LESSON PLAN

Name of Faculty : **Arshad Jamal**
Discipline : **Electronics & Communication Engineering**
Semester : **3rd**
Subject : **Electronic Devices & Circuits-2**
Lesson Plan Duration : **16 weeks (20th August 2024 to 6th December 2**
Work load (Lecture /Practical): **Lectures—03, Practical—02 per week (in hours)**

Week		Theory	Practical	
	Lecture Day	Topic (Including Assignment/ Test)	Practical Day	Topic
1st	1	**Unit-1** (Multistage Amplifier) Need and gain for multistage amplifier, different types of multistage amplifier.	1	Review of Lab/ Practical.
	2	Types of multistage amplifier: - RC coupled amplifier.		
	3	RC coupled amplifier, frequency response and bandwidth.		
2nd	4	Types of multistage amplifier: - Direct coupled amplifier.	2	Plot the frequency response of two stages RC coupled amplifier and calculate the bandwidth.
	5	Direct coupled amplifier and Transformer coupled amplifier.		
	6	Transformer coupled amplifier, frequency response and bandwidth.		
3rd	7	**Unit-2** (Large signal Amplifier) Difference between voltage and power amplifier, Importance of impedance matching in amplifier.	3	To measure the gain of Push-Pull amplifier.
	8	Class A, Class B, Class AB and Class C amplifiers.		
	9	Collector efficiency and distortion in amplifier.		
4th	10	Single ended power amplifiers, graphical method of calculation of output power, heat dissipation curve and its importance.	4	To measure the voltage gain of emitter follower circuit and plot its frequency response.
	11	Push-pull amplifier and complementary Push-pull amplifier.		
	12	Revision		
5th	13	Assignment topic/Test/Quiz.	5	Revision
	14	Expert lecture/Revision/ seminar		
	15	Sessional exam		
6th	16	Assignment –Topic & Class work Checking	6	To observe the output waveforms of Hartley Oscillator.
	17	**Unit-3** (Feedback in Amplifiers) Basic principles and types of feedback.		
	18	Derivation of expression for gain of an amplifier employing feedback.		
7th	19	Effect of feedback (negative) on gain, stability, distortion and bandwidth of an amplifier.	7	To observe the output waveforms of Colpitt's Oscillator.
	20	RC coupled amplifier with emitter bypass capacitor.		
	21	Emitter follower amplifier and its applications.		
8th	22	Revision / seminar	8	Revision
	23	Assignment topic/Test/Quiz.		
	24	Expert lecture/Revision		

9th	25	**Unit-4**(Sinusoidal Oscillators) Use of positive feedback.	9	To observe the output waveforms of RC phase shift Oscillator.
	26	Barkhausen criterion for oscillations, different types of oscillator.		
	27	Tuned collector oscillator and its working principle.		
10th	28	Hartley and Colpitts oscillators and its working principle.	10	To observe the output waveforms of Wein bridge Oscillator.
	29	Phase shift oscillator and its working principle.		
	30	Wien's bridge oscillator and its working principle.		
11th	31	Revision/ seminar	11	Use of IC 555 as astable MV and observe the O/P for different duty cycle.
	32	Assignment topic/Test/Quiz.		
	33	Expert lecture/Revision		
12th	34	Assignment topic/ Sessional exam.	12	Use of IC 555 as monostable MV and observe the O/P for different value of RC
	35	**Unit-5** (Multivibrator Circuits and Operational amplifiers) Working principle of transistor as a switch.		
	36	Concept of multivibrator:- Astable, Monostable and Bistable multivibrators and their applications.		
13th	37	Astable multivibrator in detail.	13	Use of IC 555 as monostable MV and observe the O/P for different value of RC
	38	Monostable and Bistable multivibrator in detail.		
	39	Pin and block diagram of IC 555, working and applications.		
14th	40	IC 555 as a Monostable and Astable multivibrator.	14	To use IC 741(OP-AMP) as an inverter, adder, subtractor and integrator.
	41	Operational amplifier: - IC 741 and its pins configuration.		
	42	Block diagram and chacteristics of ideal operational amplifier.		
15th	43	Definition of differential voltage gain, CMRR, PSRR, Slew rate and input offset current.	15	To use IC 741(OP-AMP) as a inverter, adder, subtractor and integrator.
	44	As an inverter, scale changer, adder, subtractor, differentiator and integrator.		
	45	Assignment –Topic & Class work Checking		
16th	46	Revision/ seminar	16	Viva Voice
	47	Sessional exam		
	48	Revision/ Seminar		