

EEE 8th Sem Lesson Plan

Week	Utilization of Electrical Energy	No. of Lectures planned	No of Lectures Delivered
1	Illumination: Term used in illumination, Law's of illumination, sources of light, arc lamp incandescent lamp,	3	
2	discharge lamp, sodium vapor, mercury vapor lamp, florescent tubes, lightening schemes, method of lightning calculation.	2	
3	Electrical Heating: Advantages of Electrical Heating, various types of Electrical heating,	3	
4	Power frequency and High frequency heating, Degree of heating element, Equivalent circuit of arc furnace,	3	
5	Resistance heating, Arc heating, Induction heating, dielectric heating etc.	2	
6	Electric Welding: All types of electrical welding, resistance welding, arc welding, electrical winding equipment,	3	
7	Comparison between AC & DC welding, types of electrodes, advantages of coated electrodes.	3	
8	Electroplating: Basic principle, faraday's law of electrostatics, terms used, Application of electrolysis, factors governing electro deposition, power supply.	3	
9	Refrigeration & Air Conditioning: Basic principle, various compression cycle & system its application, electric circuit of refrigerator, air conditioner.	3	
10	Traction Motors: Different system of electric traction, comparison between AC & DC system, block diagram of traction system ,Starting-	3	
11	Speed control and braking –Speed time curves,-Mechanics of Train movement-Tractive effort for acceleration –	2	
12	Speed control and braking-	3	

13	Power and energy output from driving axles-Specific energy output and consumption-Train resistance	3	
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Week	Electronic Instruments and Measurements	No. of Lectures planned	No of Lectures Delivered
1	C.R.O.: Introduction, Cathode Ray Tube (CRT), Electron Gun, Electrostatic Focusing,	3	
2	Electrostatic Deflection, Post Deflection Acceleration of Electron Beam, Effect of Beam Transit Time, Frequency limitation. Deflection plates,	2	
3	Screens of CRT's Graticule Aquadog, Applications, Storage C.R.O. Digital CRO. Design of delay lines for CRO. Amplifier Measurement:	3	
4	Amplifier Measurements, Transient response of Amplifiers, Measurements of Noise figure of Amplifier, Harmonic Distortions analyzer, Distortion Meter, Measurement of op- amp parameters	3	
5	Digital Instruments: Digital Indicating instruments, comparison with analog type digital display methods, theory and applications of digital voltmeters.	2	
6	Transistor, FET and other type of voltmeters. Electronic Galvanometers, Q-meter.	3	
7	Frequency Measurements: - Measurements of frequency use cavity wave-meter. Heterodyne frequency meter, comparison of frequency using interpolation method.	3	
8	Digital frequency meter. Frequency measurements using digital means.	3	
9	Signal Conditioning & Acquisition System: Signal conditioning, A/D converter, D/A Converter, Use of op-amp in signal conditioning,	3	
10	Components of analog data acquisition System. Components of digital data acquisition system, signal conditioning, multiplex special Encoders, Principles of Telemetry, Wire link channels, Ratio channels, and Microwaves Channels	3	
11	Instruments For Signals Generation: Pulse and square wave circuits,	2	

12	Laboratory square wave and pulse generators, Function generators, Random noise generators, Frequency Synthesizer. Bio-Medical Instruments:- ECG, EEG, EMG & Measurement of BP	3	
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Week	Advance Programming	No. of Lectures planned	No of Lectures Delivered
1	Review of Elementary Data Structures: arrays,	3	
2	Sorting: internal and external sorting, Methods: bubble,	2	
3	C++ Programming Language: Concept of object oriented programming,	3	
4	Searching Methods: Sequential, binary,	3	
5	merge, heap, radix and quick sort	2	
6	link list with respect to storage representation and access methods.	3	
7	Abstract Data type C classes,	3	
8	stacks, queues,	3	
9	Indexes searches.	3	
10	insertion, selection, . Comparison with respect to their efficiency.	3	
11	Data encapsulation, inheritance,	2	
12	polymorphism,	3	
13	virtual function templates implementation using C++.	3	

Week	Modern Trends in Communication	No. of Lectures planned	No of Lectures Delivered
1	effective isotropic radiated power, link budget calculations, multiple accessing techniques.	3	
2	Digital filtering, Pulse code modulation, Adaptive data modulation, coding,	2	
3	Coding efficiency, introduction to used codes. Error detection & corrections codes, ASK,FSK, PSK,DPSK,QPSK.	3	
4	Satellite Communication: Introduction, Satellite orbits, frequency used, station keeping, orientation of satellite,	3	

5	transmission paths & its losses & noise consideration. Satellite systems flux density,	2	
6	Fiber Optic Communication: Introduction, advantages & disadvantages, principle of light transmission in a fiber, types of optical fibers, effect of index profile on propagation, modes of propagation.	3	
7	Number of modes via fiber, single mode propagation, Rayleigh scattering losses, absorption losses,	3	
8	mode coupling losses, bending losses, combined losses, effect of dispersion on pulse transmission,	3	
9	inter model dispersion, material dispersion,	3	
10	wave guide dispersion, total dispersion.	3	
11	Optical Communication: LEDs, semiconductor laser diode, the PN photodiode, PIN diode.	2	
12	The avalanche photo diode, fiber optic communication system block diagram & loss budget,	3	
13	connectors & Splices.	3	