



# **VEL TECH MULTI TECH Dr RANGARAJAN Dr.SAKUNTHALA ENGINEERING COLLEGE**

(An ISO 9001: 2008 Certified Institution)  
(Owned by 'VEL Shree R. Rangarajan  
Dr. Sakunthala Rangarajan Educational Academy)  
(Approved by AICTE, New Delhi &  
Govt. of Tamil Nadu and affiliated to Anna University)



## **SYLLABUS**

### **WEEKLY SCHEDULE**

**VIII SEMESTER**

**2014 - 2015**

### **DEPARTMENT OF ECE**

### **IV YEAR DEGREE COURSE**

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## **WEEKLY SCHEDULE**

**ACADEMIC YEAR: 2014– 2015**

<b>Sl.No</b>	<b>WEEKS</b>	<b>DATE</b>	
		<b>FROM</b>	<b>TO</b>
1	WEEK1	02.01.15	09.01.15
2	WEEK2	12.01.15	16.01.15
3	WEEK3	19.01.15	23.01.15
4	WEEK4	27.01.15	30.01.15
5	WEEK5	02.02.15	06.02.15
6	WEEK6	09.02.15	13.02.15
7	WEEK7	16.02.15	20.02.15
8	WEEK8	23.02.15	27.02.15
9	WEEK9	02.03.15	06.03.15
10	WEEK10	09.03.15	13.03.15
11	WEEK11	16.03.15	20.03.15
12	WEEK12	23.03.15	27.03.15
13	WEEK13	30.03.15	01.04.15
14	WEEK14	06.04.15	10.04.15
15	WEEK 15	13.04.15	17.04.15
16	WEEK16	20.04.15	24.04.15
17	WEEK17	27.04.15	30.04.15

## **SUBJECT CONTENTS**

<b>SL.NO</b>	<b>SUBJECT CODE</b>	<b>SUBJECT NAME</b>
<b>THEORY</b>		
1	<b>EC2050</b>	<b>Mobile Adhoc Networks</b>
2	<b>EC2043</b>	<b>Wireless networks</b>
<b>PRACTICAL</b>		
3	<b>EC2451</b>	<b>Project Work</b>

## **TEST / EXAM SCHEDULE**

<b>SL.NO</b>	<b>SUBJECT CODE</b>	<b>SUBJECT NAME</b>	<b>UNIT TEST I</b>	<b>UNIT TEST II</b>	<b>UNIT TEST III</b>	<b>UNIT TEST IV</b>	<b>UNIT TEST V</b>
<b>1</b>	<b>EC2050</b>	<b>Mobile Adhoc Networks</b>	<b>22.01.15 FN</b>	<b>11.02.15 FN</b>	<b>03.03.15 FN</b>	<b>23.03.15 FN</b>	<b>13.04.15 FN</b>
<b>2</b>	<b>EC2043</b>	<b>Wireless networks</b>	<b>22.01.15 AN</b>	<b>11.02.15 AN</b>	<b>03.03.15 AN</b>	<b>23.03.15 AN</b>	<b>13.04.15 AN</b>

<b>SL. NO</b>	<b>SUBJECT CODE</b>	<b>SUBJECT NAME</b>	<b>MODEL EXAM</b>
<b>1</b>	<b>EC2050</b>	<b>Mobile Adhoc Networks</b>	<b>20.04.2015</b>
<b>2</b>	<b>EC2043</b>	<b>Wireless networks</b>	<b>21.04.2015</b>

# **EC2050 MOBILE ADHOC NETWORKS**

## **UNIT I INTRODUCTION**

### **WEEK 1**

Introduction to adhoc networks – definition, characteristics features, applications Characteristics of Wireless channel, Adhoc Mobility Models:- Indoor and out door models.

### **WEEK 2**

### **UNIT TEST 1**

## **UNIT II MEDIUM ACCESS PROTOCOLS**

### **WEEK 3**

MAC Protocols: design issues, goals and classification. Contention based protocols- with reservation,

### **WEEK 4**

Scheduling algorithms, protocols using directional antennas.

### **WEEK 5**

IEEE standards: 802.11a, 802.11b, 802.11g, 802.15. HIPERLAN.

### **WEEK 6**

### **UNIT TEST 2**

## **UNIT III NETWORK PROTOCOLS**

### **WEEK 7**

Routing Protocols: Design issues, goals and classification. Proactive Vs reactive routing, Unicast routing algorithms, Multicast

### **WEEK 8**

Routing algorithms, hybrid routing algorithm, Energy aware routing algorithm, Hierarchical Routing, QoS aware routing.

### **WEEK 9**

### **UNIT TEST 3**

## **UNIT IV END-END DELIVERY AND SECURITY**

### **WEEK 10**

Transport layer: Issues in designing- Transport layer classification, adhoc transport protocols

### **WEEK 11**

Security issues in adhoc networks: issues and challenges, network security attacks, secure routing protocols.

