

LESSON PLAN:--(2026-27)

DISCIPLINE: ETC	SEMESTER:5th	NAME OF THE TEACHING FACULTY : SRI Anurag Sethy
SUBJECT: Microelectronics	NO.OF DAYS/PER WEEK CLASS ALLOTTED:3	SEMESTER FROM DATE:1/07/2026 TO DATE: 05/11/2026 NO.OF WEEKS:15
WEEK	CLASSDAY	THEORY/PRACTICAL TOPICS
1st	1ST	Clean room concept
	2ND	Growth of single crystal Si
	3RD	Surface contamination
2nd	1ST	Cleaning & etching
	2ND	Solvent/RCA cleaning
	3RD	Tutorial
3rd	1ST	Oxidation mechanism
	2ND	Techniques & properties
	3RD	Defects
4th	1ST	CVD oxide
	2ND	MOS capacitor
	3RD	Revision
5th	1ST	Fick equation
	2ND	Diffusion
	3RD	Measurement
6th	1ST	Diffusion systems
	2ND	Ion implantation
	3RD	Range theory
7th	1ST	Equipment
	2ND	Annealing
	3RD	Shallow junction
8th	1ST	High energy implantation
	2ND	Revision
	3RD	Test
9th	1ST	Optical lithography

LESSON PLAN:-(2026-27)

	2ND	Advanced lithography
	3RD	Tutorial
10 th	1ST	APCVD
	2ND	Plasma CVD
	3RD	MOCVD
11 th	1ST	Metallisation types
	2ND	Properties
	3RD	Schottky fabrication
12 th	1ST	Applications
	2ND	Discussion
	3RD	Revision
13 th	1ST	Assignment
	2ND	Case study
	3RD	Tutorial
14 th	1ST	Model test
	2ND	Doubt clearing
	3RD	Review
15 th	1ST	Applications
	2ND	Discussion
	3RD	Revision

LESSON PLAN:--(2026-27)

DISCIPLINE: ETC	SEMESTER:5TH	NAME OF THE TEACHING FACULTY : SRI SATYA NARAYAN PANIGRAHI
SUBJECT: WAVE PROPAGATION & BROADBAND COMMUNICATION ENGINEERING	NO.OF DAYS/PER WEEK CLASS ALLOTTED:3	SEMESTER FROM DATE:1/07/26 TO DATE: 05/11/2026 NO.OF WEEKS:17
WEEK	CLASSDAY	THEORY/PRACTICAL TOPICS
1ST and 2ND	1ST	WAVE PROPAGATION, ANTENNA
	2ND	REFLECTION, REFRACTION, DIFFRACTION, INTERFERENCE, ABSORPTION, ATTENUATION .
	3RD	MODES OF PROPAGATION
		CRITICAL FREQUENCY, MAXIMUM USABLE FREQUENCY, SKIP DISTANCE, FADING
3RD and 4TH	1ST	DUCT PROPAGATION , TROPOSPHERE SCATTER PROPAGATION, ACTUAL HEIGHT, VIRTUAL HEIGHT.
	2ND	ANTENNA GAIN, DIRECTIVE GAIN, DIRECTIVITY,
	3RD	EFFECTIVE APERTURE, POLARIZATION, INPUT IMPEDANCE, EFFICIENCY, RADIATOR RESISTANCE, BANDWIDTH, BEAMWIDTH.
		TYPES OF ANTENNA-MONOPOLE, DIPOLE, OMNI DIRECTIONAL ANTENNA.
5TH	1ST	YAGI, RHOMBUS ANTENNA.
	2ND	DISH ANTENNA, HORN ANTENNA
	3RD	SMART ANTENNA.
		FUNDAMENTALS OF TRANSMISSION LINE
6TH	1ST	CHARACTERISTIC IMPEDANCE, NUMERICALS.
	2ND	LOSSES IN TRANSMISSION LINE.
	3RD	SWR, VSWR, REFLECTION COEFFICIENT, NUMERICALS
		QUARTER WAVE, HALF WAVELENGTH LINE.
7TH	1ST	IMPEDANCE MATCHING, SINGLE & DOUBLE STUB MATCHING.
	2ND	TV ENGINEERING, ASPECT RATIO, RECTANGULAR SWITCHING, FLICKER, COMPOSITE VIDEO SIGNAL
	3RD	TV TRANSMITTER BLOCK DIAGRAMS
		MONOCHROME TV RECEIVER BLOCK DIAGRAM
8TH	1ST	COLOR TV SIGNALS
	2ND	TYPES OF TELEVISIONS – LCD, OLED, QLED.
	3RD	CATV SYSTEMS
		DIGITAL TV TECHNOLOGY
9TH	1ST	MICROWAVE WAVEGUIDES
	2ND	RECTANGULAR WAVEGUIDES & ITS ADVANTAGES
	3RD	TE & TM MODES IN RECTANGULAR WAVEGUIDE
		CIRCULAR WAVE GUIDE
10TH	1ST	OPERATION OF CAVITY RESONATOR
	2ND	WORKING OF DIRECTIONAL COUPLER
	3RD	WORKING OF ISOLATORS
		WORKING OF CIRCULATORS
11TH	1ST	WORKING OF 2 CAVITY KLYSTRON

