

# Lab Syllabus

Lab Director	Jacob Turner
Office	Webster Hall Room 1248/341
Phone	335-3398
Email	physics.labs@wsu.edu

In your physics lab, you will be expected to:

- Apply physics in a variety of physical settings.
- Build simple mathematical models.
- Design experiments.
- Document your experimental work, results, and data analysis in lab notes and notebooks.
- Evaluate and compare results using uncertainties.
- Employ representative software packages for data collection and analysis.
- Communicate your work in writing (short and long formal assignments).

## Student responsibilities

- Read the syllabus. The regulations/guidelines in this syllabus take precedence over any oral commitments that may be made. The lab director is responsible for the final interpretation of these policies.
- Arrive at your lab on time. Note that the lab rooms change from week to week. The room schedules are posted on the bulletin boards across from the elevators on the second, third and fourth floors of Webster Hall.
- Perform all labs and the lab exam. If you miss or expect to miss a lab due to sickness or another valid reason, refer to the Requests for Make-Up Laboratories section of this syllabus about arranging a make-up laboratory.
- Make sure that all submitted work is your own. Academic dishonesty is not tolerated and is grounds for failing the course. We are aware of work posted to various internet repositories and held at some greek life locations, and actively screen for material derivative of these items.

- Before each lab, read the lab manual and related course material, particularly if the material has not already been covered in lecture. Chapters in the freely available OpenStax textbook are referenced for further investigation, YouTube MOOC offerings can also help get you up to speed.
- Bring your lab manual, calculator, pen and pencil, lab notebook, and scratch paper to lab each week.
- Come prepared to perform mathematical calculations based on the level of math appropriate for the course. This includes algebra, geometry, and trigonometry. For Physics 201 and 202, calculus is also required. All labs also conduct statistical work, which is not covered in any prerequisite courses for these labs. Students may wish to utilize Khan Academy or other resources for help with statistics.
- Do not bring food, tobacco, or beverages into a lab room.

## Final lab grades

Lab and Lecture components of this four credit course are only loosely linked. Due to the open ended nature of scientific investigation, the Lab component is evaluated on a Pass/Fail basis. Final grade for the course will be determined completely by performance in Lecture activities. However, a failure of either the Lab or the Lecture will count as a failure of both, and each component will need to be re-taken if the student desires a passing grade.

A passing score in the Lab is obtained by adequate performance on the Lab Exam at the end of the semester. This exam is comprised of various smaller measurements and analysis activities which closely align to those performed each week. A student who has been actively participating in each experiment, taken adequate notes in their Lab Notebook, and paid close attention to TA feedback on regularly submitted work should easily clear the passing benchmark. Submission of a formal lab report which meets all criteria for excellence in student work can offset performance on the lab exam for those students who prefer a less time intensive evaluation of capability.

Lab assignments include (1) lab notes recording during lab, (2) complete or partial formal reports of laboratory work; and (3) tutorials and quizzes performed during lab. Although each lab partner in a group will report the same data, your data analysis, discussion of results, and conclusions must be your own. For more information regarding lab notes and reports, refer to the “Lab Notes and Reports” section immediately following the syllabus. All work must be submitted within one week to obtain feedback from the TA.

All laboratory exercises are important. Each student must complete all of the labs in a given semester.

The lab exams are administered during Closed Week, in your regularly scheduled laboratory. The exam may include any experimental techniques, methods of data analysis, and/or concepts covered during the semester. You may refer to your evaluated lab work for the current semester and the lab manual during the exam. You may not refer to the textbooks or other references. Work on the exam is individual (no lab partners). Bring your calculator.

Questions regarding feedback on lab assignments need to be discussed with your teaching assistant within two weeks of receiving the evaluated material (earlier at the end of the semester). Final lab assessments (pass/fail) will be posted on Blackboard during Finals Week. The lab evaluation is submitted to your instructor Friday morning of Final Exam week. Errors that affect your physics course grade will be corrected after final grades are submitted to the Registrar, if necessary.

## Assignment submission policies

Regular assignments are normally due at the beginning of the next lab session. All work must be submitted to your laboratory teaching assistant by Tuesday, the day of the lab exam.

If you have reason to believe that an assignment that you submitted has been lost, report it immediately to your teaching assistant.

Some assignments and tutorials will be completed during the lab period and are due before you leave the room. Your teaching assistant in your lab will let you know when this is the case.

## Requests for make up laboratories

**Do not attend lab if you are ill with something contagious.** When you are well enough to attend, contact your teaching assistant and arrange for a make up laboratory. Laboratories must be made up within one week of return to academic status.

If you expect to miss your regularly scheduled lab to attend a university-approved activity, you are also expected to make up the missed laboratory. University-approved activities include music and athletic events in which you perform and Common Morning/Evening Exams. The official list of Common Morning/Evening Exams is posted at <http://registrar.schedule.wsu.edu/common-exams/>. Make up laboratories for scheduled absences must be requested *the week before the scheduled absence*. Make up space is limited, and may not be available if you request a make up lab later. If you fail to request a make up lab the week before a block exam, please request a make up exam.

