Military Institute of Science and Technology
Department of Electrical Electronic and Communication Engineering
Spring-2024

EECE 314
Open Ended Lab

It is necessary to understand the mechanism of different electrical and electronic components as these are the basic of any electrical lab. Then, the utilization of different tools for accomplishing electrical measurement is essential as it not only provides knowledge about the tools but also enhances the overall work.

Problem statement:

Design an experiment using electrical apparatuses where 'measurement' of any kind can be carried out. You will construct a complete experiment where various electrical components are used for different objectives. Study shall be done based on your knowledge of previous courses. Moreover, you must use components and tools which are suitable for the lab. The experiment must have the following criteria:

1. Utilization of various electrical and non-electrical component/tools with proper theoretical explanation related to the experiment.
2. Demonstration of the experiment using a modern tool such as MATLAB or Proteus.
3. Assemble the designed experiment using hardware tools and document as per the given format:
    a. Name of the experiment
    b. Objectives of the experiment
    c. Apparatus list
    d. Theoretical discussion
    e. Circuit diagram
    f. Experiment procedure
    g. Data table/Result
    h. Discussion on the result
    i. Report questions

Alignment of Problem Statement to CO, PO, CP, CA:

No.	Problem Statement	CO	PO	CP	CA
1.	Utilization of various electrical and non-electrical component/tools with proper theoretical explanation related to the experiment.	CO1	PO9	P1	A3
3.	Demonstration of the experiment using a modern tool such as MATLAB or Proteus.	CO2	PO5	P2	
4.	Assemble the designed experiment using hardware tools and document as per the given format.	CO4	PO12	P3	

Rubrics for assessment of Open Ended Lab

Performance Indicators	Exemplary (5)	Good (4)	Marginal (3)	Poor (2)
Insertion of relevant theoretical study	Added critical relevant information	Added sufficient relevant information	Added some relevant information	Added irrelevant information
Selection of proper apparatus and circuit diagram with justification	Efficiently selected various apparatus and able to justify it in the circuit diagram properly	Efficiently selected various apparatus and able to justify it in the circuit weakly	Somewhat selected various apparatus and poor justification	No proper selection and justification
Clarity of the procedure	Mentioned procedure is clear and variables are well defined.	Mentioned procedure is good and variables are well defined.	Mentioned procedure is ok and some variables are not mentioned.	Mentioned procedure is haywire and variables are not defined.
Presentation of the result/data table	Presentation is well organized and comprehendible	Presentation is well organized but fairly not comprehendible	Presentation is poorly organized and not comprehendible	Presentation is not organized and not comprehendible.
Use of software and hardware	Shows great command over software and hardware to be used as per task.	Shows great command over software and hardware but not applied as per task.	Inadequate command over software and hardware and not applied as per task.	Shows almost no command over software and hardware.