LESSON PLAN:--(2026-27)

	2ND	WORKING OF TWT
	3RD	TWT DETAILS
		OPERATION OF TUNNEL DIODE
12TH	1ST	OPERATION OF GUNN DIODE
	2ND	OPERATION OF CYCLOTRON
	3RD	CONTINUED OF TUNNEL DIODE, GUNN DIODE
		CONTINUED OF CYCLOTRON.
13TH	1ST	CONTINUED OF TWT , NUMERICALS
	2ND	BROADBAND COMMUNICATION
	3RD	FUNDAMENTAL OF COMPONENTS, NETWORK ARCHITECTURE
		CABLE BROADBAND DATA NETWORK
14TH	1ST	ARCHITECTURE,IMPORTANCE,FUTURE OF BROADBAND TELECOMMUNICATION INTERNET BASED NETWORK.
	2ND	SONET
	3RD	SIGNAL FRAME COMPONENTS TOPOLOGIES
		ADVANTAGES, APPLICATIONS, DISADVANTAGES
15TH	1ST	ISDN
	2ND	ISDN DEVICE INTERFACES
	3RD	ISDN SERVICES, ARCHITECTURE,APPLICATIONS
		BISDN
16TH	1ST	BISDN INTERFACES & TERMINALS
	2ND	BISDN PROTOCOL
	3RD	BISDN ARCHITECTURE
		BISDN APPLICATIONS
17TH	1ST	TRANSMISSION LINE NUMERICALS
	2ND	ANTENNA NUMERICALS
	3RD	WAVEGUIDE NUMERICALS
		WAVE PROPAGATION NUMERICALS.

LESSON PLAN (2026-27)

DISCIPLINE: ETC	SEMESTER:5TH	NAME OF THE FACULTY: YOGASAKTI YOGAMAYA
SUBJECT: DATA COMMUNICATION & COMPUTER NETWORKS (ETCPC301)	NO. OF CLASSES PER WEEK: 3	SEMESTER FROM DATE:1/7/16 TO DATE :5/11/26 NO. OF WEEKS: 15
WEEK	CLASS	TOPIC
1st	1 st	Unit-1 Network & Protocol Data Communication
	2 nd	Networks
	3 rd	Protocol & Architecture
2 nd	1 st	Standards- OSI
	2 nd	TCP/IP
	3 rd	Unit-2: Data Transmission & Media Data transmission Concepts
3 rd	1 st	Terminology
	2 nd	Channel capacity
	3 rd	Transmission media
4 th	1 st	Guided Transmission
	2 nd	Guided Transmission
	3 rd	Wireless Transmission
5 th	1 st	Unit -3 Data Encoding Data Encoding
	2 nd	Data Encoding
	3 rd	Digital data digital signals
6 th	1 st	Digital data analog signals
	2 nd	Analog data digital signals
	3 rd	Analog data analog signals
7 th	1 st	Analog data analog signals
	2 nd	Unit-4: Data Communication & Data link control Asynchronous and Synchronous Transmission
	3 rd	Error Detection
8 th	1 st	Line configuration 4
	2 nd	Flow Control Error Control
	3 rd	Multiplexing
9 th	1 st	FDM synchronous TDM

