

**PHYSICS 251L,  
University Physics I Laboratory  
Syllabus, Fall Semester 2025**

**Lab Time:**

**Room:** South Engineering 308

**Semester Credit Hours:** 3

**Instructors:** Noah Seekins, Andrew Croll

**Department:** Physics

**Office:** (Noah) SE 301, (Dr. Croll) SE 212B

**Email:** noah.seekins@ndsu.edu / Andrew.Croll@ndsu.edu

**Office Hours:**

(Noah) Online Office Hours - TBA

(Noah) Hybrid Office Hours - TBA

(Dr. Croll) In-Person Office Hours - TBA

**TEXT: None Required.**

**Course Objective:**

This laboratory course is an introduction to the nature and skills of experimentation in physics. Students will engage in multi-week investigations, creatively design their own experiments, and explore questions of how we develop models in physics through experiments. Students will learn how to design experiments, analyze data, develop interesting research questions, and consider issues of ethics in physics experiments. Students will also develop communication and collaboration skills. The course aims to provide an opportunity for students to consider the nature of measurement and experimentation and evaluate the relationship between physical theories and experimental data.

**Expectations:**

In accordance with NDSU [Policy 601](#), failure to comply with instructions, including this syllabus, may be handled according to the Code of Student Conduct resolution process and may result in disciplinary sanctions.

**Attendance Expectations:**

According to [NDSU Policy 333 \(www.ndsu.edu/fileadmin/policy/333.pdf\)](http://www.ndsu.edu/fileadmin/policy/333.pdf), **attendance in classes is expected**

Please do not come to class:

- if you are feeling ill, particularly if you are experiencing COVID-19 symptoms, or
- if you are infected, during your five-day isolation period.

You will still need to complete the assigned work to meet class learning objectives. TA's will arrange any make up time that is necessary.

Food and drink is not permitted in class unless a student has a documented accommodation through Disability Services. Students will have to remove their masks to eat or drink.

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.

**BlackBoard:**

Course assignments, information, and messages will be posted to BlackBoard <http://bb.ndsu.nodak.edu/>

**Technical Issues:**

We will use lots of software, if you have trouble with any of it contact NDSU Help Desk:

Email: [ndsu.helpdesk@ndsu.edu](mailto:ndsu.helpdesk@ndsu.edu)

Call: 701-231-8685 (option 1)

**Composition of Final Course Grade:**

The final grade will be determined as follows:

Each class a grade of S (Satisfactory), S- (almost Satisfactory) or U (Unsatisfactory) will be determined for each assignment via the rubric that can be found on blackboard. The grade is determined by whether or not a student is participating and actively thinking during the laboratory. Each class has a post-lab exercise to be completed by students which will also be assigned a grade of S, S-, or U.

At the end of the semester, a student with 89.5% of their grades at the S level will be granted an "A". A student with 75.5 to 89.4% of their grade at the S level, will be granted a "B". A student with between 59.5 to 75.4% of their grade at the S level ensures a "C". Finally, a student with 49.5 to 59.4% of their grade at the S level ensures a D. Below 49.5 will be an F.

**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 the instructor and contact the [Disability Services Office \(www.ndsu.edu/disabilityservices\)](http://www.ndsu.edu/disabilityservices) as soon as possible.

**Academic Honesty Statement:**

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 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 [Office of Registration and Records](#). Informational resources about academic honesty for students and instructional staff members can be found at [www.ndsu.edu/academichonesty](http://www.ndsu.edu/academichonesty).

**Additional Resources for Students:**

Encourage use of support 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):

Counseling Services: 701-231-7671; <https://www.ndsu.edu/counseling/>

Disability Services: 701-231-8463; <https://www.ndsu.edu/disabilityservices/>  
Student Health Service: 701-231-7331; <https://www.ndsu.edu/studenthealthservice/>  
Dean of Students Office: 701-231-7701; <https://www.ndsu.edu/deanofstudents/>

In a crisis or emergency situation:

Call University Police: 701-231-8998

Call 9-1-1

Go to a Hospital Emergency Room

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

### **Course description:**

By the end of this course, you should be able to:

1. Collect data and revise an experimental procedure iteratively and reflectively,
2. Evaluate the process and outcomes of an experiment quantitatively and qualitatively,
3. Extend the scope of an investigation whether or not results come out as expected,
4. Communicate the process and outcomes of an experiment, and
5. Conduct an experiment collaboratively and ethically.

The full list of specific learning goals is available at the end of your lab manual and each unit will list the specific learning goal being targeted. Each experiment will focus on developing and applying tools of experimental physics to extend our understanding on physics principles. Experiments will often critically assess the conceptual and experimental basis for physical models discussed in lecture and their applicability or limitations in specific physical situations.

**The goal is to understand how we know, not what we know.**

This is a 1 semester-credit-hour undergraduate level laboratory course with minimum course prerequisites (MATH 165).