

Lesson Plan

Name of faculty: Sh. Anit Kumar

Subject: CS

Week	Lecture Day	Theory	Practical	Topic
1st	1	Classification of transmitters	1st	To observe the waveforms at different stage of a AM transmitter.
	2	AM transmitters		
	3	Reactance FET		
2nd	4	Armstrong FM transmitters		
	5	Super heterodyne AM receiver		
	6	Sensitivity, Selectivity		
3rd	7	Fidelity,S/N Ratio	2nd	To observe the waveforms at different stage of a Radio Receiver.
	8	Image Rejection Ratio		
	9	Revision/Test		
4th	10	ISI standards		
	11	Intermediate frequency (IF)		
	12	FM receiver		
5th	13	Need for limiting and de-emphasis	3rd	To align AM broadcast radio receiver.
	14	Communication receivers		
	15	Broadcast receivers		
6th	16	Electromagnetic spectrum		
	17	Radiation of electromagnetic energy		
	18	Polarization of EM Waves		
7th	19	Revision/Test	4th	To identify and study the various types of antennas used in different frequency ranges.
	20	Point source, Gain directivity		
	21	Aperture, Effective area		
8th	22	Radiation pattern, beam width	5th	To plot the radiation
9th	23	Radiation resistance, Loss resistance		pattern of a directional and Omni directional antenna.
	24	Half wave dipole, medium wave (mast) antenna, folded dipole		
	25	Patch, loop antenna, yagi and ferrite rod antenna		
	26	Broad-side and end fire arrays		
	27	Rhombic antenna and dish antenna		
	28	Different modes of wave propagation		
10th	29	Ground wave propagation	6th	To plot the variation of field strength of a radiated wave, with distance from a transmitting antenna.
	30	Revision/Test		
	31	Space wave communication		

11th	32	Concept of effective earth radius range	7th	Installation of Dish Antenna for best reception.		
	33	Duct propagation				
12th	34	sky wave propagation				
	35	Virtual height, critical frequency				
	36	Skins distance, maximum usable frequency				
13th	37	Multiple hop propagation				
	38	PCM				
	39	DPCM				
14th	40	DELTA Modulation			8th	To observe waveforms at input and output of ASK and FSK modulators.
	41	ASK, FSK				
	42	PSK				
15th	43	QPSK				
	44	Spread spectrum techniques				
	45	Frequency hopping technique				

Lesson Plan

Name of the faculty : Mr. Yogender singh

Semester : 4th

Subject : Instrumentation

Lesson Plan Duration : 15 weeks

Week	Theory	
	Lecture day	Topic (Including assignment/test)
1st	1st	Importance and need of measurement
	2nd	Basic measurement system Advantages and limitation of each measuring system
	3rd	Generalized measurement system, Signal conditioning system
2nd	4th	Display devices, Introduction of transducer, importance of transducer
	5th	Characteristics of transducer ,construction
	6th	Use of resistance, inductance transducer
3rd	7th	Use of capacitive ,electromagnetic transducer
	8th	Use of piezo electric type transducer,application of transducer
	9th	Displacement Measuring Devices: wire wound potentiometer
4th	10th	Assignment work
	11th	Assignment work
	12th	Sessional test
5th	13th	LVDT, strain gauges
	14th	Different types such as inductance type, resistive type
	15th	Capacitive type,wire and foil type
6th	16th	Different types of force measuring devices and their principle
	17th	load measurements by using elastic transducers and electrical strain gauges
	18th	Gauge factor, gauge materials and their selections
7th	19th	Use of electrical strain gauges
	20th	strain gauge bridges and amplifiers