	2 nd	Statistical TDM
	3 rd	Unit-5: Switching & Routing Circuit Switching networks
10 th	1 st	Packet Switching principles
	2 nd	Routing in Packet switching
	3 rd	X.25
11 th	1 st	Congestion
	2 nd	Effects of congestion, congestion control
	3 rd	Traffic Management
12 th	1 st	Unit-6: AN Technology Topology and Transmission Media
	2 nd	LAN protocol architecture
	3 rd	LAN protocol architecture
13 th	1 st	Bridges, Hub & Switch
	2 nd	Ethernet (CSMA/CD)
	3 rd	Ethernet (CSMA/CD)
14 th	1 st	Wireless LAN Technology
	2 nd	Unit-7: TCP/IP TCP/IP Protocol Suite
	3 rd	Basic Protocol functions
15 th	1 st	Principles of Internetworking
	2 nd	Internet Protocol operations
	3 rd	Internet Protocol

DISCIPLINE: ETC	SEMESTER:5TH	NAME OF THE TEACHING FACULTY : SRI PRAKASH CHANDRA SETHI, Sr Lecturer
SUBJECT: Fiber Optic Communications ETCPE301(A) TH:3(a)	NO.OF DAYS/PER WEEK CLASS ALLOTTED:3	SEMESTER FROM DATE:1/07/26 TO DATE: 05/11/2026 NO.OF WEEKS:15

Week	CLASSDAY	THEORY/PRACTICAL TOPICS
Week 1	1	Introduction to Fiber Optic Communication
	2	Vector Nature of Light
	3	Propagation of Light
Week 2	1	Reflection and Refraction
	2	Numerical Problems on TIR
	3	Propagation in Cylindrical Dielectric Rod
Week 3	1	Ray Model
	2	Wave Model
	3	Comparison of Ray and Wave Models
Week 4	1	Introduction to Optical Fibers
	2	Step Index Fiber
	3	Graded Index and Single Mode Fiber
Week 5	1	Multimode Fiber
	2	Modal Analysis of Step Index Fiber
	3	Numerical on Modal Analysis
Week 6	1	Dispersion in Optical Fiber
	2	Attenuation in Optical Fiber
	3	Dispersion & Attenuation Problems
Week 7	1	Fiber Fabrication Techniques
	2	OTDR Principle
	3	OTDR Applications
Week 8	1	LEDs as Optical Sources
	2	LASER as Optical Source
	3	Comparison of LED and LASER
Week 9	1	Photo Detectors
	2	PIN Detectors
	3	Detector Responsivity
Week 10	1	Noise in Optical Receivers
	2	Optical Receivers
	3	Unit III Revision & Test
Week 11	1	Optical Link Design
	2	BER Calculation
	3	Quantum Limit
Week 12	1	Power Penalties
	2	Link Design Examples
	3	Unit IV Revision
Week 13	1	Directional Couplers
	2	Electro-optic Switches
	3	Applications of Optical Switches
Week 14	1	Self-Phase Modulation
	2	Group Velocity Dispersion
	3	Optical Amplifiers (EDFA & Raman Amplifier)

Week 15	1	Coherent Communication
	2	WDM Systems
	3	Course Revision & End Semester Preparation