Birla Institute of Technology & Science, Pilani
Hyderabad Campus

SECOND SEMESTER 2017-2018

Course Handout Part II

07/01/2019

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 F246
Course Title	: Electrical and Electronic Circuits Laboratory
Instructor-in-Charge	: Dr. Shaikshavali Chitraganti
Instructors team	: Dr. Shaikshavali Chitraganti, Dr. Venkateswaran R, Dr. Rajesh Kumar Tripathy

Scope and Objective of the Course: A thorough understanding of the elementary principles of Electrical and Electronics circuits and Signals and response of Systems to signals is fundamental to Electrical, Electronic and Instrumentation Engineers. This Laboratory course gives hands-on experience to the theoretical concepts covered in the theory course.

Textbooks:

1. Lab Manual on Microelectronic Circuits
2. Lab Manual on Signals & Systems

Course Plan:

The laboratory classes will be conducted in the Microelectronic Circuits and Signals and Systems Laboratories. The practicals are intended to provide hands-on experience on the concepts learned in the Microelectronic Circuits and Signals and Systems courses. Details of the experiments will be available in the "Laboratory Manual". Laboratory marks mentioned includes marks for record and attendance in lab practical.

List of Experiments in Microelectronics Circuits

1. **Introduction to electronics laboratory: (a) Passive components (b) Measurement equipment**
2. **Applications of diode (a) Diode Characteristics (b) Clippers and Peak detector**
3. **Performance measurement of regulated DC power supply**
4. **Characteristics of MOSFET in common-source (CS) configuration**
5. **Frequency Response of common-source (CS) MOSFET amplifier**
6. **Characteristics of BJT in common-emitter (CE) configuration**
7. **Characteristics of BJT in common-base (CB) and common-collector (CC) configurations**

8. **Frequency response of common-emitter BJT amplifier**
9. **Design of current mirror using PSPICE**
10. **Design of differential amplifier using PSPICE**

List of Experiments in Signals and Systems with Matlab

1. **Familiarization with Matlab**
2. **Matlab Exercises**
3. **Generation of Signals**
4. **Signal operations (scaling, shifting, inversion)**
5. **Synthesis of signals using Fourier Series**
6. **Convolution**
7. **Laplace Transforms**
8. **Sampling and Reconstruction**
9. **Generation of Spectrum of signals Using FFT**
10. **Analog Filters**

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Laboratory Practical Regular class work	4 hours/ week	40%	Regular lab Performance	Open Book
Lab Quiz		30%	Will be announced	Closed Book
Lab Hands on Test		30%	Will be announced	Closed Book

Notices: All notices for this course will be displayed in CMS

Make-up Policy: One Lab Make-up will be granted for genuine reasons, only when prior-permission is obtained from Instructor-in-charge.
Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

INSTRUCTOR-IN-CHARGE