

TELECOMMUNICATIONS

BEG 435 EC

Teaching Schedule Hours/Week			Examination Scheme				
Theory	Tutorial	Practical	Internal Assessment		Final		Total
3	1	3/2	Theory	Practical*	Theory	Practical**	
			20	25	80	-	

* Continuous

** Duration: 3 hours

Course objectives: The course objective is to give fundamental of telecommunication system.

- 1. Introduction (3 hrs)**
 - 1.1 Evolution of telecommunication
 - 1.2 Structure of telecommunication system
 - 1.3 Simple telephone communication

- 2. Transmission media (10 hrs)**
 - 2.1 Transmission media characteristics
 - 2.2 Transmission line
 - 2.3 Twisted pair, Feeder cable and coaxial cable
 - 2.4 Microwave principle components and communication
 - 2.5 Optical fibre communication

- 3. Signal Multiplexing (4 hrs)**
 - 3.1 Space division multiplex
 - 3.2 Frequency division multiplex
 - 3.3 Time division multiplex

- 4. Switching system (8 hrs)**
 - 4.1 Switching techniques
 - 4.2 Space division switching
 - 4.3 Time division switching

- 5. Subscriber and Signaling in telecommunication (6 hrs)**
 - 5.1 Rotary dial telephone
 - 5.2 Touch tone dial telephone
 - 5.3 Subscriber loop signaling
 - 5.4 Interexchange signaling
 - 5.5 Intraexchange signaling

- 6. Data communication and computer networking (10 hrs)**
 - 6.1 Structure of local area networks
 - 6.2 Local area network protocols
 - 6.3 Network interfaces
 - 6.4 Inter-networking
 - 6.5 Routine and flow control

- 7. Telephone traffic and networks (5 hrs)**
 - 7.1 Fundamentals of telephone traffic
 - 7.2 Telephone network
 - 7.3 Integrated service digital network (ISDN)

Laboratory:

Six laboratory exercises in FDM, TDM, Switching signal transmission in coaxial cable, optical fibre cable, microwave components.

References:

1. M.Schwartz “Telecommunication networks” Addition Wesley.
2. B.E.Briley “An Introduction to telephone switching” Addition Wesley
3. W. Stallings “Local Area Networks” Mc Millan

4. Harold B. Killen “Fibre Optic Communications” Prentice Hall
5. Manuals published by telecom equipment.