LESSON PLAN

Name of Faculty : JYOTI SINGLA
Discipline : Electronics & Communication Engg.
Semester : 2nd
Subject : Electronic Devices & Circuits
Lesson Plan Duration : 16 weeks
Work load (Lecture /Practical) per week (in hours): Lectures—03, Practical—03

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignment/ Test	Practical Day	Topic
1st	1	Review of Amplifiers	1	Review of Lab/ Practicals.
	2	Need for multistage amplifier & Gain of multistage amplifier		
	3	RC coupled multistage amplifier, its frequency response and bandwidth		
2nd	4	Transformer coupled Multistage Amplifier, its frequency response and bandwidth.	2	Plot the frequency response of two stage RC coupled amplifier and calculate the bandwidth and compare it with single stage amplifier.
	5	Direct coupled multistage amplifier, its frequency response and bandwidth.		
	6	Difference between voltage and power amplifiers, Importance of impedance matching in amplifiers.		
3rd	7	Class A & Class B amplifiers,	3	To measure the gain of push-pull amplifier at 1 KHz.
	8	Class AB and Class C amplifiers, collector Efficiency & Distortion in Class A, B, C amplifiers.		
	9	Single ended Power amplifiers, Graphical method of calculation (without derivation) of output power, heat dissipation curve an importance of heat sinks.		
4th	10	Push Pull Amplifier	4	Revision / File Assessment
	11	Complementary Symmetry Push-Pull amplifier.		
	12	Assignment topic/Test/Quiz.		
5th	13	Basic principal and types of feedback, derivation of expression for gain of an amplifier employing feedback	5	To measure the voltage gain of emitter follower circuit and plot its
	14	Effect of feedback (negative) on gain,		

		stability, distortion and bandwidth of and amplifier.		frequency.
	15	RC coupled amplifier with emitter bypass capacitor.		
6th	16	Emitter follower amplifier and its application.	6	Revision
	17	Assignment –Topic & Class work Checking		
	18	Expert lecture		
7th	19	Sessional Test	7	Plot the frequency response curve of Hartley and Colpitt's Oscillator
	20	Use of positive feedback, Bark-hausen criterion for oscillations.		
	21	Working principle of Tunned Collector Oscillator		
8th	22	Working principle of Hartley and Colpitt's Oscillator Circuits.	8	Plot the frequency response curve of phase shift and Wein bridge Oscillator.
	23	Working principle of Phase shift and wein- bridge Oscillator Circuits.		
	24	Working principle of crystal Oscillator Circuit.		
9th	25	Revision	9	Revision
	26	Series and parallel resonant circuit and bandwidth of resonant circuits.		
	27	Single tuned voltage amplifier & its frequency response.		
10th	28	Double tuned voltage amplifier & its frequency response.	10	Use of IC 555 as monostable multivibrator and observe the output for different values
	29	Expert Lecture		
	30	Working principle of transistor as switch.		
11th	31	Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications.	11	Use of IC as a stable multivibrator and observe the output at different duty cycles.
	32	Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications.		
	33	Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications.		
12th	34	Block diagram of IC555 and its working and applications.	12	Revision
	35	IC555 as monostable and astable multi-vibrator and bistable multivibrator.		

	36	Assignment topic/sessional.		
13th	37	Characteristics of an ideal operational amplifier and its block diagram.	13	To use IC 741 (op-amp) as 1.Inverter 2. Adder 3.Subtractor 4.Integrator
	38	IC-741 and its pin configuration		
	39	Definition of differential voltage gain, CMRR, PSRR, slew rate and input offset current.		
14th	40	Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator.	14	To realize positive and negative fixed voltage DC power supply using three terminal voltage regulator IC (7805, 7812
	41	Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator		
	42	Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator.		
15th	43	Concept of DC power supply, line and load regulation	15	Prototype making/ practice
	44	Concept of fixed voltage, IC regulators 9like 7805, 7905), and variable		
	45	Voltage regulator like (IC 723)		
16th	46	Revision/ seminar	16	Viva Voice
	47	Revision/ Seminar		
	48	Sessional		

Name of Faculty: MANJU KAUSHIK

Discipline: Electronics & Communication Engg.

