

# Course Syllabus

## PHYS 103

### Principles of Physics I Laboratory

#### General Information

##### Instructor

Chris Cothran  
Regents Hall, room 122  
cdc81@georgetown.edu  
Office hours: MTWR 1:00-2:00pm

##### Description

This laboratory course complements the PHYS 101 lecture course. The lab topics include: kinematics, forces, momentum, impulse, work, energy, energy conservation, rotational dynamics, gravitation, oscillations, and fluids.

The concepts you learn in lecture are not simply abstract ideas: they constitute the framework that physicists use to represent how the real world actually works. This laboratory course gives you the opportunity to test out these concepts in experiments you construct. The hands on application of your understanding of physics in the laboratory will complement your learning in the classroom.

To get the most out of this learning opportunity, you must commit yourself to being actively engaged in the laboratory session. This means thinking carefully about both what you expect to observe, as well as what your results say about what actually happened. Be unafraid to express your thoughts in lively discussions – this is the sound of learning in action. Make the room noisy!

All lab content is posted online to Canvas (<http://canvas.georgetown.edu>). There is no textbook. You do not need any special supplies, except a pen or pencil (preferred) and a calculator.

There are two laboratory sections: MW 10:15am–12:45pm, and TR 10:15am–12:45pm. The enrollment is limited to 24 students per section. To accommodate as many students as possible, and in order to stay within this limit, we may ask you to change sections.

The instructional lab is located in Regents Hall, room 119.

#### Session format

You are expected to arrive on time and come prepared for the lab session. The lab instructions are available on Canvas for you to review in advance.

An Instructor and/or a Teaching Assistant will lead your lab section. When you arrive at lab, record your attendance on the sign in sheet and pick up a hardcopy of the lab report. You will complete the report as you work through the lab and turn it in at the end of the session. The lab instructions are on Canvas.

We expect you to work collaboratively and share the responsibilities of the lab with your lab partners (two at most). However, the lab report is your own, so you do not have to agree with your lab partners on the answers to the questions asked in the report.

You are required to check in with your instructor or TA at several points during each lab before continuing on to the remainder of the lab activities. The purpose is to ensure that you have an adequate data set for subsequent analysis. By signing your check points, your instructor or TA are NOT indicating that your answers in your report are correct.

At the end of the session, turn in your completed report to either your Instructor or TA who will sign you out. *The sign-out contributes to your lab report grade: sign-out will not be granted if you have not reset your lab station to the way you found it when you came in to lab!*

Be safe in the lab. Your instructor or TA will describe all necessary safety precautions – follow them, as well as your common sense!

Eating or drinking in the lab is not permitted.

## Grading

You will be graded based on the quality of your experimental work, whether you used acceptable scientific standards to report results, the accuracy of your answers to the questions in the report.

Your report is due at the end of your lab session, unless otherwise stated by your Instructor. Late reports receive no more than half credit. Failure to properly check-out of lab will result in a 10% deduction on your lab report grade.

Unexcused missed labs receive 0 points.

Your final numerical grade is the average of your equally weighted lab report grades, which is then translated into a letter grade according to:

A range	$\geq 90\%$
B range	$\geq 80\%$
C range	$\geq 70\%$
D range	$\geq 60\%$
F	$< 60\%$

The + and – letter grade distinctions fall within 2% of the boundaries listed above; *i.e.*, an A– will be assigned to a numerical grade between 90% and 92%.

## **Policies**

### **Summer commitment**

Completing this course in five weeks requires an extreme level of dedication. No accommodation will be granted if you choose to miss class *e.g.* for vacation or family gatherings: you are responsible for completing all assignments on time.

### **Rescheduling labs**

A request to reschedule a lab will be considered **ONLY** for the most extreme circumstances (*e.g.*, severe illness, death in the family, legal obligation, religious holidays, etc) and must be made up at the first available opportunity, preferably within the same week. It is your responsibility to notify the instructor *in advance*.

### **Switching sections is not permitted**

You are required to attend the section for which you are registered.

### **Collaborative work**

You will be working collaboratively with other students in this course. You are encouraged to discuss your thoughts with your fellow students and with the instructors and TAs.

Please keep in mind, however, that you must turn in your own work. Copying someone else's work without understanding it is a good way to guarantee that you won't learn anything, and it is a violation of the Honor System (<http://honorcouncil.georgetown.edu>).

### **Sexual misconduct**

Georgetown University and its faculty are committed to supporting survivors of sexual misconduct, including relationship violence, sexual harassment and sexual assault. University policy requires faculty members to report any disclosures about sexual misconduct to the Title IX Coordinator, whose role is to coordinate the University's response to sexual misconduct. Georgetown has a number of fully confidential professional resources who can provide support and assistance to survivors of sexual assault and other forms of sexual misconduct. These resources include:

Jen Schweer, MA, LPC

Associate Director of Health Education Services for Sexual Assault Response and Prevention

(202) 687-0323

[jls242@georgetown.edu](mailto:jls242@georgetown.edu)

Erica Shirley

Trauma Specialist, Counseling and Psychiatric Services (CAPS)

(202) 687-6985

[els54@georgetown.edu](mailto:els54@georgetown.edu)

More information about campus resources and reporting sexual misconduct can be found at: <http://sexualassault.georgetown.edu>.

## Schedule

Note that the numbers 1 and 2 below refer to the MW and TR sections of the course (listed as PHYS 103-10 and PHYS 103-11, respectively).

Date	Topic	Section
June 1	Kinematics	1
2	Kinematics	2
3	Force and motion, part 1	1
4	Force and motion, part 1	2
5	—	—
8	Force and motion, part 2	1
9	Force and motion, part 2	2
10	Kinetic energy and work	1
11	Kinetic energy and work	2
12	—	—
15	Energy conservation	1
16	Energy conservation	2
17	Impulse and momentum; rotational dynamics	1
18	Impulse and momentum; rotational dynamics	2
19	—	—
22	<b>NO LAB</b> (PHYS 101 exam 2)	—
23	Gravitation	2
24	Gravitation	1
25	Oscillations	2
26	—	—
29	Oscillations	1
30	Fluids	2
July 1	Fluids	1
2	<b>NO LAB</b> (PHYS 101 exam 3)	—
3	<b>Holiday/End of Session</b>	—