



Physics 1021
Introduction to General Physics I
Course Syllabus – Spring 2015

Instructor: Dr. Matthew Newby
 Office: SERC 478
 Office Hours: M 2:30-5:30pm; T 10:00am-noon; W,F 2:00-3:00pm
 Course Coordinator: Elena Borovitskaya
 Course Questions/Support: 1021sp15mn@temple.edu
 Course Support Hub: <https://phys.cst.temple.edu/physics-help.html>

	Room	Day(s)	Time	Section	Instructor
Lectures	SERC 0110A	M W F	10:00-10:50	4-7	Matthew Newby
Recitation	BartonB 201	M	11:00	4	Michael Opferman
	BartonB 200	T	10:00	5	Michael Opferman
	BartonB 400	T	11:00	6	Michael Opferman
	Beury 121	W	11:00	7	Michael Opferman
Labs					Noel, John
	SERC 210	M	11:00 – 12:50	49	
	SERC 210	M	1:00 – 2:50	50	
	SERC 210	T	11:00 – 12:50	45	
	SERC 210	T	1:00 – 2:50	46	
	SERC 210	T	3:00 – 4:50	47	
	SERC 210	W	11:00 – 12:50	51	
	SERC 210	W	1:00 – 2:50	53	
	SERC 210	W	3:00 – 4:50	54	
	SERC 210	R	10:00 – 11:50	44	
	SERC 210	R	12:00 – 1:50	48	
	SERC 210	R	2:00 – 3:50	52	
Homework	MasteringPhysics	-			
Quizzes	MasteringPhysics	-			

Course Description

An algebra-based introduction to the basic principles of physics: Mechanics - *motion, forces, work, and energy* – Fluids, Oscillations, Waves, Sound, Kinetic Theory, and Thermodynamics.

Text and Materials

Text:* *Essential College Physics*, Volume 1, with Mastering Physics kit (1st edition)

Authors: Andrew Rex and Richard Wolfson

Publisher: Pearson/Addison-Wesley

ISBN-10: 0321611187

ISBN-13: 9780321611185

MasteringPhysics Access: This is an access code for the MasteringPhysics online course material. A code will be bundled with the text if you purchased it from the campus bookstore. If you do not have an access code, then you will need to acquire one separately. The most straightforward way to do this is to purchase one from Pearson Education at: www.masteringphysics.com. The Mastering Physics ID for this course is “GENPHYSNEWBY79322”.

Clicker: An “LCD RF” clicker can be purchased through the campus bookstore or online from Turning Technologies or a trustworthy third-party vendor. You will need to follow the instructions online at <https://computerservices.temple.edu/clickers-students> to register your clicker.

Scientific Calculator: Any scientific or graphing calculator will do. During exams, however, you will be restricted to devices that lack communication abilities. Smartphones, tablets, or laptop computers with a calculator program will not be acceptable during exams.

Computer Access and a Spreadsheet Program: Homework and Quizzes are both online. As such, access to a computer (either your own or a computer lab) is necessary. Also, you will need a word processor and a spreadsheet program for your lab reports. Suitable software suites include Microsoft's Office (Word and Excel), Apple's iWork (Pages and Numbers), or the free OpenOffice or LibreOffice (Writer and Calc).

Optional Materials:

Students might also consider obtaining the **Student Solutions Manual:**

Student Solutions Manual for *Essential College Physics*, Volume 1

Authors: Andrew Rex and Richard Wolfson

Publisher: Pearson/Addison-Wesley

ISBN-10: 0321611209

ISBN-13: 9780321611208

* Owing a textbook is not strictly required for this class, as all of the material covered was discovered at least 150 years ago. Most introductory physics books cover the same material in different ways, and online references now contain most of this information as well. The instructor, however, feels that the assigned text is the most relevant and immediately useful for the objectives set forth by this course.

Course Support

This course is part of a pilot program of the Physics Department to centralize teaching support. You are welcome to ask questions during any class period or during instructors' respective office hours, but if you wish to ask a question via email, have a question about your grades, or have another concern, please send email to the correct link found here: <https://phys.cst.temple.edu/>.

Assessment Tools

SUMMARY	Grade Quantum ¹	Assignments	Total Percentage
Labs	~1.8 %	11	20%
Online Homework	~1.43 %	14	20%
Diagnostic Quizzes	~0.71 %	14	10%
Participation	~0.24%	42 (49)	10%
Exam 1	-	1	10%
Exam 2	-	1	10%
Final Exam	-	1	20%
			100%

Lectures & Recitations: While your presence at lectures and recitations is not strictly required, in-class clicker quizzes and recitation activity both count towards your participation grade. Note that while there are 49 opportunities for participation credit (36 non-exam class periods and 13 recitations), only 42 of these will be counted towards your participation grade. This means that up to 7 lectures and/or recitations may be missed without penalty. Note that participation at more than 42 meetings **will not** be counted as extra credit; however, frequent attendance will most likely improve your grade in other areas of this course.

