Lesson Plan

Name of Faculty : Dinesh Kumar

Discipline : Electronics & Communication Engg

Semester : 4th

Subject : **MICROPROCESSOR AND PERIPHERAL DEVICES**

Lesson Plan Duration : 15weeks

Work Load (Lecture /Practical) per week in hours : Lecture : 3 Practical : 3

Week	**Theory**		**Practical**	
	Lecture Day	**Topic (Including assignment/test)**	**Practical Day**	**Topic**
1st	1st	Evolution of Microprocessor Introduction		
	2nd	Typical organization of a microcomputer system and functions of its various blocks.		
	3rd	Microprocessor, its evolution,		
	4th	function and impact on modern society		
			1st	Familiarization of different keys of 8085 microprocessor kit and its memory map
2nd	5th	Architecture of a Microprocessor		
	6th	Architecture of a Microprocessor		
	7th	Concept of Bus,		
	8th	bus organization of 8085,		
			2nd	Steps to enter, modify data/program and to execute a programme on 8085 kit
3rd	9th	Functional block diagram of 8085		

	10th	function of each block, ,		
	11th	Pin details of 8085 and related signals,		
	12th	Demultiplexing of address/data bus		
			3rd	Writing and execution of ALP for addition and sub station of two 8 bit numbers
4th	13th	generation of read/write control signals		
	14th	generation of read/write control signals Instruction cycle,.		
	15th	Steps to execute a stored programme		
	16th	Steps to execute a stored programme		
			4th	Writing and execution of ALP for multiplication and division of two 8 bit numbers
5th	17th	Instruction Timing and Cycles Inroduction		
	18th	Instruction Cycles Programming (with respect to 8085 microprocessor) Introduction		
	19th	Instruction Cycles		
	20th	machine cycle		
			5th	Writing and execution of ALP for arranging 10 numbers in ascending/descending order
6th	21th	T-states.		
	22th	Fetch cycle		

	23th	execute cycle		
	24th	execute cycle		
			6th	Writing and execution of ALP for 0 to 9 BCD counters (up/down counter according to choice stored in memory)
7th	25th	Brief idea of machine and assembly languages.Group		
	26th	Machines and Mnemonic codes.,		
	27th	Machines and Mnemonic codes.		
	28th	Instruction format and Addressing mode Examples can be taken from the list of experiments).		
			7th	Interfacing exercise on 8255 like LED display control
8th	29th	Identification of instructions as to which addressing mode they belong		
	30th	Identification of instructions as to which addressing mode they belong		
	31th	Identification of instructions as to which addressing mode they belong		
	32th	Concept of Instruction set.		
			8th	Interfacing exercise on 8253 programmable interval timer
9th	33th	Explanation of the instructions of the following groups of instruction set.		
	34th	Data transfer group,		
	35th	Data transfer group,		
	36th	Arithmetic group		
			9th	Interfacing exercise on 8279 programmable KB/display interface like to display the hex code of key pressed on display

10th	37th	Logic Group instruction		
	38th	Stack,		
	39th	, I/O and Machine Control Group		
	40th	Programming exercises in assembly language		
			10th	Use of 8085 emulator for hardware testing
11th	41th	Concept of memory mapping, partitioning of total memory space.		
	42th	Address decoding,		
	43th	concept of peripheral mapped I/O and memory mapped I/O. .		
	44th	concept of peripheral mapped I/O and memory mapped I/O. .		
			11th	
12th	45th	concept of peripheral mapped I/O		
	46th	concept of peripheral memory mapped I/O. .		
	47th	Interfacing of memory mapped I/O		
	48th	Interfacing of memory mapped I/O		
			12th	
13th	49th	Concept of interrupt, Maskable and non-maskable		
	50th	Edge triggered and level triggered interrupts,oftware interrupt		

	51th	Restart interrupts and its use, Various hardware interrupts of 8085,		
	52th	Servicing interrupts, extending interrupt system		
			13th	
14th	53th	Concept of programmed I/O operations		
	54th	.sync data transfer, async data transfer (hand shaking),		
	55th	Interrupt driven data transfer, DMA		
	56th	Serial output data , Serial input data ,		
			14th	
15th	57th	8255 PPI and 8253 PIT,		
	58th	8257 / 8237 DMA controller,		
	59th	8279 Programmable KB/Display Interface,		
	60th	8251 Communication Interface Adapter8255		

