Birla Institute of Technology & Science, Pilani, Rajasthan Instruction Division Second Semester 2015-2016

Course Handout Part II

Date: 13/01/2016

In addition to Part-I (General Handout) for all courses appended to the time table), this portion gives further specific details regarding the course.

Course No : EEE F341 / INSTR F341
Course Title : Analog Electronics
Instructor-in-charge V K CHAUBEY

Instructors: Arnab Hazra, Lucky Sharan, Vinita Tiwari, Prachi Sharma, Priya Gupta, K K

Gupta, Sneh Lata Murotiya, Satish Mohanty, Snelatha, Dhananjay, Ravinder

Kumar, Prashant Upadhyay, Kavindra Kandpal.

1. Scope and Objective of the course

The aim of the course is to deal with various electronic techniques and building blocks used in analog signal processing and conditioning. Various discrete and Integrated electronic circuits used in analog system design will be studied. Experiments and projects using discrete IC modules will be carried out in the laboratory.

2. Text Book

TB1 L.K. Maheshwari, Analog Electronics, PHI,2005

TB2 L.K. Maheshwari and M.M.S. Anand, Laboratory Experiments & PSPICE Simulation in Analog Electronics Experiments, PHI, 2005.

3. Reference Book

R1. A.S. Sedra, K.C. Smith, Microelectronic Circuits, 6th Ed., Oxford International Student Edition, 2013

3. Course Plan

Lect. No.	Topic	Learning Objective	Reference to Text
1-2	Introduction & Review of Concepts	Basics of analog circuits	TB1 Ch 1
3-5	Op-amp basics	Ideal and real model opamp based circuits	TB1 Ch 2
6-9	Special purpose opamp circuits	Opamp based circuits and inductor simulation	TB1 Ch 3
10-14	Filters	Active filter design and realization	TB1 Ch 4, R1Ch.11
15-18	Non-linear Op-amp circuits	Multiplier application ,Precision circuits	R1,TB1 Ch 5
19-26	Signal Sources & Phase lock loop	Timer based circuits, Oscillators, PLL	TB1 Ch 6
27-32	Voltage Regulators	Linear and switched regulators, ICs concepts	TB1 Ch 7

33-35	IC Power Amplifiers	Class A,B,C and AB stages	TB1 Ch 8
		and LM 380 concepts	
36-37	Tuned Amplifiers	Tuned amplifier design	TB1Ch 9, R1. 11.11
38-40	Data Converters	Concepts of D/A and	TB1Ch10, R1Ch10.9-
		A/D converters	10.11
	Total Lectures	40	

4. Other Home and Reading Assignments

These will be specified from time to time.

5. Evaluation Scheme

Component	Duration	Marks	Date and Time	Remarks
Mid Sem Test	90 Mints.	70	15/3 9:00 - 10:30 AM	Open
Tutorials		40		Closed Book
Assignment (Laboratory		15		Demo / test
Computer Simulation				
/Circuit Fabrication)				
Experiments Day/Day		40		
Lab. Quiz		15		
				Comprehensive
Laboratory Test		20		Lab Test
Comprehensive	3 hrs	100	5/5 FN	Closed Book
TOTAL		300		

6. Chamber Consultation Hour: To be announced in Class

- **7. Make-up Policy**: Make-up will be given on extremely genuine grounds only. Prior application should be made for seeking the make-up examination.
- **8. Notices**: Notices, if any, concerning the course will be put up on EEE Notice Board.

Assignments and topics of general interest will be discussed in tutorial hours. Whenever tutorial hour has to be engaged, announcement for the same will be made in the regular classes.

Instructor In Charge EEE F341/INSTRF341

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI INSTRUCTION DIVISION SECOND SEMESTER 2015-2016

Analog Electronics

S.No. Experiment and Reference to Manual

First Cycle

1.	Common Emitter Amplifier
	Exp.2

- 2. High Input Resistance Transistor Amplifier Exp.3
- 3. Basic Configuration of OPAMP Exp.5
- 4. Study of Feed Back Amplifiers Using Opamps Exp. 8
- 5. Instrumentation and Programmable Amplifier Exp.7

Second Cycle

- 6. Study of Active Filters Using Opamps Low Pass, High Pass & Band Pass Exp.9
- 7. Precision Circuit Exp.12
- 8. Sinusoidal and Non-Sinusoidal Oscillators Exp.15
- Integrated Circuit Timer and Phase Locked Loop Exp.16 Exp.17
- 10. IC Fixed and adjustable Voltage Regulators Exp.19