SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY   Page 1 of 6

Department of Information Technology	LP: IT16602
	Rev. No: 00
B.E/B.Tech/~~M.E~~/~~M.Tech~~ : **B.E/B.Tech (CS & IT)** Regulation: **2016**	Date:17/12/2018
PG Specialisation : --	
Sub. Code / Sub. Name : **IT16602 – Mobile Computing**	
Unit : **I**	

Unit Syllabus:
INTRODUCTION
Mobility of bits and bytes, Beginning of wireless, Mobile computing, Dialogue control, Networks, Middleware and gateway, Application and services, Developing mobile computing application, Security in mobile computing, Standards, Mobile computing architecture, Mobile computing through telephony.

Objective:
To know about the basic concepts of wireless communication technologies, mobile computing architecture and development of mobile computing applications.

Session No *	Topics to be covered	Ref	Teaching Aids
1	Mobility of bits and bytes, Beginning of wireless, Mobile computing	1-Ch. 1; Pg. 1-8 2-Ch. 1; Pg. 7-16	LCD/BB
2	Dialogue control, Networks, Middleware and gateway, Application and services	1-Ch. 1; Pg. 9-16	LCD/BB
3	Developing mobile computing application, Security in mobile computing	1-Ch. 1; Pg. 16-18	LCD/BB
4	Standards - why are they necessary, who makes the standards, Standard Bodies	1-Ch. 1; Pg. 18-24	LCD/BB
5	Mobile computing architecture, Three Tier Architecture, Design Considerations for mobile computing	1-Ch. 1; Pg. 28-55	LCD/BB
6	Mobile computing through telephony, Multiple access procedures, Satellite communication, Developing an IVR application	1-Ch. 1; Pg. 58-75 2-Ch. 2; Pg. 41-45, 72-90	LCD/BB
7	Voice XML, Telephony Application Programming Interface(TAPI), computer supported telecommunications applications	1-Ch.1; Pg. 75-82 2-Ch.10;Pg.419-429	LCD/BB
Content beyond syllabus covered (if any):			

* Session duration: 50 minutes

Sub. Code / Sub. Name: **IT16602 – Mobile Computing**	
Unit : **II**	

Unit Syllabus:
WIRELESS TECHNOLOGIES
Bluetooth, RFID, WIMAX, Mobile IP, GSM,GPRS,CDMA, 3G,4G and 5G networks.

Objective:
To learn the Wireless techniques and the evolution of various generation wireless networks.

Session No *	Topics to be covered	Ref	Teaching Aids
8	Bluetooth – Bluetooth Protocols, Stack, Security, Application Models	1-Ch 4;Pg. 99-105 2-Ch.7; Pg. 269-291	LCD/BB
9	RFID – Applications	1-Ch 4;Pg. 105-109	LCD/BB
10	WIMAX – Physical layer, MAC, Broadband applications, Mobile cellular system	1-Ch 4;Pg. 109-113	LCD/BB
11	Mobile IP – Working, Discovery, Registration, Tunneling, Cellular IP	1-Ch 4;Pg. 109–113 2-Ch.8; Pg. 304-324	LCD/BB
12	GSM – Architecture, Entities, Call routing, PLMN interface, Addresses & Identifiers, Network aspects, Authentication& Security	1-Ch 5;Pg. 137-164 2-Ch 4;Pg. 96-129	LCD/BB
13	GPRS – packet data networks, architecture, operations, data services, applications.	1-Ch 7;pg 203-221	LCD/BB
14	CDMA – Spread spectrum technology, IS 95, CDMA vs GSM	1-Ch 9;pg 255-279	LCD/BB
15	3G - Wireless data, 3G, Applications	1-Ch 9;pg 279-293	LCD/BB
16	4G & 5G	Internet	LCD/BB

Content beyond syllabus covered (if any):

* Session duration: 50 mins

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Sub Code / Sub Name: **IT16602 – Mobile Computing**	
Unit : **III**	

Unit Syllabus:
WIRELESS LAN AND INTELLIGENT NETWORKS
Introduction-Advantages, IEEE 802.11 standards, Architecture, Mobility, Deploying wireless LAN, Mobile Ad hoc and Sensor network, Security, Wireless access in vehicular environment, Wireless local loop, Hyper LAN , Wi-Fi versus 3G,Wireless Application Protocol, Fundamentals of call Processing, Intelligence in networks,SS#7 signaling, IN conceptual model, soft switch, programmable networks, Technologies and interfaces for IN,SS7 security, MAPsec, Virtual Private Network.

Objective:
To learn about various concepts involved in wireless LAN and intelligent networks.