	21th	Different types of force measuring devices and their principles
8th	22th	load measurements by using elastic transducers and electrical strain gauges
	23th	Load cells, measurements of torque by brake, dynamometer
	24th	electrical strain gauges
9th	25th	Assignment work
	26th	Assignment work
	27th	Sessional test
10th	28th	speed measurements; different methods, devices.
	29th	Bourdon pressure gauges
	30th	Electrical pressure pick ups and their principle
11th	31th	Construction and applications. Use of pressure cells.
	32th	Basic principles of magnetic
	33th	Ultrasonic flow meters
12th	34th	Bimetallic thermometer
	35th	Thermoelectric thermometers, resistance thermometers
	36th	Thermocouple, thermistors
13th	37th	Pyrometer, Temperature recorders
	38th	Measurement of other non electrical quantities such as humidity
	39th	Measurement of other non electrical quantities such as pH
14th	40th	Measurement of other non electrical quantities such as level
	41th	Inductive & capacitive method of level measurement
	42th	Measurement of other non electrical quantities such as vibrations
15th	43th	Assignment work
	44th	Assignment work

Lesson Plan

Name of faculty: Sh. Yogender Singh

Subject: Medical Electronics

Week	Theory	Practical
	Topic (including assignment / test)	Topic
1st	Introduction to Anatomy and Physiology	Operate and Feminization with B.P Apparatus and ECG Machine
	Elementary ideas of Cell Structure	
	Heart and Circulatory System	
	Central Nervous System	
	Muscle Action	To measure the Concentration of Blood sugar with Glucometer
	Respiratory System	
	Body temperature and Reproduction System	
	Overview of Medical Electronics Equipments	
2nd	Classification, application and specification of laboratory Equipments	
	Classification, application and specification of therapeutic Equipments	
	Classification, application and specification of clinical Equipments	
	Method of operation of these instruments	
3rd	Revision for 1 st Sessional, Classwork check and Assignment evaluation	Measuring of Respiration Rate
	Introduction to Electrodes	
	Bioelectric Signals	
	Bio electrodes	
4 th	Electrode	
	Electrode Tissue Interface	
5 th	Contact Impedance	Measuring of Pulse Rate
	Types of Electrodes	
6 th	Electrodes used for ECG	
	Electrodes used for EEG	
	Introduction to Transducers	
	Typical Signals from Physiological Parameters	
7 th	Concept of Pressure Transducer	
	Concept of Flow Transducer	
	Concept of Temperature Transducer	

	Concept of Pulse Sensor	Study of Large Medical Equipments in Hospitals	
8 th	Study of Respiration Sensor	Installation of Small Medical Equipments in Hospitals	
	Introduction to Biomedical Recorders		
	ECG Machine and its diagram description and application		
	EEG Machine and its diagram description and application		
9 th	EMG Machine and its diagram description and application		
	revision , Class work check and assignment evaluation		
	Introduction to Patient Monitoring System		
	Heart rate Measurement		
10 th	Pulse rate Measurement		Operation and use of Electro-physiotherapy
	Respiration rate Measurement		
	Blood Pressure Measurement		
	Principle of defibrillator and Pace Mark		
11 th	Use of Microprocessor in Patient Monitoring		
	Blood Sugar Measurement		
	Study of Safety Aspects of Medical Instruments		
	Concept of Gross current Shock		
12 th	Concept of Micro current Shock		
	Study about special design from safety consideration		
	Concept of Safety Standards		
	Revision of Monitoring System for Various Measurements		
13 th	Instrumentation Handling Methods	Maintenance Schedule for	
	Revision Class work check and Assignment evaluation	different equipment and their records in Hospital	
	Class work check		
	Assignment Evaluation		
	Revision of full syllabus		
14 th	Old question papers Solved		
	Final question Answers Evaluation from students		
	Examination Attemptation Techniques		
	Revision of full syllabus		
15 th	Old question papers solution		

B.K.N.GOV'T POLYTECHNIC NARNAUL

Lesson Plan

Name of faculty Mrs.Shikha Sharma
Discipline Electronics and Communication Engg.
Semester 4th
Subject MICROPROCESSORS AND PERIPHERAL DEVICES
Lesson plan duration 15 week (from March 2021 to July 2021)

