

# DURGAPUR INSTITUTE OF ADVANCED TECHNOLOGY AND MANAGEMENT

(Affiliated to West Bengal University of Technology and recognized by AICTE, New Delhi)

Subject Code:- IT704E	Subject Name:- Mobile Computing	
Semester:- 7 <sup>th</sup>	Year:- 4th	Session:- 2018-2019
Branch Name:- Information Technology		Subject Teacher name: Sulekha Nandy

## SYLLABUS

Introduction to Personal Communications Services (PCS): PCS Architecture, Mobility management, Networks signaling. Global System for Mobile Communication (GSM) system overview: GSM Architecture, Mobility management, Network signaling. [5L]

General Packet Radio Services (GPRS): GPRS Architecture, GPRS Network Nodes. Mobile Data Communication: WLANs (Wireless LANs) IEEE 802.11 standard, Mobile IP.

[5L]

Wireless Application Protocol (WAP): The Mobile Internet standard, WAP Gateway and Protocols, wireless mark up Languages (WML). Wireless Local Loop(WLL): Introduction to WLL Architecture, wireless Local Loop Technologies.

[7L]

Third Generation (3G) Mobile Services: Introduction to International Mobile Telecommunications 2000 (IMT 2000) vision, Wideband Code Division Multiple Access (W-CDMA), and CDMA 2000, Quality of services in 3G.

[7L]

Global Mobile Satellite Systems; case studies of the IRIDIUM and GLOBALSTAR systems. Wireless Enterprise Networks: Introduction to Virtual Networks, Blue tooth technology, Blue tooth Protocols.

[7L]

Server-side programming in Java, Pervasive web application architecture, Device independent example application

[8L]

### **Text:**

1. "Pervasive Computing", Burkhardt, Pearson
2. "Mobile Communication", J. Schiller, Pearson
3. "Wireless and Mobile Networks Architectures", Yi-Bing Lin & Imrich Chlamtac, John Wiley & Sons, 2001
4. "Mobile and Personal Communication systems and services", Raj Pandya, Prentice Hall of India, 2001.

### **Course Objectives:**

1. To learn about the concepts and principles of mobile computing.
2. To explore theoretical issues of mobile computing.
3. To develop skills of finding solutions and building software for mobile computing applications.
4. Apply techniques and technologies to design and communicate a simple mobile application for smaller devices.
5. To appreciate the social and ethical issues of mobile computing, including privacy.

## Course Outcomes:

At the end of the module, the student will be able to:

1. Describe wireless and mobile communications systems and be able to choose an appropriate mobile system from a set of requirements.
2. Be able to avoid or work around the weaknesses of mobile computing, or to reject mobile computing as a solution.
3. Interface a mobile computing system to hardware and networks.
4. Program applications on a mobile computing system and interact with servers and database systems.

## LESSON PLAN

SL NO	DAY	REFERENCE OF THE SYLLABUS	REMARKS
1	LECTURE 1	Basic concept of personal communications service architecture	
2	LECTURE 2	What is Mobility management, Types of mobility	
3	LLECTURE 3	DO	
4	LECTURE 4	What is network signaling system, Global System for Mobile Communication architecture	
5	LECTURE 5	DO	
6	LECTURE 6	General Packet Radio Services architecture	
7	LECTURE 7	General Packet Radio Services network nodes	
8	LECTURE 8	WLANs (Wireless LANs) IEEE 802.11 standard	
9	LECTURE 9	What is Mobile IP, Components of a Mobile IP Network	
10	LECTURE 10	What is Wireless Application Protocol, components of Wireless Application Protocol,	

11	LECTURE 11	DO	
12	LECTURE 12	WAP Gateway and Protocols	
13	LECTURE 13	Wireless mark up Languages (WML)	
14	LECTURE 14	Introduction to WLL Architecture	
15	LECTURE 15	DO	
16	LECTURE 16	Wireless Local Loop Technologies.	
17	LECTURE 17	Introduction to International Mobile Telecommunications 2000 (IMT 2000) vision	
18	LECTURE 18	DO	
19	LECTURE 19	Wideband Code Division Multiple Access (W-CDMA)	
20	LECTURE 20	DO	
21	LECTURE 21	Introduction to 3 <sup>rd</sup> generation mobile CDMA 2000	
22	LECTURE 22	Quality of services in 3G	
23	LECTURE 23	DO	
24	LECTURE 24	Global Mobile Satellite Systems	
25	LECTURE 25	case studies of the IRIDIUM and GLOBALSTAR systems	
26	LECTURE 26	DO	
27	LECTURE 27	Introduction to Virtual Networks	
28	LECTURE 28	DO	
29	LECTURE 29	What is Bluetooth, Bluetooth architecture, different versions of Bluetooth	

30	LECTURE 30	DO	
31	LECTURE 31	What is Bluetooth protocols, advantages of Bluetooth protocols	
32	LECTURE 32	Server-side programming in Java	
33	LECTURE 33	DO	
34	LECTURE 34	DO	
35	LECTURE 35	Pervasive web application architecture,	
36	LECTURE 36	DO	
37	LECTURE 37	DO	
38	LECTURE 38	Device independent example application	
39	LECTURE 39	DO	
40	LECTURE 40	DO	

**Text book:**

1. Mobile Communication, J. Schiller, Pearson
2. Wireless and Mobile Networks Architectures, Yi-Bing Lin & Imrich Chlamtac, John Wiley & Sons, 2001
3. Mobile and Personal Communication systems and services”, Raj Pandya, Prentice Hall of India, 2001

**Teaching Methodologies:** Mainly using by black board

**Examination process:** Conventional.