To schedule a make up laboratory, contact the lab director at [physics.labs@wsu.edu](mailto:physics.labs@wsu.edu). Your request should include your name, your course catalog number (Physics 101, 102, 201, 202, etc.), your regular lab section number, your teaching assistant's name, the name of the missing lab (e.g., Buoyancy), the reason why the lab is being missed, and your e-mail address. You must also indicate when you might be available to make up the lab. Make up labs are usually offered during other sections of the same lab, but sometimes in another course. Make up labs are available on Tuesdays, Wednesdays, and Thursdays only. All make up labs must be approved by the lab director.

Except for the last lab of the semester, make-up work must be submitted to the laboratory teaching assistants before Monday of Closed Week to be considered for credit. The physics labs close Friday before Closed Week to prepare for lab exams. Make-up labs are not scheduled during Closed Week. Make up labs for the last lab of the semester can sometimes be scheduled during Finals Week. The lab exam, administered during Closed Week, cannot normally be made up after Closed Week.

## **Student conduct**

“Washington State University, a community dedicated to the advancement of knowledge, expects all students to behave in a manner consistent with its high standards of scholarship and conduct. Students are expected to uphold these standards both on and off campus and acknowledge the University’s authority to take disciplinary action. The purpose of these standards and processes is to educate students and protect the welfare of the community.”—Quoted from the Preamble to the Washington State University Standards of Conduct for Students (<http://cacd.wsu.edu/media/211772/2014-15 Student Handbook.pdf>).

A partial list of prohibited conduct appears in Washington Administrative Code (WAC) Section 504-26 (<http://apps.leg.wa.gov/wac/default.aspx?cite=504-26>). Of special importance to the laboratories is the false reporting of data, experiment results, information, or procedures. Reporting data acquired by others (including your lab partner if you did not contribute) or in previous semesters is academically dishonest. Fabrication of results, information, or procedures, and sabotaging other students’ work is also prohibited. Likewise, sharing information about the end-of-semester lab exam with students yet to take the exam is prohibited. Violations of this policy will affect your lab grade and may be reported to the Student Conduct Committee as instances of academic dishonesty.

Students are expected to avoid behavior that unnecessarily interferes with the learning of other students. We expect students to be on time to labs and lab exams and to mute their cell phones for the duration. The concepts of physics are subtle, and even the most intelligent students make mistakes. In this environment, it is important that students be willing to ask questions if they don’t understand what their lab partners say or do. To this end, we require that students and teaching assistants alike avoid behavior that discourages communication. This includes threats and insults. Students who repeatedly disrupt lab may be directed to leave the room and may receive a zero grade for that week’s lab.

## **Disability accommodations**

Reasonable accommodations are available for students with documented disabilities. If you have a disability and need accommodations to fully participate in the lecture or lab, call or visit the Access Center in the Washington Building, Room 217 (Phone: 335-3417, e-mail: [Access.Center@wsu.edu](mailto:Access.Center@wsu.edu), URL: <http://accesscenter.wsu.edu/> ). All accommodations must be approved through the Access Center. Notify both your lecture instructor and the lab director during the first week of lecture concerning any approved accommodations. Late notification may cause the requested accommodations to be unavailable.

## **Safety resources**

General information on campus safety is posted at <http://safetyplan.wsu.edu/>—the Campus Safety Plan. Information on how to prepare for potential emergencies is posted on the Office of Emergency Management web site (<http://oem.wsu.edu/>). Safety alerts and weather warnings are posted

promptly at the WSU Alerts site (<http://alert.wsu.edu/>). Urgent warnings that apply to the entire University community will also be broadcast using the Campus Outdoor Warning System (speakers mounted on Holland Library and other buildings) and the Crisis Communication System (e-mail, phone, cell phone). For this purpose, it is important to keep your emergency contact information up to date on the zzsis system. To enter or update this information, click the “Update Now!” link in the “Pullman Emergency Information” box on your zzsis home page (<http://zzsis.wsu.edu/>).

Safety information that applies to the laboratories appears in the Lab Manual. Your teaching assistant will also present any safety information that applies to the current laboratory at the beginning of the laboratory. Students are expected to conduct themselves responsibly and take no unnecessary risks in the course of their work. Students who disobey the safety instructions of the teaching assistant will be directed to leave the room. All accidents and injuries must be reported promptly to your teaching assistant.

In case the fire alarm sounds, leave the building promptly in an orderly fashion. If you are not on a ground floor, use the stairs. Do not use the elevator. After exiting the building, gather at the basketball court behind Waller Hall (down the hill, south of Webster Hall) with the other members of your lab. A representative of the Department of Physics and Astronomy will tell you when it is safe to re-enter the building. If this does not happen before the end of the lab period, you are free to leave for your next class.

## **Possible changes**

The lab director reserves the right correct errors in the syllabus and to modify lab schedules and room assignments.

The lab director has delegated some authority to modify assignments and due dates to your teaching assistant. This helps ensure that you are graded according the criteria stated during your lab meeting.