

LESSION PLAN

Branch- EEE

Sem-6th

Subject-Principles of Communication Engg.

Subject Teacher-Er.Sangita Chaudhary

S.N.	TOPIC	DATE	HOD SIGN.	REMARKS
1	Need for modulation and demodulation in communication systems	2/14/2023		
2	Basic scheme of a modern communication system	2/15/2023		
3	. Amplitude modulation - Derivation of expression for an AM wave.	2/17/2023		
4	Carrier and side band components	2/20/2023		
5	Modulation index. Spectrum and band width of AM Wave	2/21/2023		
6	Relative power distribution in carrier and side ban	2/22/2023		
7	Elementary idea of DSB-SC, SSB-SC, ISB and VSB modulations, their comparison,applications	2/24/2023		
8	3. Frequency modulation Expression for frequency modulated wave & its frequency spectrum	2/27/2023		
9	Modulation index, maximum frequency deviation	2/28/2023		
10	deviation ratio, BW and FM signals, Carson's rule.	2/28/2023		
11	Effect of noise on FM carrier. Noise triangle, Role of limiter	2/1/2023		
12	Need for pre-emphasis and de-emphasis, capture effect	3/3/2023		
13	Comparison of FM and AM in communication systems	3/6/2023		
14	Phase modulation Derivation of expression for phase modulated wave	3/7/2023		
15	modulation index, comparison with frequency modulation	3/8/2023		
16	Working principles and typical application of: - Square Law Modulation.	10-03 ,13-03-23		
17	Collector modulator	14-03,15-03-23		
18	Balanced Modulator	17-03,20-03-23		
19	Working principles and applications of reactance modulator	17,,21/03/23		
20	varactor diode modulator .	22-03,24-03-23		
21	VCO	27-03,28-03-23		
22	Armstrong phase modulator	29-03,31-03-23		
23	Principles of demodulation of AM wave using diode detect or circuit;	03-04,04-04-23		
24	concept of clipping and formula for RC time constant for minimum distortion	4/5/2023		
25	Principle of demodulation of AM Wave using synchronous detection.	10-04,11-04-23		
26	Basic principles of FM detection using slope detector	12-04,17-04-23		
27	Principle of working of the following FM demodulators:- - Foster-Seeley discriminator	18-04,19-04-23		
28	Ratio detector	21-04,24-04-23		
29	Phase locked Loop (PLL) FM demodulators	25-04,26-04-23		
30	1 Statement of sampling theorem and elementary idea of sampling frequency for pulse modulation	28-04,01-05-23		
31	Basic concepts of time division multiplexing (TDM)	5/2/2023		
32	frequency division multiplexing (FDM)	5/3/2023		
33	Basic ideas about PAM, PPM, PWM.	08,09,10-05-23		
34	Pulse code Modulation (PCM) Basic scheme of PCM system	5/12/2023		
35	Quantization, quantization error, companding error,	5/15/2023		
36	block diagram of TDMPCM communication system &function of each block. Advantages of PCM systems.	16,17,19-05-23		
37	Concepts of differential PCM (DPCM).	5/23/2023		
38	5 Delta Modulation (DM), Basic principle of delta modulation system,	24/05 ,26/05/23		
39	advantages of delta modulation system over PCM system. Limitations of delta modulation	29/05 ,30/05/23		
40	concept of adaptive delta modulation (ADM)	31-05,02-06-23		

