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 and LM 380 concepts	TB1 Ch 8
36-37	Tuned Amplifiers	Tuned amplifier design	TB1Ch 9, R1. 11.11
38-40	Data Converters	Concepts of D/A and A/D converters	TB1Ch10, R1Ch10.9-10.11
	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 Computer Simulation /Circuit Fabrication) Experiments Day/Day Lab. Quiz Laboratory Test		15 40 15 20		Demo / test Comprehensive 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
9. Integrated Circuit Timer and Phase Locked Loop
   Exp.16
   Exp.17
10. IC Fixed and adjustable Voltage Regulators
    Exp.19