Kadi Sarva Vishwavidyalaya
Faculty of Engineering and Technology
First Year Master of Engineering (Computer Engineering)
In Effect from Academic Year 2017-18

Subject Code: MECE202-N	Subject Title: WIRELESS AND MOBILE COMPUTING

Teaching scheme				Total Credit	Evaluation Scheme						Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.		Total
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks		Marks
03	00	02	05	04	03	70	30	20	30		150

LEARNING OBJECTIVES:

The objective of this course is

- To know the details of TCP/IP
- Understand working of Internet
- Know application of TCP/IP
- Manage TCP/IP and prepare foundation for future Networks

OUTLINE OF THE COURSE:

Unit No	Topics	Hours
1	Wireless Networking	04
2	Wireless Networks	12
3	Introduction to Mobile Computing	08
4	Multiple Access Techniques	08
5	Mobile Network And Transport Layer	08
6	Mobile Ad hoc Network	08

Total hours (Theory): 48

Total hours (Practical): 32

Total hours: 80

Kadi Sarva Vishwavidyalaya
Faculty of Engineering and Technology
First Year Master of Engineering (Computer Engineering)
In Effect from Academic Year 2017-18

DETAILED SYLLABUS:

Sr. No	Topic	Lecture Hours	Weight age (%)
1	**Wireless Networking:** • Introduction to Wireless Networking ,History of wireless networks. • Difference between Wireless and Fixed Telephone Networks. • Development of Wireless Networks, Wireless Network Architecture. • Benefits of Wireless Networks, Wireless Networking Applications	04	08
2	**Wireless Networks:** • Introduction, Wireless Technology. • Satellite Communications: Parameters & configurations, Capacity Allocation. • Cellular Wireless Networks : Principles, Evolution. Wireless LANs: Technology,IEEE 802.11 Wireless LAN Standard, Radio based • Wireless LANs,Components,Configuration,Performance, Wi-Fi, Wimax.	12	24
3	**Introduction to Mobile Computing:** • Emerging Technologies, GSM, SMS, GPRS, EDGE, 3G, 4G	08	17
4	**Multiple Access Techniques:** • Frequency Division Multiple access, Time Division Multiple Access, Aloha, Slotted Aloha, CSMA	08	17
5	**Mobile Network And Transport Layer** • Mobile IP- Goals and requirements, Entities, IP packet delivery, Agent Discovery, Registration, Tunneling and Encapsulation, Optimizations, Reverse Tunneling, IP micro-mobility support • DHCP Traditional TCP-Congestion Control, Slow start, Fast retransmit/fast recovery, Implications of mobility, Classical TCP- Indirect TCP, snooping TCP, Mobile TCP, Transmission/time out freezing and advancements	08	17
6	**Mobile Ad hoc Network:** • Introduction, Routing protocols- Routing, Dynamic source routing. • Destination sequence distance vector, Overview ad-hoc routing protocols . • Application- RFID, Bluetooth, Zigbee, NFC	08	17
	Total	48	100

INSTRUCTIONAL METHOD AND PEDAGOGY (Continuous Internal Assessment (CIA) Scheme)
- At the start of course, the course delivery pattern, prerequisite of the subject will be   discussed.
- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lecture and laboratory which carries 10 marks in overall evaluation.
- Two internal exams will be conducted and average of the same will be converted to equivalent of 15 Marks as a part of internal theory evaluation.
- Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.

Kadi Sarva Vishwavidyalaya
Faculty of Engineering and Technology
First Year Master of Engineering (Computer Engineering)
In Effect from Academic Year 2017-18

- Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five marks in the overall internal evaluation.
- The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures.
- Experiments shall be performed in the laboratory related to course contents.

STUDENTS LEARNING OUTCOMES:

- On successful completion of the course, the student will be having the basic knowledge of TCP/IP protocol suite and will understand the working of internet.
- Student will be able to manage any TCP/IP network and also design optimized TCP/IP network.

REFERENCE BOOKS:

1. Wireless Communications and Networks – William Stallings Pearson Education
2. Mobile Communications – Jochen Schiller Pearson
3. Wireless Communications Principles and Practice –Theodore S. Rappaport.
4. Wireless Networking – Kumar, Manjunath & Kuri, Morgan Kaufmann Publishers
5. Mobile Computing , Asoke K Telukder, Roopa R Yavagal, TMH

LIST OF PRACTICALS:

Sr.No	Name of Experiment
1	Introduction to J2ME & Net beans
2	Introduction to WML
3	Programs on WML
4	WAP site using WML
5	Introduction to NS2
6	Simulation in wired n/w
7	Simulation in wireless n/w
8	Assignment on ns2