University of Management and Technology

School of Science and Technology

Department of Basic Sciences

Course Code **NL-124**

Lab Title: **APPLIED PHYSICS LAB**

Program: BS-EE

NL 124 Applied Physics Lab

Lab Work

Lab Policy	Students are expected to perform experiments (as per attached list) related to the course work, analyze the data, draw conclusions, and write a report. Grades will be awarded based on student's lab reports and a final exam in the lab.
Grading Policy for Lab work	Laboratory Reports 40 Marks Final Examination 60 Marks
Make-up Labs	If due to an unavoidable circumstance a student has to miss a Lab, then he/she should obtain an excuse for this from the instructor. The instructor will accept an excuse only if he feels that the student had a genuine reason. In an accepted case the instructor may allow the student to take a make-up session.
Attendance Policy for Lab	Students missing more than 20% of the Labs. (excused or unexcused) will receive an "F" grade in the Lab work.

List of Experiments

Week	Exp No.	Title of Experiment
1st	1	**Graphing** To learn quickly and accurately plot a graph; how to use graphical techniques to represent and analyze laboratory data.
2nd	2	**Data Analysis and Presentation** To learn how to analyze experimental data and to practice error analysis.
3rd	3	**Measurement of thickness of a very thin sample** To estimate the number of atoms in the thickness of a pencil line.
4th	4	**Capacitors in series and parallel** To measure the capacitance of a capacitor & to investigate the capacitance of capacitors in series and in parallel.
5th	5	**Determination of capacitance of a capacitor by a graphical method** To determine the capacitance of a capacitor by a graphical method.
6th	6	**Dependence of Current on different combinations of Resistors in a Circuit.** To measure the current in a circuit depending upon the arrangement of resistors within the circuit and find the value of unknown resistance.
7th	7	**Ohm's Law** To study Ohm's law as applied to a "linear" DC circuit. To show the behavior of some "non-linear" circuit elements which do not obey Ohm's law.
8th	8	**Wheatstone Bridge** To introduce bridge circuits and null detection method to measure the resistance of a conductor. To determine the variation of the resistance of a conductor with its length.
9th	9	**Conversion of a Galvanometer to Voltmeter reading up to 6 volts** To study how a moving coil galvanometer circuit can be modified to construct a voltmeter (reading up to 6 volt).
10th	10	**Conversion of a Galvanometer to Ammeter reading up to 0.2 Ampere** To study how a moving coil galvanometer circuit can be modified to construct an ammeter (reading up to 0.2 ampere).
11th	11	**Earth's Magnetic Field** To measure the horizontal component of the earth's magnetic field.
12th	12	**Kirchhoff's Laws** To study Kirchhoff's laws in the case of a two-loop circuit.
13th	**Revision Week**	
14th	**Lab Final Examination**	

15th	Week for Preparation of Theory Final Examination

* The listed sequence of the experiments may vary from student-to-student. However, each student must perform all the listed experiments.