ARSD College, University of Delhi

Model Course Handout/Lesson Plan

Course Name : B.Sc. Electronics(H) Lab, V semester						
Semester	**Course Code**	**Course Title**	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**	**Credit (C)**
II	558	Operational Amplifiers and Application Lab (Hardware and Circuit Simulation Software)	-	-	4	2
Teacher/Instructor(s)		Ms. Saruchi Tandon				
Session		EVEN SEMESTER				

Course Description:

At the end of this course, students will be able to
CO1 Understand the non-ideal behavior by parameter measurement of Op-amp.
CO2 Design application-oriented circuits using Op-amp ICs.
CO3 Generate square wave using different modes of 555 timer IC.
CO4 Prepare the technical report on the experiments carried.

List of Experiments:

Details of the Lab Course		
Session	**Name of Experiment**	**Contact Hours**
1	Study of op-amp characteristics: CMRR and Slew rate.	4
2	Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp.	4
3	Designing of analog adder and subtractor circuit.	4
4	Designing of an integrator using op-amp for a given specification and study its frequency response.	8
5	Designing of a differentiator using op-amp for a given specification and study its frequency response.	8
6	Designing of a First Order Low-pass filter using op-amp.	4
7	Designing of a First Order High-pass filter using op-amp.	8
8	Designing of a RC Phase Shift Oscillator using op-amp.	4
9	Study of IC 555 as an astable multivibrator.	4
10	Study of IC 555 as monostable multivibrator.	4
11	Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	8
	Total	**60**

Suggested Books:		
Sl. No.	**Name of Authors/Books/Publishers**	**Year of Publication/Reprint**
1.	R. A. Gayakwad, Op-Amps and Linear IC's, Pearson Education (2003)	2003
2.	R. F. Coughlin and F. F. Driscoll, Operational amplifiers and Linear Integrated circuits, Pearson Education (2001)	2001
3.	J. Millman and C.C. Halkias, Integrated Electronics, Tata McGraw-Hill,(2001)	2001
4.	A.P.Malvino, Electronic Principals,6th Edition , Tata McGraw-Hill,(2003)	2003
5.	K.L.Kishore,OP-AMP and Linear Integrated Circuits, Pearson(2011)	2011

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Internal Assessment		25
	• Quiz/Viva		
	• Observation & Record		
	• Attendance		
	• Model Exam		
2.	End Semester Examination	3 hr	50

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