Week	Theory		Practical	
	Lecturer day	Topic (including assignment/test)	Practical day	Topic
1st	1	1.Evolution of Microprocessor	1st	Familiarization of different keys of 8085 microprocessor kit and its memory map
	2	Typical organization of a microcomputer system and functions of its various blocks		
	3	Microprocessor, its evolution and function Impact of Microprocessor on modern society *Assignment Topic		
2nd	4	2.Architecture of a Microprocessor (With reference to 8085 microprocessor)	2nd	Steps to enter, modify data/program and to execute a programme on 8085 kit
	5	Architecture of a Microprocessor (With reference to 8085 microprocessor)		
	6	Concept of Bus, bus organization of 8085,		
3rd	7	Functional block diagram of 8085 and function of each block *Assignment Toppic	3rd	Writing and execution of ALP for addition and sub station of two 8 bit numbers
	8	Pin details of 8085 and related signals		
	9	Demultiplexing of address/data bus Demultiplexing of address/data bus		
4th	10	Generation of read/write control signals	4th	Writing and execution of ALP for multiplication and division of two 8 bit numbers
	11	Steps to execute a stored programme		
	12	Revision of Unit 2		
5th	13	3.Instruction Timing and Cycles (Basic Introduction)	5th	Writing and execution of ALP for arranging 10 numbers in ascending/descending order
	14	Instruction cycle machine cycle		
	15	T-states		
6th	16	Fetch and execute cycle Comparison between all the cycles	6th	Writing and execution of ALP for 0 to 9 BCD counters (up/down counter according to choice stored in memory)
	17	Revision of Unit 3		
	18	4.Programming (with respect to 8085 microprocessor) Brief idea of machine and assembly languages, Machines and Mnemonic codes		
7th	19	Instruction format and Addressing mode	7th	Interfacing exercise on 8255 like LED display control
	20	Identification of instructions as to which addressing mode they belong		
	21	Identification of instructions as to which addressing mode they belong		
8th	22	Concept of Instruction set	8th	Interfacing exercise on 8253 programmable interval timer
	23	Explanation of the instructions of the following groups of instruction set		
	24	Explanation of the instructions of the following groups of instruction set Data transfer group,		
9th	25	Arithmetic Group, Logic Group	9th	Interfacing exercise on 8279 programmable KB/display interface like to display the hex code of key pressed on display
	26	Stack, I/O and Machine Control Group		
	27	Programming exercises in assembly language (with the help of examples)		
10th	28	Programming exercises in assembly language (with the help of examples)	10th	Use of 8085 emulator for hardware testing
	29	Revision of unit 4		
	30	5.Memories and I/O Interfacing Concept of memory mapping,		
11th	31	partitioning of total memory space	11th	Writing and execution of ALP for addition and sub station of two 8 bit numbers
	32	Address decoding		
	33	concept of peripheral mapped I/O and memory mapped I/O * Assignment Topic		
12th	34	Interfacing of memory mapped I/O devices	12th	Writing and execution of ALP for multiplication and division of two 8 bit numbers
	35	Revision		

	36	6.Interrupts Concept of interrupt, Maskable and non-maskable		Writing and execution of ALP for arranging 10 numbers in ascending/descending order
13th	37	Edge triggered and level triggered interrupts, Software interrupt, Restart interrupts and its use	13th	Writing and execution of ALP for 0 to 9 BCD counters (up/down counter according to choice stored in memory)
	38	Various hardware interrupts of 8085 Servicing interrupts, extending interrupt system		
	39	7.Data Transfer Techniques Concept of programmed I/O operations,		
14th	40	sync data transfer, async data transfer (hand shaking)	14th	Interfacing exercise on 8255 like LED display control
	41	Interrupt driven data transfer, DMA Serial output data, Serial input data		
	42	8.Peripheral Devices 8255 PPI and 8253 PIT		
15th	43	8257 / 8237 DMA controller	15th	Writing and execution of ALP for 0 to 9 BCD counters (up/down counter according to choice stored in memory)
	44	9.Architecture of 8086 Microprocessor -Block Diagram -Minimum and Maximum Mode		
	45	-Pin and Signals		