Session No *	Topics to be covered	Ref	Teaching Aids
17	Introduction-Advantages of Wireless LAN	1-Ch.10; Pg. 251-253	LCD/BB
18	IEEE 802.11 Standards, Wireless LAN Architecture, Mobility in Wireless LAN	1-Ch.10; Pg. 254-268 2-Ch.7; Pg. 207-238	LCD/BB
19	Deploying Wireless LAN, Mobile Adhoc networks and Sensor networks	1-Ch.10; Pg. 254-273 2-Ch.8; Pg. 330-340	LCD/BB
20	Wireless LAN Security, Wireless access in vehicular environment	1-Ch.10; Pg. 274-280	LCD/BB
21	Wireless Local Loop - WLL Architecture, Hyper LAN, Wi-Fi versus 3G	1-Ch.10; Pg. 280-284	LCD/BB
22	Wireless Application Protocol	1-Ch.8; Pg. 194-215 2-Ch.10; Pg. 392-418	LCD/BB
23	Fundamentals of call Processing, Intelligence in networks	1-Ch.8; Pg. 287-291	LCD/BB
24	SS#7 signaling, SS#7 Protocol Stack, SS7 Signal Unit	1-Ch.8; Pg. 291-300	LCD/BB
25	IN Conceptual Model(INCM)	1-Ch.8; Pg. 300-304	LCD/BB
26	Softswitch, Programmable networks	1-Ch.8; Pg. 304-305	LCD/BB
27	Technologies and interfaces for IN, SS7 security	1-Ch.8; Pg. 305-307	LCD/BB
28	MAPsec, Virtual Private Network	1-Ch.8; Pg. 307-309	LCD/BB
Content beyond syllabus covered (if any):			

* Session duration: 50 minutes

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Sub Code / Sub Name: **IT16602 – Mobile Computing**
Unit : **IV**

Unit Syllabus:
COMPUTING IN MOBILE ENVIRONMENT
Client Programming, Programming for palm OS, Wireless device with Symbian OS,J2ME,Wireless device with Windows CE, Wireless device with Android OS.

Objective:
To learn about development and computing environment used in various Mobile devices

Session No *	Topics to be covered	Ref	Teaching Aids
29	Client Programming	1-Ch. 12; Pg. 312-323	LCD/BB
30	PDA & Design Constraints	1-Ch. 12; Pg. 319-323	LCD/BB
31	Programming for the palm OS	1- Ch. 13;Pg. 327-349	LCD/BB
32	Multimedia and latest in palm OS	1-Ch. 13; Pg. 350-355	LCD/BB
33	Wireless device with Symbian OS	1-Ch. 14; Pg. 358-383	LCD/BB
34	J2ME	1-Ch. 15; Pg. 388-439	LCD/BB
35	MIDP & JSR	1-Ch. 15; Pg. 440-459	LCD/BB
36	Wireless device with windows CE & Android OS	1-Ch. 16; Pg. 463-476 Internet	LCD/BB
Content beyond syllabus covered (if any): IP Multimedia Subsystems			

* Session duration: 50 minutes

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Sub. Code / Sub. Name: **IT16602 – Mobile Computing**

Unit : **V**

Unit Syllabus:
APPLICATIONS

Voice over Internet and Convergence, SMS, CODEC, Networked Multimedia Applications, Issues in Multimedia delivery over the internet, Multimedia Networking Protocols, Security issues in mobile computing, Next generation networks, **APP DEVELOPMENT** : Native, Hybrid, Android Application development - SDK, Features of SDK, Android Application Components, software stack structure.

Objective:
In this unit, various applications of mobile computing and the various mobile application development environment and SDK will be discussed in detail

Session No *	Topics to be covered	Ref	Teaching Aids
37	Voice over Internet and Convergence, Voice over IP, H.323 Framework for voice over IP, SIP	1-Ch. 17; Pg. 480-486	LCD/BB
38	Real Time Protocols ,Convergence Technologies, Call Routing, IMS, Voice over wireless LAN	1-Ch. 17; Pg. 487-500	LCD/BB
39	SMS, Coder and Decoder(CODEC)	1-Ch. 6; Pg. 145-170 1-Ch. 18; Pg. 509-514	LCD/BB
40	Networked Multimedia Applications, Issues in Multimedia delivery over the internet, Multimedia Networking Protocols	1-Ch. 18; Pg. 520-525	LCD/BB
41	Security issues in mobile computing, Information Security, Security Techniques and Algorithms, Security Protocols	1-Ch. 20; Pg. 565-579	LCD/BB
42	Public Key Infrastructure, Security Models, Security frameworks for Mobile Environment	1-Ch. 20; Pg. 583-591	LCD/BB
43	Next generation networks, All in one The Converged Scenario, Narrowband to Broadband, All IP and B3G Network	1-Ch. 21; Pg. 601-605	LCD/BB
44	OFDM, FAMA / DAMA, Wireless Asynchronous Transfer mode, multiple play	1-Ch. 21; Pg. 605-612	LCD/BB
45	APP DEVELOPMENT : Native, Hybrid, Android Application development, SDK, Features of SDK, Android Application Components, software stack structure	Internet	LCD/BB

Content beyond syllabus covered (if any):

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* Session duration: 50 mins

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Sub. Code / Sub. Name: **IT16602 – Mobile Computing**

TEXTBOOKS:

1. Asoke Talukder, Hasan Ahmed and Roopa R yavagal ―Mobile computing Technology, Application and service creation‖, Second edition, McGraw Hill, 2010.

2. Jochen Schiller, ―Mobile Communications‖, Second Edition, Pearson, 2004.

REFERENCES:

1. "Beginning for Android 4 Application Development", Wei Meng Lee, Wiley –India Edition, 2012.
2. Zigurd Mednieks, Laird Dornin, G, Blake Meike and Masumi Nakamura, ―Programming Android‖, O"Reilly, 2011.

	Prepared by.	Approved by
Signature		
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Date	19-12-2018	19-12-2018
Remarks *:		
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD