Loop (WLL) 3.5 Introduction of 3G technology 3.5.1 Introduction of CDMA 3.5.2 Frequency Allocation 3.5.3 Soft Handoff 3.6 Introduction of satellite communication **Unit : 4 : Wireless Enterprise networks** 4.1 Bluetooth technology 4.2 RFID technology 4.3 Mobile IP 4.4 Infrared communication technology 4.5 Wireless sensor networks 4.6 WIFI, WIMAX Technology

	Unit : 5 : New Generation Mobile Services 5.1 Introduction to 4G technology 5.2 Introduction to 5G technology 5.3 Introduction of Internet of Things. 5.4 IoT / M2M Applications
Reference Book	1. Introduction to Wireless and Mobile System, Darma Prakash agrawal, Qing-An Zeng, Cengage Publication 2. Mobile Computing, Asokek Talukder, Hasan Ahmed, Roopa Yavagal, MC Graw Hill Publication 3. Embedded systems- concepts, Design and Programming, Parag Dave, Himanshu B. Dave, Pearson Publication 4. Wireless And Mobile Communication, T.G.Palanivelu, PHI publication 5. Mobile and Personal communication systems and services, Raj pandya, PHI 6. Principles of Wireless Networks,Kavesh Pahlavan,Prashant Krishnamurti, Pearson Edition 7. Wireless and Mobile Network Architectures,Yi-Bing Lin & Imrich Chlamtac,John Wiely &sons, 8. Guide to Designing and Implementing Wireless LANs; Mark Ciampa,Thomson Learning Vikas Publishing house 9. The Wireless Application Protocol Sandip singhal, Pearson edition 10. Embedded real time system K.V.K.K. Prasad Dreamtech press 11. Adhoc Wireless Networks C.Siva Ram Murthy, B.S.Manoj Pearson Education 12. Data communication and Networking, Behrouza A forouzan, Mc Graw Hill publication
Teaching Methodology	Lectures, Discussion, Independent Study, Seminars and Assignment
Evaluation Method	30% Internal assessment 70% External assessment