BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, Pilani
Pilani Campus
AUGS/ AGSR Division

SECOND SEMESTER 2020-21
COURSE HANDOUT

Date: 15.01.2021

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 : **Sujan Yenuganti**
Instructor(s) : **Tulsi Ram Sharma**
Tutorial/Practical Instructors:

1. Course Description: Experiments in Electrical sciences, Electronic devices, motors, transformer windings, machine windings, electronic circuits and signals, systems etc.

2. 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.

3. Text Books:
   R1: Fundamentals of Electrical Engineering by Leonard S. Bobrow
   R2: Laboratory Experiments manual of Electric and Electronic Circuits Lab

4. Reference Books: Nil

5. Course Plan:

Module	Lecture topic	Reference	Learning outcome
1	Introduction to electronics laboratory: (a) Passive and active components (b) Measurement equipment	R2	The students should be able to identify various electronic components and can get hands on various basic measurement equipment
2	Applications of diode	R2	Understand the role of diodes in various practical applications
3	Design of DC power supply	R2	The students will be able to design and develop DC power supply circuits for various applications
4	(a) Verification of Kirchhoff's laws (b) Verification of Superposition theorem (c) Verification of Thevenin's theorem	R1,R2	The students will be able to implement and verify all the theroems in practical which will give them a better understanding

5	(a) Verification of Norton's theorem (b) Verification of Maximum power transfer theorem	R1,R2	The students will be able to implement and verify all the theroems in practical which will give them a better understanding
6	Determination of sensitivity of LVDT	R2	Understand how an LVDT works and how this transducer can be integrated to develop various sensors.
7	Measurement of electrical variables in single phase circuits	R2	The students will be able to measure electrical variables in single phase circuits practically
8	Speed control of DC motor using PWM method	R2	Understand how a DC motor can be controlled using the PWM method and its practical applications.

6. Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of component (Close Book/ Open Book)
Lab practical and report		10%	During Lab session	Open Book
Mid Semester (Lab Quiz)	30 Min	20%	TBA	Closed Book
Lab Project & presentation		40%	TBA	Open Book
Comprehensive exam(Lab viva)		30%	TBA	------

7. Chamber Consultation Hour: Chamber consultation hours of Instructors will be announced separately.

8. Notices: All notices of this course will be displayed in Nalanda.

9. Make-up Policy:

10. Note (if any): Lab Make-up will be granted for genuine reasons; only when prior-permission is obtained from Instructor-in-charge.

Instructor-in-charge
Course No. EEE F246