

UNIVERSITY PHYSICS I LAB ONLINE/ASYNCHRONOUS

Fall 2025

Instructor:	Noah Seekins	Time:	Asynchronous/Online
Email:	noah.seekins@nds.u.edu	Office:	South Engineering 301

Course Page:

1. <https://blackboard.ndsu.edu/>

Office Hours: Online Office Hours: TBD Hybrid Office Hours: TBD

Required Materials: The Macmillan iOLab device is central to this lab experience. One can be rented or bought outright from <https://store.macmillanlearning.com/us/product/iOLab-Version-2.0/p/1464101469>.

Course Description: Application of physics concepts and principles to the real world. Topics selected from kinematics, forces, harmonic motion, and data collection and analysis.

Course Objectives: This laboratory course is designed to complement Physics 251 by using hands-on experimentation to reinforce the theory and ideas developed during the lecture. By the end of the semester, students should have a good working knowledge of the concepts that were presented, be able to communicate these ideas effectively, and understand the importance of working in collaboration with their peers.

Prerequisite(s): Math 165 - Calculus I

Course Evaluation:

Weekly Lab Assignment - 10 Points Total of 130 Points
Lowest Dropped Lab - -10 Points 120/130 Total Points
Evaluated

I will grade your assignments based on several criteria. Taken into account will be demonstration of your knowledge of the material, your ability to use the scientific method to arrive at a conclusion, and your ability to effectively communicate that conclusion. Error in your results will not affect the grade you receive, so long as you provide a reasonable explanation for the error. If you notice errors in your results during class time, please let me know and we may be able to correct the problem.

Each lab will be accompanied by a lab worksheet. These worksheets must be completed and submitted by one week after the associated lab period. In general, I will accept late work without penalty, but it is your responsibility to inform me that you need more time before the due date. If work is not turned in by the time that I grade a lab, you will get it back at the end of the semester. I grade each assignment twice: once a few days after the due date, and once during dead week. If you want prompt feedback, I suggest turning the assignment in within 3 days of the due date.

The final few weeks of the lab course will walk through a final project, in which you will design an experiment to answer a question of your choice, collect and analyze the data that you need, and write a full report about your experiment. In order to give you time to revise, you will also be undergoing a peer review process, and you will be able to take those comments into account before you submit your final report. The draft of your report, and your peer review comments (Labs 11 and 12) will be the only labs with harsh deadlines this semester.

Your grade is calculated from the sum of your weekly worksheet scores. Each lab will be worth ten (10) points. The fully-completed assignment with the lowest non-zero score during the semester will be dropped. Failing to follow the lab procedure to completion is a zero, and will not count toward the dropped lab.

Grading Scale:

A	120-108 Points
B.....	107-96 Points
C.....	95-84 Points
D.....	83-72 Points
F	<71 Points

Tentative Course Outline:

Week 1	
• Lab 0 - A Google Sheets Crash Course	
• Lab 1 - Introduction to Graphing and Error	
Week 2	
• Lab 2 - Precision, Accuracy, and Standard Error	
Week 3	
• Lab 3 - Your iOLab Device	
Week 4	
• Lab 4 - Kinematics in 1 Dimension	
Week 5	
• Lab 5 - Tension and Normal Forces	
Week 6	
• Lab 6 - Springs and Friction	
Week 7	
• Lab 7 - Simple Harmonic Motion	
Week 8	
• Lab 8 - Writing a Proposal	
Week 9	
• Lab 9 - Rotational and Circular Motion	
Week 10	
• Lab 10 - Collecting and Analyzing Data	
Week 11	
• Lab 11 - Writing a Report	

Week 12

- Lab 12 - Peer Reviewing

Week 13

- Final Report

Attendance and Participation: This is an online course, with no physical attendance. The course has been developed to foster engagement through online and digital interactions. The assigned weekly lab materials must be turned in each week, and interaction with the instructor is available via weekly office hours, individual lab feedback, and emails. The final project

Course Information: Although this is an asynchronous and online course, we will still be adhering to a schedule as the semester progresses. Each week, a set of combination lab instructions and worksheet will be released and will be due at 11:59 PM on the following Sunday. These materials can be accessed 24 hours a day throughout the week and you are just required to complete the assignments before the set due dates.

Technical Assistance: Issues with Blackboard should be directed to the NDSU IT Help Desk (<https://www.ndsu.edu/it/help/>). In the case of Blackboard issues, please also be sure to inform the instructors in the case that additional arrangements must be made.

Student Resources: As a member of the NDSU community, resources are available for you should you need help in dealing with adverse reactions to things happening in the world today. A variety of resources are listed below:

- **For students on campus and remotely (telehealth):**

- NDSU Counseling Services: 701-231-7671, <https://www.ndsu.edu/counseling>
- NDSU Disability Services: 701-231-8463, <https://www.ndsu.edu/disabilityservices>
- Student Health Service: 701-231-7331, <https://www.ndsu.edu/studenthealthservice>
- Dean of Students Ofce: 701-231-7701, <https://www.ndsu.edu/deanofstudents>

- **For tutoring and academic support:**

- Physics Help Line: Drop in help from Physics TAs is available in person in SE 218. View schedule at www.ndsu.edu/physics/students/current_students/physics_help_room/.
- Drop in Zoom help link: TBA
- ACE Tutoring: <https://www.ndsu.edu/ace/tutoring/>
- TRIO Student Support Services: 701-231-8028, <https://www.ndsu.edu/trioss/about/>

- **In a crisis or emergency situation:**

- Call University Police: 701-231-8998
- Call 9-1-1
- For physical health crises: Go to a Hospital Emergency Room
- For mental health crises: Go to Prairie St. Johns for a Needs Assessment: 701-476-7216 (510 4th St. S.)
- Call the FirstLink Help Line: 1-800-273- TALK (8255) or 2-1-1
- Call Rape and Abuse Crisis Center: 701-293-7273

Additional Information:

- **Veteran Status and Student Service Members:** Veterans and student service members with special circumstances or who are activated are encouraged to notify the instructor as soon as possible and are encouraged to provide Activation Orders
- **Americans with Disabilities Act for Students with Special Needs:** Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with instructor and contact the Disability Services Office (www.ndsu.edu/disabilityservices) as soon as possible.
- **Academic Honesty:** The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in University Physics I (PHYS 251) Fall 2024 which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Ofce of Registration and Records. Informational resources about academic honesty for students can be found at www.ndsu.edu/academichonesty.
- **Family Educational Rights and Privacy Act (FERPA) Statement:** Your personally identifiable information and educational records as they relate to this course are subject to FERPA. <https://catalog.ndsu.edu/academic-policies/ferpa/>