

PHY 201: Principles of Physics I Laboratory (Spring 2020)

Instructor: Dr. Eric Edlund

SUNY Cortland, Physics Department

Course Meeting Times

Lab 1: Thurs. 9:00 – 10:50 (CRN 20985)

Lab 2: Thurs. 10:55 – 12:45 (CRN 20983)

Lab 3: Thurs. 12:50 – 2:40 (CRN 21255)

Contact Info

Head Instructor: Dr. Eric Edlund

Email: eric.edlund@cortland.edu

Phone: 753-5697

Office: Bowers 133

Lab Instructor: Mrs. Beth Pennell

Email: beth.pennell@cortland.edu

Phone: 753-2902

Office: Bowers 1107

Standing Office Hours

Dr. Eric Edlund:

Monday 9:00 AM – 10:00 AM

1:00 PM – 2:00 PM

Wednesday 9:00 AM – 10:00 AM

Thursday 3:00 PM – 4:00 PM

Friday 12:30 PM – 1:30 PM

Mrs. Beth Pennell:

You can meet with Mrs. by appointment. Please contact her via email if you would like to discuss something related to the laboratory component of this class.

Course Description

The laboratory sections for PHY 201 are chained to the lecture course, meaning that they must be taken together and there will be only one grade administered, which is for the lecture. This cumulative grade will incorporate your scores from laboratory reports, as well as exams and home work, etc. The details of the grading scheme are more fully described in the main course syllabus.

In the laboratory course you will explore physical phenomena, develop familiarity with graphing and statistical analysis, and learn how to write laboratory reports in the style expected by the standards of the Physics Department.

Student Learning Outcomes

Success in the laboratory component of the course will require you to attend class, complete the laboratory experiments, and invest a serious effort at writing laboratory reports that are complete, accurate, and presentable. The primary learning objectives for the laboratory section are:

- to be able to design an experimental procedure, conduct a safe and controlled experiment, identify appropriate measurement tools, and properly use experimental equipment.
- to recognize the inherent limitations of accuracy of all measurements, and to be able to quantify the contributions of the accuracy in uncertainty analysis.
- to be able to organize and analyze data to extract patterns, and to be able to use analysis software such as Excel.
- to effectively communicate scientific results in the format of a report, including an introduction, body sections, uncertainty analysis, and concluding statements.

Required Materials

1. *University Physics 3rd Edition*, by Wolfson.

** The textbook will be available at the library reserve desk under item #17.

2. A bound notebook (i.e. not loose-leaf or a 3-ring binder) for lab reports.

Laboratory Assessment

Your effort in lab will be based on both participation and laboratory reports.

Attendance – You are required to attend all lab sections. Each unexcused absence (as defined by the college handbook) from lab will result in a 10% penalty to your lab score.

Lab reports – You are required to complete a laboratory report for each exercise throughout the term. Missing, incomplete, or otherwise insufficient lab reports will result in a penalty of 1/3rd of a letter grade to the final course grade (e.g. a final grade of a B+ would be demoted to a B), in addition to any reduction in marks for the individual lab report. This is a very severe penalty, so make sure that you do not miss lab!

Laboratory Policies

There are a few policies that we ask you to respect while in lab.

1. No food or drink in the lab rooms. You may leave your food and drinks in the hallway. You are free to leave the room as you need to use the restroom or to get water, or a snack. Please just be cognizant of the time and the many tasks that you need to complete.

2. Respect the equipment. We hope and expect that the equipment you will use will continue to serve the needs of students like yourselves for many years to come. Please inspect your equipment before using it. If you don't understand how something works, please feel free to ask a question.

3. Think before you act. There is minimal danger involved in most of the physics labs, however there is always risk of injury if one acts hastily or take short cuts. Always think before you act, plan out your laboratory procedure, and then move with intention.

4. Be respectful of your peers and your instructors. Laboratory should be a fun experience for everyone, but it can also be somewhat stressful at times. It may be that you will have to wait for assistance at times. Please be patient and know that we are doing our best to help everyone.

5. Listen to feedback from your instructor and know that everything asked of you is entirely feasible. Your instructors will most likely not give you the answers when you ask a question, but try to point you in a direction so that you can answer the question yourself. We do this because our purpose is to help you become independent thinkers, not because we don't respect you or want to see you struggle, though struggle is a necessary part of the process.

Important Dates

Friday 1/31	End of the add/drop period
Tuesday 5/12	Final Exam, 11:00 AM – 1:00 PM (lecture only, no lab final)

Course Schedule

Note that this is a tentative schedule and is subject to change as necessary.