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LESSION PLAN

Branch- EEE

Sem-6th

Subject: Electrical Power System-II

Subject Teacher-Diksha Bansal

S.N.	TOPIC	DATE	HOD SIGN.	REMARKS
1	. Introduction to Switchgear Switchgear, Essential features of Switchgear	2/14/2023		
2	Switchgear elements and its operation	2/15/2023		
3	Bus-bar arrangements	2/17/2023		
4	Concept of short-circuit, short circuit current	20-02-2023,21-02-2023		
5	2. Power System Faults Types of faults: symmetrical faults,	22-02-2023,24-02-2023		
6	unsymmetrical faults	2/27/2023		
7	Unsymmetrical faults: Analysis of L-to-L, L-to-G and L-L-to-G faults	01-03-2023,03-03-2023		
8	Fuses Advantages and disadvantages of fuse	2/6/2023		
9	Desirable characteristics of fuse element, fuse element materials	3/7/2023		
10	Important terms related to fuse: current rating of fuse element, fusing current fusing factor	3/10/2023		
11	cut-off current, arcing time and breaking capacity	3/10/2023		
12	Types of fuse: LV fuse and HV fuse	3/13/2023		
13	LV fuse: semi-enclosed rewritable fuse and HRC fuse-their construction and working	14-03-2023,15-03-2023		
14	HV fuse: cartridge type, liquid type and metal clad type-their construction & working	17-03-2023,20-03-2023		
15	Circuit Breakers Difference between Switch, Isolator and Circuit Breakers	21-03-2023,22-03-2023		
16	Function of Isolator and Circuit breaker	24-03-2023,27-03-23		
17	Difference between Fuse and Circuit Breaker	28-03-2023,29-03-2023		
18	Arc phenomenon in circuit breaker: principles and methods of arc extinction	31-03-2023,03-04-2023		
19	Terms related to circuit breaker: arc voltage, re-striking voltage and recovery voltage	04-04-2023,05-04-2023		
20	Construction, working principles, types and applications of Air-Blast Circuit	4/10/2023		
21	Oil Circuit Breaker, Vacuum Circuit Breaker	11-04-2023,12-04-2023		
22	SF6 Circuit Breaker	4/17/2023		
23	Comparison between various types of Circuit Breakers in terms of their features and application areas.	4/18/2023		
24	Circuit breaker rating: breaking capacity, making capacity and short-time rating	4/19/2023		
25	Protective Relays Introduction: fundamental requirement of relay, function of relay	4/21/2023		
26	Electromagnetic attraction type relay	4/11/2023		
27	Electromagnetic induction type relays	4/12/2023		
28	Instantaneous relay, Inverse Time Relay	17-04-2023,18-04-23		
29	Definite Time lag relay	4/19/2023		
30	Relays Terminology: Pick-up Current, Current Setting, Plug Setting Multiplier	4/21/2023		
31	(PSM), Time Setting Multiplier (TSM), Time/PSM Curve	4/24/2023		
32	Distance or Impedance Relay: definite-distance	4/25/2023		
33	time distance impedance relay	4/26/2023		
34	Differential Relays: current differential	4/28/2023		
35	Voltage balance differential relay	01-05-2023,		
36	Brief idea of Static and Microprocessor based relays & their applications	02-05-2023,03-05-2023		
37	Protection Schemes in Power System Differential Protection Scheme for Alternators	08-05-2023 to 10-05-2023		
38	Protection Schemes for Transformer, Buchholz relay	12-05-2023,16-05-2023		
39	Merz-price voltage balance protection scheme for bus-bar and transmission line	17-05-2023 to 23-05-2023		
40	Earth fault or Leakage Protection	5/24/2023		
41	Over-voltage Protection Introduction: voltage surge, causes of overvoltage	26-05-2023,30-05-2023		
42	Lightening, lightening arresters such as rod gap, horn gap, multi-gap, expulsion type and valve type arrester	31-05-2023,02-06-2023		
43	Brief idea about surge absorber	6/3/2023		
44	Transmission Line and substation protection against over-voltages	05-06-2023 to 07-06-2023		