Lesson Plan

Name of Faculty : Smt. Bunty

Discipline : Electronics & Communication Engg

Semester : 4th

Subject : **INSTRUMENTATION**

Lesson Plan Duration : 15 weeks

Work Load (Lecture /Practical) per week in hours : Lecture :3 Practical : 3+3

Week	Theory		Practical	
	Lecture Day	**Topic (Including assignment/test)**	**Practical Day**	**Topic**
1st	1st	**Measurements:** Inroduction	1st (G-1)	Introduction
	2nd	Importance of measurement, basic measuring systems,	2nd (G-2)	Introduction
	3rd	advantages and limitations of each measuring systems		
2nd	4th	display devices, Tranducer	3rd (G-1)	To Study &Draw the characteristics of a potentiometer
	5th	Resistance transducers , inductance transducers	4th (G-2)	To Study &Draw the characteristics of a potentiometer
	6th	Capacitance transducers, electromagnetic, piezo electric type		
3rd	7th	Displacement Measuring Devices:	5th (G-1)	Study of variable capacitive transducer
	8th	LVDT, Assignment-I	6th (G-2)	Study of variable capacitive transducer
	9th	strain gauges and their different types such as inductance type, resistive type,		
4th	10th	Wire and foil type etc. Gauge factor	7th (G-1)	To measure linear displacement using LVDT
	11th	Gauge materials and their selections. Use of electrical strain gauges,	8th (G-2)	To measure linear displacement using LVDT

	12th	Strain gauge bridges and amplifiers Problem Discussion		
5th	13th	Force and Torque Measurement, Different types of force measuring devices and their principles	9h (G-1)	To study the use of electrical strain gauge
	14th	load measurements by using elastic transducers and electrical strain gauges.	10th (G-2)	To study the use of electrical strain gauge
	15th	Load cells, measurements of torque		
6th	16th	measurements of torque by brake, dynamometer,	11th (G-1)	Revision work
	17th	Revision & Problem Discussion	12th (G-2)	Revision work
	18th	electrical strain gauges,		
7th	19th	speed measurements	13th (G-1)	To study weighing machine using load cell
	20th	Speed measurements; different methods, devices.	14th (G-2)	To study weighing machine using load cell
	21th	Discussion, Revision, Problem related to chapter		
8th	22th	Pressure Manegement, Bourdon pressure gauges	15th (G-1)	Use of thermistor in on/off transducer
	23th	Class Test	16th (G-2)	Use of thermistor in on/off transducer
	24th	electrical pressure pick ups		
9th	25th	Principle, construction and applications. electrical pressure pick ups	17th (G-1)	Revision
	26th	Use of pressure cells. Problem Discussion	18th (G-2)	Revision
	27th	Flow Measurement Introduction, Assignment-II		
10th	28th	principles of magnetic and ultrasonic flow meters	19th (G-1)	To measure temperature using a thermo-couple
	29th	Basic principles of magnetic and ultrasonic flow meters	20th (G-2)	To measure temperature using a thermo-couple
	30th	Measurement of Temperature		
11th	31th	Bimetallic thermometer construction and its working	21th (G-1)	To measure temperature using a thermo-couple
	32th	Thermoelectric thermometers	22th (G-2)	To measure temperature using a thermo-couple

	33th	resistance thermometers, principle & working		
12th	34th	thermocouple, thermisters	23th (G-1)	Study and use of digital temperature controller
	35th	Pyrometer thermisters	24th (G-2)	Study and use of digital temperature controller
	36th	Temperature recorders Discussion,		
13th	37th	Revision	25th (G-1)	To study pH meter
	38th	Measurement of other non electrical quantities	26th (G-2)	To study pH meter
	39th	Measurement of humidity, pH level		
14th	40th	Measurement of vibrations	27th (G-1)	Revision
	41th	Assignment-III, Revision	28th (G-2)	Revision
	42th	Revision		
15th	43th	Class test	29th (G-1)	Viva
	44th	Revision , Seminar, Discussion of Test	30th (G-2)	Viva
	45th	Revision , Seminar		

