Intermediate Physics Laboratory
PHYS 2129
Spring 2025

Lecture: Tuesday / Thursday 1.00 – 1.50 pm
             Place: Physics Room 202

Laboratory: Tuesday 2.00 – 4.50 pm
             Thursday 2.00 – 3.50 pm
             Place: Physics Room 219

Instructor: Jason Summers
             Email: jsummers@mst.edu
             Office: 212 Physics

Laboratory Manual: Principals of Electronic Instrumentation (copy).

References: *Principles of Electronic Instrumentation* by A. James Diefenderfer and Brian E.
           Holton.
            Basic Electronics: An Introduction to Electronics for Science Students by Curtis A.
           Meyer,
            The Art of Electronics by Horowitz and Hill

Laboratory Schedule:

Date	Experiment/Assignment	Date	Experiment/Assignment
Jan 21	Lab 1	6	Assignment 8
23	Assignment 2	11	Midterm Test
28	Lab 2	13	Spring Recess
30	Lab 3	18	Lab 8
Feb 4	Lab 4	20	Lab 9
6	Lab 5	25	Spring Break
11	Assignment 6-1	27	Spring Break
13	Assignment 6-2	Apr 1	Lab 10
20	Lab 6	3	Assignment 11
25	AC Power	8	Lab 11
27	Assignment 7	10	Lab 12
Mar 4	Lab 7	15	Lab 13

Apr 17	Lab 15	May 1	Kicad/PCBs
22	Magnetic Circuits	6	Final Project
24	Transformers	8	Final Project
29	Labview		

Experiment Report: Experimental reports must be turned by the date specified in Canvas. Each experiment will be graded at a 100-point scale.

Assignments: Special assignments have been created to help prepare for the upcoming laboratory. These include circuit simulations and homework problems. Each will be worth 100 points.

Late Submissions: For each day the lab report or assignment is late, there will be a 5% deduction. The maximum deduction will be 50% after 10 days.

Grading Scale:
>89.5 % = A
>79.5 % = B
>69.5 % = C
>59.5 % = D

Grade weight:
Laboratory reports, Assignments, and Projects: 70 %
Midterm test: 15 %
Final Project: 15 %

*Midterm test will be based on the materials covered in lectures, laboratory experiments and assignments.

Lab Experiments and Assignments:

1. Ohm's Law
2. Kirchoff's Law
3. DC Circuits
4. AC Test Instruments
5. Transient RC Circuits
6. AC Circuits
7. LCR Circuits
8. Diodes I: Rectification and Filtering
9. Diodes II: Zeners
10. DC Power Supplies
11. Transistors
12. Op-Amps I
13. Op-Amps II
14. Oscillators

Possible Projects:

1. LabView Interface
2. Digital Counting Circuits
3. Measurement by Using Sensor
4. Data Collecting
5. Counter and detector
6. Controlling Circuits