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LESSION PLAN

Branch- EEE

Sem-6th

Subject-Programmable logic controllers and microcontrollers

Subject Teacher-Er.Sangeeta Thakur

S.N.	TOPIC	DATE	HOD SIGN.	REMARKS
1	Introduction to PLC - Relays based logic circuits,limitations of relays based logic circuit	2/16/2023		
2	Concept of PLC, Advantages of PLCs over electromagnetic relays based logic circuits	17-02-2023,20-02-2023		
3	Different programming languages used in PLC	21-02-2023,23-02-2023		
4	rchitectural Detail and Working of PLC- Basic operation and principle of working of PLC	24-02-2023,27-02-2023		
5	Architectural details of PLC	2/28/2023		
6	Input & Output Modules in PLC	02-03-2023,03-03-2023		
7	Opto-isolation Circuit in PLC and its need	3/6/2023		
8	Memory structures in PLC	07-03-2023,09-03-2023		
9	HMI (Human Machine Interface) used in PLC system	3/10/2023		
10	Power supply requirements in PLC	3/13/2023		
11	Instructions Set - Addressing in PLC: I/O Address	3/14/2023		
12	Basic instructions: Examine ON, Examine OFF	3/16/2023		
13	, Latch/Unlatch, Output Energize, Hold ON	17-03-2023,20-03-2023		
14	Timer instructions: On delay timer, Off delay time	21-03-2023,23-03-2023		
15	retentive/non-retentive timers, resetting of timers	24-03-2023,27-03-2023		
16	Counter instructions: Up Counter	3/28/2023		
17	Down Counter, resetting of Counters	3/31/2023		
18	Comparison instructions like equal, not equal	4/3/2023		
19	greater, greater than equal, less than, less than equal	4/6/2023		
20	Ladder Logic Programming Introduction to Ladder Logic programming	4/10/2023		
21	Ladder logic programming examples based on basic instructions	11-04-2023,13-04-2023		
22	timer and counter instructions	17-04-2023,18-04-2023		
23	Applications of PLCs Description, I/O assignment and ladder logic program for the following applic	20-04-2023,21-04-2023		
24	Forward/reverse control of motor using PLC	24-04-2023,25-04-2023		
25	Process Control (Stirred tank Heating Control)	27-04-2023,28-04-2023		
26	Car parking control	1-05-2023,02-05-2023		
27	Doorbell operation	5/4/2023		
28	Traffic light control	5/8/2023		
29	8051 Micro Controller – Overview Difference between Microprocessor & Microcontroller	5/9/2023		
30	Architectural Detail of 8051 microcontroller	5/11/2023		
31	Pin details of 8051 microcontroller	5/12/2023		
32	I/O Port Structure	5/15/2023		
33	Memory Organization in 8051	5/16/2023		
34	Special Function Registers	5/18/2023		
35	Instructions in 8051 Microcontroller	5/19/2023		
36	Addressing Modes in 8051 Microcontroller	5/23/2023		
37	Timer operation , Interrupts in 8051	5/25/2023		
38	Assembly language programming in 8051 Microcontroller Structure of Assembly Language	5/26/2023		
39	Assemblers and Compilers	6/1/2023		
40	Assembler Directives	6/2/2023		
41	Design and interface using 8051 Microcontroller-Keypad interface	6/5/2023		
42	7- Segment interface, Stepper Motor interface	6/6/2023		
43	Introduction to PIC Microcontroller and Arduino board	6/8/2023		

