NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTLINE TEMPLATE

Course Title	**Mobile Computing and Communication**		
Course Code	CSPE11	**No. of Credits**	**3-0-0-3**
Department	CSE	**Faculty**	**R.SASIKALA**
Pre-requisites Course Code	CSPC27		
Course Coordinator(s) (if, applicable)			
Other Course Teacher(s)/Tutor(s) E-mail	**sasir@nitt.edu**	**Telephone No.**	**9994492942**
Course Type	**Elective course**		

COURSE OVERVIEW

This course will cover various topics of mobile computing and communication , including but not limited to: modulation for wireless data ,signals, Architecture of mobile networks including their layers ,types of wireless networks ,routing protocols, wireless LAN,WAP and ideas about cellular networks(GSM)

COURSE OBJECTIVES

To understand the fundamentals of mobile communication.
To understand the architecture of various Wireless Communication Networks.
To understand the significance of different layers in mobile system

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
1. Ability to develop a strong grounding in the fundamentals of mobile Networks .	S	S	S	M	S	S	B	S

2.	Ability to apply knowledge in MAC, Network,Transport Layer protocols of Wireless Network .	S	S	S	M	M	M	B	S
3.	Ability to comprehend, design, and develop a lightweight network stack .	S	S	S	S	M	M	B	M

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
		UNIT-I	
1.	1st (10.7.17 - 14.7.17)	Introduction to Wireless Networks, Applications , History Simplified Reference Model, Wireless transmission , Frequencies , Signals , Antennas	Chalk and Talk
2	2nd (17.7.17 - 21.7.17)	Signal propagation , Multiplexing ,Modulation , Spread spectrum Cellular Systems: Frequency Management and Channel Assignment , types of hand-off and their characteristics.	Chalk and Talk
		UNIT–II	
3	3rd (24.7.17 - 28.7.17)	MAC :Motivation , SDMA, FDMA, TDMA, CDMA Telecommunication Systems GSM: Architecture,Location tracking and call setup, Mobility management	Chalk and PPT
4	4th (31.7.17 - 4.8.17)	Handover, Security,GSM SMS International roaming for	Chalk and Talk

		GSM,call recording functions , subscriber and service data management	
5	5th (7.8.17 - 11.8.17)	DECT , TETRA , UMTS , IMT-2000.*	Chalk and PPT
		UNIT-III	
6	6th (14.8.17 - 18.8.17)	Wireless LAN: Infrared Vs Radio transmission , Infrastructure , Adhoc Network	Chalk and Talk
7	7th (21.8.17 - 25.8.17)	IEEE 802.11WLAN Standards Architecture ,Services	Chalk and PPT
8	8th (28.8.17 - 1.9.17)	HIPERLAN , Bluetooth Architecture & protocols.*	Chalk and PPT
		UNIT – IV	
9	9th (4.9.17 - 8.9.17)	Mobile Network Layer , Mobile IP , Dynamic Host Configuration Protocol	Chalk and PPT
10	10th (11.9.17 - 15.9.17)	Mobile Transport Layer , Traditional TCP ,Indirect TCP, Snooping TCP	Chalk and PPT
11	11th (18.9.17 - 22.9.17)	Mobile TCP ,Fast retransmit / Fast recovery , Transmission / Time-out freezing , Selective retransmission ,Transaction Oriented TCP.*	Chalk and PPT
		UNIT – V	
12	12th	WAP Model, Mobile Location	Chalk and PPT

		based services ,WAP Gateway, WAP protocols		
13	13th (2.10.17 – 6.10.17)	WAP user agent profile, caching model,wireless bearers for WAP , WML , WML scripts,WTA,iMode-SyncML.*	Chalk and PPT	

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Assignment	3rd week	-	5%
2.	Cycle Test 1	5th week	1 Hr	20%
3.	Assignment	8th week	-	5%
4.	Cycle Test 2	10th week	1 Hr	20%
5	Semester Exam	16th week	3 Hrs	50%

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

Text Books

1. Jochen Schiller, " Mobile Communication", 2nd Edition,Pearson Education, 2008.
2. Theodore and S. Rappaport, "Wireless Communications, Principles, Practice", 2nd Ed PHI, 2002

Reference Books

1. William Stallings, "Wireless Communications and Networks", 2nd Edition, Pearson Education, 2004
2. C.Siva Ram Murthy and B.S.Manoj, "Adhoc Wireless Networks: Architectures and Protocols", 2nd Edition, Pearson Education, 2008
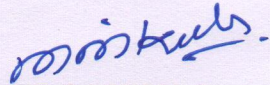3. Vijay. K. Garg, "Wireless Communication and Networking", Morgan Kaufmann Publishers, 2007.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

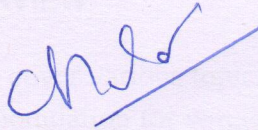Student feedback will be collected at the end of semester through MIS.

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

- Should participate in class discussion.
- Assignments should be submitted in time.
- Not to absent for cycle test.
- Maintain silence in class hours.

FOR SENATE'S CONSIDERATION

Course Faculty :R.SASIKALA

CC-Chairperson :Dr.C.MALA

HOD :Dr.R.LEELA VELUSAMY