### **WEEK 12**

### **UNIT TEST 4**

## **UNIT V CROSS LAYER DESIGN AND INTEGRATION OF ADHOC FOR 4G**

### **WEEK 13**

Cross layer Design: Need for cross layer design, cross layer optimization,

### **WEEK 14**

Intergration of adhoc with Mobile IP networks. Parameter optimization techniques, Cross layer cautionary prespective.

### **WEEK 15**

### **UNIT TEST 5**

### **WEEK 16&17**

### **MODEL EXAM**

## **TEXTBOOKS**

1. C.Siva Ram Murthy and B.S.Manoj, Ad hoc Wireless Networks Architectures and protocols, 2nd edition, Pearson Education. 2007
2. Charles E. Perkins, Ad hoc Networking, Addison – Wesley, 2000

## **REFERENCES:**

1. Stefano Basagni, Marco Conti, Silvia Giordano and Ivan stojmenovic, Mobilead hoc networking, Wiley-IEEE press, 2004.
2. Mohammad Ilyas, The handbook of adhoc wireless networks, CRC press, 2002.
3. T. Camp, J. Boleng, and V. Davies “A Survey of Mobility Models for Ad Hoc Network Research,” Wireless Commun. and Mobile Comp., Special Issue on Mobile Ad Hoc Networking Research, Trends and Applications, vol. 2, no. 5, 2002, pp. 483–502.
4. A survey of integrating IP mobility protocols and Mobile Ad hoc networks, Fekri M. Abduljalil and Shrikant K. Bodhe, IEEE communication Survey and tutorials, v 9.no.1 2007
5. V.T.Raisinhani and S.Iyer “Cross layer design optimization in wireless protocol stacks”Comp. communication, vol 27 no. 8, 2004.
6. V.T.Raisinhani and S.Iyer,”ÉCLAIR; An Efficient Cross-Layer Architecture for wireless protocol stacks”,World Wireless cong., San francisco,CA,May 2004.
7. V.Kawadia and P.P.Kumar,”A cautionary perspective on Cross-Layer design,”IEEE Wireless commn., vol 12, no 1,2005.



# **EC2043 WIRELESS NETWORKS**

## **UNIT I MULTIPLE RADIO ACCESS**

### **WEEK 1**

Medium Access Alternatives Access for Data Oriented Networks, Handoff and Roaming Support, Security and Privacy. Fixed-Assignment for Voice Oriented Networks Random

### **WEEK 2**

#### **UNIT TEST-1**

## **UNIT II WIRELESS WANS**

### **WEEK 3**

First Generation Analog, Second Generation TDMA – GSM, Short Messaging.

### **WEEK 4**

Service in GSM, Second Generation CDMA – IS-95, GPRS –

### **WEEK 5**

Third Generation Systems (WCDMA/CDMA 2000)

### **WEEK 6**

#### **UNIT TEST-2**

## **UNIT III WIRELESS LANS**

### **WEEK 7**

Introduction to wireless LANs - IEEE 802.11 WLAN – Architecture and Services, Physical Layer- MAC sublayer-

### **WEEK 8**

MAC Management Sublayer, Other IEEE 802.11 standards, HIPERLAN, WiMax standard.

### **WEEK 9**

#### **UNIT TEST-3**

## **UNIT IV ADHOC AND SENSOR NETWORKS**

### **WEEK 10**

Characteristics of MANETs, Table-driven and Source-initiated On Demand routing protocols,

### **WEEK 11**

Hybrid protocols, Wireless Sensor networks- Classification, MAC and Routing protocols.

### **WEEK 12**

### **UNIT TEST-4**

## **UNIT V WIRELESS MANS AND PANS**

### **WEEK 13**

Wireless MANs – Physical and MAC layer details, Wireless PANs – Architecture of Bluetooth Systems,

### **WEEK 14**

Physical and MAC layer details, Standards.

### **WEEK 15**

### **UNIT TEST-5**

### **WEEK 16&17**

### **MODEL EXAM**

### **TEXT BOOKS:**

1. William Stallings, "Wireless Communications and networks" Pearson / Prentice Hall of India, 2nd Ed., 2007.
2. Dharma Prakash Agrawal & Qing-An Zeng, "Introduction to Wireless and Mobile Systems", Thomson India Edition, 2nd Ed., 2007.

**REFERENCES:**

1. Vijay. K. Garg, “Wireless Communication and Networking”, Morgan Kaufmann Publishers, 2007.
2. Kaveth Pahlavan, Prashant Krishnamurthy, "Principles of Wireless Networks", Pearson Education Asia, 2002.
3. Gary. S. Rogers & John Edwards, “An Introduction to Wireless Technology”, Pearson Education, 2007.
4. Clint Smith, P.E. & Daniel Collins, “3G Wireless Networks”, Tata McGraw Hill, 2nd Ed,. 2007.

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