NAME OF THE FACULTY : ANIL KUMAR
DISCIPLINE : ECE
SEMESTER : IV
SUBJECT : POWER ELECTRONICS
LESSON PLAN DURATION : - 15 weeks

WEEK	THEORY		Practical
	Lecture / Hrs	TOPIC (Including Assignment/Test)	Experiment
1 st	1	Introduction to Thyristors and other Power Electronics Devices	To plot V-I characteristic of an SCR.
	2	Construction, Working principle of SCR	
	3	Two transistor analogy of SCR, V-I characteristics of SCR.	To plot V-I characteristic of an SCR.
2 nd	4	SCR specifications and ratings, Different methods of SCR triggering	To plot V-I characteristics of TRIAC
	5	Different commutation circuits for SCR, Series and parallel operation of SCR	
	6	Construction and working principle of DIAC.	To plot V-I characteristics of TRIAC
3 rd	7	Construction and working principle of DIAC, TRIAC	To plot V-I characteristics of UJT.
	8	DIAC, TRIAC and their V-I characteristics	
	9	Construction, working principle of UJT, V-I characteristics of UJT. UJT as relaxation oscillator	To plot V-I characteristics of UJT.
4 th	10	Brief introduction to Gate Turn off Thyristor (GTO), Programmable Uni-junction Transistor (PUT), MOSFET	To plot V-I characteristics of DIAC
	11	Basic idea about the selection of Heat Sink for Thyristors	To plot V-I characteristics of DIAC
	12	Applications such as light intensity control, speed control of universal motors, fan regulator, battery charger.	
	15	Controlled Rectifiers Introduction	Revision Experiment Performed

6 th	16	Single phase half wave controlled rectifier with load (R)	Study of UJT relaxation oscillator. And observe I/P and O/P wave forms
	17	Single phase half wave controlled rectifier with load (R-L)	
	18	Single phase half controlled full wave rectifier with load (R)	Study of UJT relaxation oscillator. And observe I/P and O/P wave forms
7 th	19	Single phase half controlled full wave rectifier with load (R-L)	Observation of wave shape of voltage at relevant point of single-phase half wave controlled
	20	Fully controlled full wave bridge rectifier.	
	21	Single phase full wave centre tap rectifier	Observation of wave shape of voltage at relevant point of single-phase half wave controlled
8 th	22	Inverters, Choppers,	Observation of wave shapes and measurement of voltage at relevant points in TRIAC based.
	23	Dual Converters and Cyclo-converters	
	24	Principle of operation of basic inverter circuits	Observation of wave shapes and measurement of voltage at relevant points in TRIAC based
9 th	25	Concepts of duty cycle, series and parallel	Revision Experiment Performed
	26	Inverters and their applications	
	27	Choppers: Introduction, types of choppers (Class A)	Revision Experiment Performed
10 th	28	Choppers: Introduction, types of choppers (Class B, Class C and Class D)	Revision Experiment Performed
11 th	31	Step up and Step down choppers	Installation of UPS system and routine maintenance of batteries.
	32	Dual Converters and cyclo converters: Introduction, types and basic working principle of Dual converters and cyclo Converters.	
	33	Dual converters and cyclo converters and their applications	Installation of UPS system and routine maintenance of batteries.

12 th	34	Thyristorised Control of Electric drives: Introduction	Revision Experiment Performed
	35	DC drive control, Half wave drives	
	36	Full wave drives, Chopper drives (Speed control of DC motor using choppers)	Revision Experiment Performed
13 th	37	AC drive control, Phase control	Revision Experiment Performed
	38	Constant V/F operation, Cycloconverter /Inverter drives	
	39	Un interrupted Power Supply (UPS): Introduction	Revision Experiment Performed
14 th	40	UPS: Block Diagram & specifications of on-line	Revision Experiment Performed
	41	UPS: Block Diagram & specifications of Off line UPS	
	42	UPS: Block Diagram & specifications of Smart UPS	Revision Experiment Performed
15 th	43	Concept of high voltage DC transmission	Revision Experiment Performed