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Branch- EEE

Sem-6th

Subject - Utilization of Electrical Energy

Subject Teacher-Er.Om prakash

S.N.	TOPIC	DATE	HOD SIGN.	REMARKS
1	Advantages of Electric Drives	2/15/2023		
2	Characteristics of different mechanical loads	2/16/2023		
3	Types of Motors used as electric drive	2/17/2023		
4	Electric braking	2/20/2023		
5	Plugging	2/22/2023		
6	Rheostatic braking	2/23/2023		
7	Regenerative braking	2/24/2023		
8	Methods of power transfer by direct coupling by using devices like belt drive, gears, chain drives	2/27/2023		
9	Selection of motors for different types of domestic loads	3/1/2023		
10	Selection of drive for applications such as general workshop, textile mill, paper mill,	3/2/2023		
11	steel mill, printing press, cranes and lift. Applications of flywheel.	3/3/2023		
12	Nature of light, visibility spectrum curve of relative sensitivity of human eye and wave length of light	3/6/2023		
13	Definition: Luminous flux, solid angle, luminous intensity, illumination, luminous efficiency,	3/9/2023		
14	depreciation factor, coefficient of utilization, space to height ratio, reflection factor, glare, shadow, lux level.	3/10/2023		
15	Laws of Illumination	3/13/2023		
16	Different type of lamps, construction and working of incandescent and discharge lamps– their characteristics,	3/15/2023		
17	fittings required for filament lamp, mercury vapor, sodium lamp, fluorescent lamp,	3/16/2023		
18	halogen lamp, neon lamp, Compact fluorescent lamp, LED lamps.	3/17/2023		
19	Main requirements of proper lighting; absence of glare, contrast and shadow	3/20/2023		
20	Illumination requirement for street lighting, flood lighting, monument lighting and decorative lighting.	3/22/2023		
21	LED based lighting systems, advantages of LED based lighting	3/23/2023		
22	Advantages of Electrical Heating	3/24/2023		
23	Electrical Heating Methods	3/27/2023		
24	Resistance heating – direct and indirect resistance heating, electric ovens, their temperature range,	3/29/2023		
25	properties of resistance heating elements, thermostat control circuit	3/31/2023		
26	Induction Heating: Principle of core type and coreless induction furnace, their construction and applications	4/3/2023		
27	Electric Arc Heating: direct and indirect arc heating, construction, working and applications of arc furnace.	4/5/2023		
28	Dielectric heating: working principle and applications in industrial fields	4/4/2023		
29	Infra-red heating and its applications	4/6/2023		
30	Microwave heating and its applications	4/10/2023		
31	Electric Welding	4/12/2023		
32	Advantages of Electric Welding	4/13/2023		
33	Welding methods	4/17/2023		
34	Principles of resistance welding, types – spot, projection, seam and butt welding, welding equipment	4/19/2023		
35	Electric Heating	4/20/2023		
36	Principle of arc production, electric arc welding, characteristics of arc; carbon arc, metal arc,	4/21/2023		
37	hydrogen arc welding method and their applications. Power supply requirement.	4/24/2023		
38	Advantages of using coated electrodes, comparison between AC and DC arc welding,	4/26/2023		
39	welding control circuits, welding of aluminum and copper materials	4/27/2023		
40	Need of Electro-deposition	4/28/2023		
41	Laws of Electrolysis, process of electro-deposition - clearing, operation, deposition of metals, polishing and buffing	5/1/2023		
42	Equipment and accessories for electroplating	5/3/2023		
43	Factors affecting electro-deposition	5/4/2023		
44	Electroplating of non-conducting materials	5/8/2023		
45	Electrical Circuits used in Refrigeration, Air Conditioning and Water Coolers	5/10/2023		
46	Principle of air conditioning, vapor pressure, refrigeration cycle, eco-friendly refrigerants	5/11/2023		
47	Description and Working of Electrical circuits used	5/12/2023		
48	Refrigerator	5/15/2023		
49	Air-conditioner	5/17/2023		
50	Water cooler	5/18/2023		
51	Requirements of ideal Traction System, Different systems of electric traction, DC and AC systems, diesel electric system,	5/19/2023		
52	types of services – urban, sub-urban, and main line and their speed-time curves, Advantages of Electric Traction	5/24/2023		
53	Different accessories for track electrification; such as overhead catenary wire, conductor rail system, current collector-pantograph	5/25/2023		
54	Electrical block diagram of an Electric Locomotive with description of various equipment and accessories used	5/26/2023		
55	Types of motors used for electric traction	5/29/2023		
56	Starting and braking of electric locomotives	5/31/2023		
57	Introduction to EMU (Electrical Multiple Unit) and Metro Railway	6/1/2023		
58	Modern Electrical Traction systems, their features and advantages	6/2/2023		

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