Week	Lab Date	Laboratory Exercise	Lab Report Due
1	1/30	Lab 1: Geometric measurements of π	
2	2/6	Lab 2: Emergency landing	
3	2/13	Lab 3: Asteroid interception	
4	2/20	Lab 4: Casino Equilibria, part 1	1, 2, 3
5	2/27	Lab 4: Casino Equilibria, part 2	
6	3/5	Lab 5: Random variables, part 1	4
7	3/12	Lab 5: Random variables, part 2	
8	---	SPRING BREAK	
9	3/26	Lab 6: Friction lab, part 1	5
10	4/2	Lab 6: Friction lab, part 2	
11	4/9	Lab 7: Ballistic pendulum, part 1	6
12	4/16	Lab 7: Ballistic pendulum, part 1	
13	4/23	Lab 8: Meteor impact, part 1	7
14	4/30	Lab 8: Meteor impact, part 2	
15	5/7	Make-up lab	8

The last column lists the due-date for the specified lab reports. Lab reports should be completed prior to the start of class. However, you may hand-in your lab books at the end of the session so that you can record data in your lab notebooks that day. Lab books will be returned to you by the start of lab the following week so that you can commence to write the next lab report.

SUNY Cortland Policies and Statements

Academic Integrity Statement: All students are expected to uphold academic integrity standards. Plagiarism is defined as taking the ideas of others and using them as one's own without due credit. Students who cheat in examinations, course assignments, or plagiarize in this course may be disciplined in accordance with university rules and regulations. SUNY Cortland College Handbook, Chapter 340.

Disability Statement: As part of SUNY Cortland's commitment to a diverse, equitable, and inclusive environment, we strive to provide students with equal access to all courses. If you believe you will require accommodations in this course, please place a request with the Disability Resources Office at disability.resources@cortland.edu or call 607-753-2967. Please note that accommodations are generally not provided retroactively so timely contact with the Disability Resources Office is important. All students should consider meeting with their course instructor who may be helpful in other ways. SUNY Cortland College Handbook, Chapter 745.

Diversity Statement: SUNY Cortland is dedicated to the premise that every individual is important in a unique way and contributes to the overall quality of the institution. We define diversity broadly to include all aspects of human difference. The College is committed to inclusion, equity, and access and thus committed to creating and sustaining a climate that is equitable, respectful and free from prejudice for students, faculty and staff. We value diversity in the learning environment and know that it enhances our ability to inspire students to learn, lead and serve in a changing world. We are committed to promoting a diverse and inclusive campus through the recruitment and retention of faculty, staff and students. As a community, we hold important the democracy of ideas, tempered by a commitment to free speech and the standards of inquiry and debate. To this end, we are dedicated to developing and sustaining a learning environment where it is safe to explore our differences and celebrate the richness inherent in our pluralistic society. SUNY Cortland College Handbook, Chapter 130.

Inclusive Learning Environment Statement: SUNY Cortland is committed to a diverse, equitable and inclusive environment. The course instructor honors this commitment and respects and values differences. All students enrolled in this course are expected to be considerate of others, promote a collaborative and supportive educational environment, and demonstrate respect for individuals with regard to ability or disability, age, ethnicity, gender, gender identity/expression, race, religion, sex, sexual orientation, socio-economic status or other aspects of identity. In an environment that fosters inclusion, students have the opportunity to bring their various identities into conversation as they find helpful, but are not expected to represent or speak for an entire group of people who share aspects of an identity. If you have any questions or concerns about this statement, contact the Institutional Equity and Inclusion Office at 607-753-2263. <http://www2.cortland.edu/about/diversity/>

Title IX Statement: Title IX, when combined with New York Human Rights Law and the New York Education Law 129-B, prohibits discrimination, harassment and violence based on sex, gender, gender identity/expression, and/or sexual orientation in the education setting. The federal Clery Act and NY Education Law 129-B provide certain rights and responsibilities after an incident of sexual or interpersonal violence. When a violation occurs, victims and survivors are eligible for campus and community resources. Where the College has jurisdiction, it may investigate and take action in accordance with College policy. If you or someone you know wishes to report discrimination based in sex, gender, gender identity/expression, and/or sexual orientation, or wishes to report sexual harassment, sexual violence, stalking or relationship violence, please contact the Title IX Coordinator at 607-753-4550, or visit <http://www2.cortland.edu/titleix> to learn about all reporting options and resources.

Updated by SUNY Legal on February 1, 2018.