PH1100/PH1111 College Physics Lab I/Physics by Inquiry Summer 2025

Instructor Information

Course Instructor: Dr. Katrina Black
Email: keblack@mtu.edu
Office and Office Hours: Mondays 6-7 PM EDT and Thursdays 2-3 PM EDT via Zoom. See the course home page for Zoom link information.

Course Overview

In PH1100/PH1111 online, you will develop practical skills in experimental setup and troubleshooting, data and error analysis, and model building through hands-on experiments created with everyday materials and supplemented by research-based simulations. It is also my hope that you will gain an appreciation of just how much you can figure out about our world using the equipment you have at hand!

Technical Requirements

- Computer: Windows, Mac, or Linux OS with correct permissions to install Tracker, an open source video analysis and modeling program. Additionally, some simulations may use Java, although I am actively searching for HTML5 replacements for these simulations.
- Video: Internal or external webcam, smartphone, or other video recording device.
- Internet: Reliable access is required to access the lab manuals online and upload your results. Most students will want to access the course content at least 3 days/week.

Other common household items are also required; the complete list is available on Canvas.

Safety

Be mindful of your safety. None of our experiments are inherently dangerous, but accidents can always happen! Please follow all instructions and use caution.

Lab Schedule

I suggest that you work on the assigned labs throughout the week. Expect to spend 2-3 hours per lab to set up the experiment, trouble-shoot, analyze your data, and submit your lab report in Gradescope. To accommodate as many student schedules as possible, our weeks run from Tuesday to Monday; each week's lab reports are due at the *end* of the week: Mondays at 11:59 pm. There are two exceptions: Week 3 contains Memorial Day; its lab is due the following day. Week 7 is the final week of the semester; the make-up lab is due on final Friday of class.

Week	Dates	Lab Topic(s)	Due Date
1	Tuesday May 6 to Monday May 12	Lab 1.1: Constant Motion	May 12
2	Tuesday May 13 to Monday May 19	Lab 2.1: Accelerated Motion Lab 2.2: Balanced Forces	May 19
3	Tuesday May 20 to Monday May 26	Lab 3.1: Conservation of Energy and Momentum	May 27
4	Tuesday May 27 to Monday June 2	Lab 4.1: Torque Lab 4.2: Rotational Motion	June 2
5	Tuesday June 3 to Monday June 9	Lab 5.1: Fluid Flow Lab 5.2: Simple Harmonic Motion	June 9
6	Tuesday June 10 to Monday June 16	Lab 6.1: Standing Waves Lab 6.2: Specific Heat	June 16
7	Tuesday June 17 to Friday June 20	Makeup or Revision Lab	June 20

Grading Policy

You will complete 10 labs over the term. For each lab, you will present the data and results of your experiments and answer related questions based on the model you develop. Each lab weighs equally in your final grade. In Week 7, you may make up a missed lab OR revise a completed lab to raise its grade.

Letter Grade	Point Range
A	90-100
AB	85-89
B	80-84
BC	75-79
C	70-74
CD	65-69
D	60-64
F	0-59

Late Work and the Grace Period

I understand that everyone is busy and sometimes life can throw you a curveball. Gradescope and Canvas will automatically apply a 12-hour grace period for every lab. After the grace period, the assignment will lock and work will not be accepted except for reasons allowed by the Dean of Students, available here. Please use the grace period responsibly and only when needed so that I can continue to offer it.

Academic Integrity

I have a liberal policy toward students working together to figure out labs. Just as physicists work together to do physics, physics students should work together to understand their lab experiments! You can get together in person, or ask and answer questions each lab's discussion forum. **HOWEVER**, unless you are assigned to work with a partner, all work you submit must be based on your own experiment, data collection, and analysis. Each individual or pair of partners must run their own experiment!

If academic dishonesty is suspected, the matter will be referred to the Office of Student Affairs. The penalty is no less than an academic integrity warning and no more than expulsion.

University Policies

Student work products (exams, essays, projects, etc.) may be used for purposes of university, program, or course assessment. All work used for assessment purposes will not include any individual student identification.

Michigan Tech has standard policies on academic misconduct and complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. For more information about reasonable accommodation for or equal access to education or services at Michigan Tech, please call the Dean of Students Office, at (906) 487- 2212 or view the policies here.

This course supports University Student Learning Goal #2: Knowledge of the Physical and Natural World.

If you require disability accommodation for any reason, please don't hesitate to contact me or the Dean of Students for guidance. Distance students should be aware that according to Michigan Tech University guidelines, disability accommodations should be verified through the Dean of Students.