Semester: 2nd

Subject: Electronic Instrument and Measurement (E I M)

Lesson Plan Duration: 15 weeks

Work Load (Lecture /Practical) per week in hours: Lecture: 3 Practical: 4

Week	Theory		Date of Execution	Practical		Date of Execution
	Lecture Day	Topic (Including assignment/test)		Practical Day	Topic	
1st	1st	Basics of instruments and Measurements		1st (G1)	Introduction & Familiarization with new lab equipment.	
	2nd	Method of measurement, types of instruments		2nd (G2)	Introduction & Familiarization with new lab equipment.	
	3rd	Specifications of instruments: Accuracy, precision, sensitivity, resolution, range				
2nd	4th	Errors in measurement, sources of errors, limiting errors, loading effect		3rd (G1)	Measurement of voltage, resistance and current using analog multi meter	
	5th	importance and applications of standards and calibration		4th (G2)	Measurement of voltage, resistance and current using analog multi meter	
	6th	Introduction to Voltage, Current and Resistance Measurement Moving Coil and Moving Iron Instruments				
3rd	7th	Principles of measurement of DC voltage, DC current		5th (G1)	Measurement of voltage, resistance and current using digital multi meter	
	8th	Principles of measurement of AC voltage, AC current,		6th (G2)	Measurement of voltage, resistance and current using digital multi meter	
	9th	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments				
4th	10th	Continued Principles of operation and construction of permanent magnet moving coil (PMMC) instruments		7th (G1)	Revision	
	11th	Principles of operation and construction of Moving iron type instruments,		8th (G2)	Revision	
	12th	Continued Principles of operation and construction of Moving iron type instruments, VOM Meter				
5th	13th	Introduction to Cathode Ray Oscilloscope		9th (G1)	To study the front panel controls of CRO	
	14th	Construction and working of Cathode Ray Tube(CRT)		10th (G2)	To study the front panel controls of CRO	

	15th	Continued Construction and working of Cathode Ray Tube(CRT)				
6th	16th	Block diagram description of a basic CRO and triggered sweep oscilloscope, front panel controls		11th (G1)	Measurement of voltage, frequency, time period and phase using CRO	
	17th	Continued Block diagram description of a basic CRO and triggered sweep oscilloscope, front panel controls		12th (G2)	Measurement of voltage, frequency, time period and phase using CRO	
	18th	Specifications of CRO and their Applications				
7th	19th	Measurement of current, voltage, frequency using CRO		13th (G1)	Measurement of voltage, frequency, time and phase using DSO	
	20th	Measurement of time period and phase using CRO , Lissajous pattern		14th (G2)	Measurement of voltage, frequency, time and phase using DSO	
	21st	Digital storage oscilloscope (DSO) : block diagram and working principle				
8th	22nd	Continued Digital storage oscilloscope (DSO) : block diagram and working principle		15th (G1)	Revision	
	23rd	Introduction to Impedance Bridges, Q Meter and Function Generator		16th (G2)	Revision	
	24th	Wheat stone bridge				
9th	25th	AC bridges: Maxwell's induction bridge, Hay's bridge		17th (G1)	Measurement of phase using lissajous pattern on CRO.	
	26th	AC bridges: De-Sauty's bridge,		18th (G2)	Measurement of phase using lissajous pattern on CRO.	
	27th	Block diagram and workig principle of Q meter.				
10th	28th	Explanation of block diagram, specifications of low frequency generators.		19th (G1)	Measurement of unknown resistance using Wheat Stone bridge.	
	29th	Explanation of block diagram, specifications of RF generators.		20th (G2)	Measurement of unknown resistance using Wheat Stone bridge.	
	30th	Pulse generator				
11th	31st	Function generator		21st (G1)	Measurement of Q of a coil	
	32nd	Problem Discussion		22nd (G2)	Measurement of Q of a coil	
	33rd	Revision				
12th	34th	Introduction to Digital Instruments		23rd (G1)	Measurement of inductance using Hay's Bridge.	

	35th	Comparison of analog and digital instruments		24th (G2)	Measurement of inductance using Hay's Bridge.	
	36th	Block diagram and working of a digital multi-meter				
13th	37th	Continued Block diagram and working of a digital multi-meter		25th (G1)	Measurement of inductance using Maxwell Induction Bridge.	
	38th	Applications and Limitations of digital multi-meters.		26th (G2)	Measurement of inductance using Maxwell Induction Bridge.	
	39th	Continued Applications and Limitations of digital multi-meters.				
14th	40th	Problem Discussion		27th (G1)	Measurement of capacitance using De Sauty's Bridge.	
	41st	Working principle of logic probe, logic pulser,		28th (G2)	Measurement of capacitance using De Sauty's Bridge.	
	42nd	Continued Working principle of logic probe, logic pulser				
15th	43rd	Revision		29th (G1)	Revision	
	44th	Revision		30th (G2)	Revision	
	45th	Revision				