

**VIII SEMESTER**  
**WIRELESS COMMUNICATION**

Subject Code	: 10EC81	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

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**UNIT - 1**

Introduction to wireless telecommunication systems and Networks, History and Evolution Different generations of wireless cellular networks 1G, 2G, 3G and 4G networks.

**UNIT - 2**

Common Cellular System components, Common cellular network components, Hardware and software, views of cellular networks, 3G cellular systems components, Cellular component identification Call establishment.

**UNIT - 3**

Wireless network architecture and operation, Cellular concept Cell fundamentals, Capacity expansion techniques, Cellular backbone networks, Mobility management, Radio resources and power management Wireless network security

**UNIT - 4**

GSM and TDMA techniques, GSM system overview, GSM Network and system Architecture, GSM channel concepts, GSM identifiers

**UNIT - 5**

GSM system operation, Traffic cases, Call handoff, Roaming, GSM protocol architecture. TDMA systems

**UNIT - 6**

CDMA technology, CDMA overview, CDMA channel concept CDMA operations.

**UNIT - 7**

Wireless Modulation techniques and Hardware, Characteristics of air interface, Path loss models, wireless coding techniques, Digital modulation techniques, OFDM, UWB radio techniques, Diversity techniques, Typical GSM Hardware.

## UNIT - 8

Introduction to wireless LAN 802.11X technologies, Evolution of Wireless LAN Introduction to 802.15X technologies in PAN Application and architecture Bluetooth Introduction to Broadband wireless MAN, 802.16X technologies.

### TEXT BOOK:

1. **Wireless Telecom Systems and networks**, Mullet: Thomson Learning 2006.

### REFERENCE BOOKS:

1. **Mobile Cellular Telecommunication**, Lee W.C.Y, MGH, 2<sup>nd</sup>, 2009.
2. **Wireless communication** - D P Agrawal: 2<sup>nd</sup> Edition Thomson learning 2007.
3. **Fundamentals of Wireless Communication**, David Tse, Pramod Viswanath, Cambridge 2005.
4. S. S. Manvi, M. S. Kakkasageri, "Wireless and Mobile Network concepts and protocols", John Wiley India Pvt. Ltd, 1<sup>st</sup> edition, 2010.
5. "Wireless Communication – Principles & Practice", T.S. Rappaport, PHI 2001.

## DIGITAL SWITCHING SYSTEMS

Subject Code	: 10EC82	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

## UNIT - 1

Developments of telecommunications, Network structure, Network services, terminology, Regulation, Standards. Introduction to telecommunications transmission, Power levels, Four wire circuits, Digital transmission, FDM, TDM, PDH and SDH, Transmission performance.

## UNIT - 2

**EVOLUTION OF SWITCHING SYSTEMS:** Introduction, Message switching, Circuit switching, Functions of switching systems, Distribution systems, Basics of crossbar systems, Electronic switching, Digital switching systems.

*D.V.S.*

H. O. D.

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