Name of Faculty : Smt. Suresh Rani

Discipline : Electronics & Communication Engg

Semester : 4th

Subject : **CUMMUNICATION SYSTEM**

Lesson Plan Duration : 15Weeks

Work Load (Lecture /Practical) per week in hours : Lecture :3 Practical : 3+3

Week	Theory		Practical	
	Lecture Day	Topic (Including assignment/test)	Practical Day	Topic
1st	1st	**AM/FM Transmitters** Introduction	1st (G-1)	Introduction
	2nd	Classification of transmitters on the basis of modulation, service,	2nd (G-2)	Introduction
	3rd	Classification of transmitters on the basis of frequency and power		
2nd	4th	Block diagram of AM transmitters and Armstrong FM transmitters ,FET	3rd (G-1)	To observe the waveforms at different stages of a AM transmitter
	5th	principles and working AM Superhet rodyne Rx and waveform	4th (G-2)	To observe the waveforms at different stages of a AM transmitter
	6th	Performance characteristics of a radio receiver: sensitivity, selectivity, fidelity, S/N ratio,image rejection ratio and their measurement procedure.		
3rd	7th	ISI standards of radio receivers and selection criteria of IF,Rx for FM signals	5th (G-1)	To observe the waveforms at different stages of a Radio Receiver
	8th	FM supernet rodyne Rx ,wavr form, Need for limiting and de-emphasis in FM reception	6th (G-2)	To observe the waveforms at different stages of a Radio Receiver
	9th	Block diagram of communication receivers, differences with respect to broadcast receivers		
4th	10th	Revision, Problem Duscussion and Assignment-I	7th (G-1)	Revision
	11th	Antenna Electromagnetic spectrum and its various ranges: VLF, LF, MF, HF, VHF, UHF, Microwave.	8th (G-2)	Revision

	12th	Radition from Dipole, Polarization of EM waves,Point Source		
5th	13th	gain directivity, aperture, effective area, radiation pattern,	9th (G-1)	To study aligning AM broadcast radioreceiver
	14th	beam width and radiation resistance loss resistance.	10th (G-2)	To study aligning AM broadcast radioreceiver
	15th	half wave dipole antenna, medium wave (mast) antenna,		
6th	16th	folded dipole, patch antenna, and their radiation pattern	11th (G-1)	To identify and study the various types of antennas used in different frequency ranges
	17th	loop antenna yagi antenna and their radiation pattern	12th (G-2)	To identify and study the various types of antennas used in different frequency ranges
	18th	ferrite rod antenna (used in transistor receivers, broad-side array & radiation pattern		
7th	19th	end fire arrays, Rhombic antenna their radiation pattern,	13th (G-1)	Viva
	20th	dish antenna in detail	14th (G-2)	Viva
	21th	Class test		
8th	22th	Propagation Basic idea about different modes of wave propagation and typical areas of application	15th (G-1)	To plot the radiation pattern of a directional and omni directional antenna
	23th	Ground wave propagation and its characteristics, summer field equation for field strength	16th (G-2)	To plot the radiation pattern of a directional and omni directional antenna
	24th	Space wave communication – line of sight propagation, standard atmosphere,		
9th	25th	Concept of effective earth radius range of space wave propagation standard atmosphere	17th (G-1)	Revision
	26th	. Duct propagation: sky wave propagation, ionosphere and its layers	18th (G-2)	Revision
	27th	virtual height, critical frequency, skips distance		
10th	28th	maximum usable frequency, multiple hop propagation	19th (G-1)	To plot the variation of field strength of a radiated wave, with distance from a transmitting antenna..
	29th	Assignment-II, Revision,Problem Discussion	20th (G-2)	To plot the variation of field strength of a radiated wave, with distance from a transmitting antenna..
	30th	Digital vs Analolg Modulation Techniques		

11th	31th	Satellite Communications: Basic idea, passive and active satellites,	21th (G-1)	Revision and viva
	32th	Meaning of the terms; orbit, apogee, perigee	22th (G-2)	Revision and viva
	33th	Geo-stationary satellite and its need		
12th	34th	Block diagram and explanation of a satellite communication link.	23th (G-1)	To study different faults in a broadcast radio receiver
	35th	Introduction to VSAT and its features.	24th (G-2)	To study different faults in a broadcast radio receiver
	36th	Revision		
13th	37th	Revision	25th (G-1)	Revision
	38th	Class Test-II, Assignment-III	26th (G-2)	Revision
	39th	Revision & Problem Discussion		
14th	40th	Revision	27th (G-1)	Revision
	41th	Oral Test	28th (G-2)	Revision
	42th	Revision and Problem Discussion		
15th	43th	Class test	29th (G-1)	Revision
	44th	Revision	30th (G-2)	Revision
	45th	Class test		