Labs: Laboratory experiments will be coordinated with course material. The aim of the lab portion of this course is to give you hands-on experience with physical laws, and more importantly, to let you test and prove physical laws to yourself.

After each lab session you will turn in a short, 2-3 page report. Each report should be written in a narrative form, and will be graded based on the following criteria:

1. Descriptive Title and names of all participating/collaborating students. Underline your name.
2. What significant question was addressed in this lab exercise?
3. What did you (or your group) do, and in what order?
4. What measurements did you take?
5. Any precautions or special actions that you took; safety steps, and 'tweaks' that may have improved your results.
6. Write out any calculations preformed.
7. Display data in graphs and/or tables.
8. Fit lines and/or curves to the graphed data.
9. What problem did you solve – your conclusions.

¹ The word “quantum” means the smallest possible amount of a quantity. Here, it refers to the grade per assignment.

A well-written lab report should not only clearly present results and conclusions, but also be descriptive enough that another group could reproduce your result using only your report.

Online Homework: Homework will be assigned on a weekly basis through MasteringPhysics. The aim of homework problems is to give you time to work through and understand the physical concepts covered in this course. So while students are encouraged to work through homework problems as a group and to use external references to aid their efforts, you should be careful to not submit answers without fully understanding how they were derived.

Diagnostic Quizzes: In addition to weekly homework assignments, there will be a weekly quiz assigned through MasteringPhysics. These quizzes differ from the homework assignments in that they meant to be completed individually and are *timed* - you will have only 90 minutes to complete the quiz. This timer starts when you first access the quiz, and ends 90 minutes later. There is no ability to pause or reset a quiz once it is started. Your grade and the solutions to each quiz will be posted immediately after each assignment is due.

The goal of the diagnostic quizzes is to give you the opportunity to test your individual knowledge of a given topic and receive frequent feedback. Do not work with others or use online sources during the quiz! While these may improve your quiz grade slightly, it will prevent you from fairly assessing yourself and will hurt your performance on the more important (and heavily-weighted) exams. To encourage individual, fair work, the quizzes will be graded out of 70% of the points possible. That is, 70-100% correct on a diagnostic quiz will grant you 100% of the credit for that assignment, and any score lower than 70% will be graded as $(\text{your score } \%) / 70$. You cannot receive more than 100% credit for any quiz.

Exams: There will be two midterm exams each accounting for 10% of your final grade, and a **cumulative** final exam that will count for 20% of your final grade.

For each exam you will be provided with a sheet that includes all formulas and constants covered up until that point.

If you must miss an exam, please provide a documented and valid (academic, career, health, religious, family, or legal) reason at least 1 week in advance of the exam date, so that there is time to schedule a make-up exam. If a valid documented excuse is NOT provided 1 week in advance, then NO make-up exam can be given without official documented medical or legal emergency.

Tips for Studying: Physics is math-intensive field, and as such, requires lots of practice in order to obtain proficiency. Very few individuals just “get” physics the first time they see it; even famous individuals such as Albert Einstein and Isaac Newton spent enormous amounts of time working through practice problems. The homework, recitation, quiz, and lab questions are generally the *minimum* practice needed understand the topics in this course. If you find the material difficult, you will want to attempt additional problems on your own.

- “Think then Share” - when it comes to homework. Give it an honest try by yourself, then work with friends to work out the tricky parts.
- “Be the Teacher” - when studying for exams, try working with one or more classmates and take turns explaining material to each other. Not only will this organize your thoughts, but it will make you very aware of any gaps in your knowledge.

- Complete the diagnostic quizzes on your own! The “diagnostic” part is for you: feedback on these quizzes will help you realize which areas you need to focus on when studying.

Grading

Grades in this class will not be curved or rounded at the end of the semester. The above assessments describe how you will earn your grade in this course, up to a maximum of 100%. Extra credit may or may not be available, at the discretion of the instructor, but will not represent a significant portion of your grade.

Your final grade will be determined based on your earned percentage of points available in this course, as follows:

90 or above: “A”

75 to 89.99: “B”

60 to 74.99: “C”

50 to 59.99: “D”

Under 50: “F”

No grade modifiers will be used.

Academic Dishonesty

Students are encouraged to work together on labs and homework, but are expected to submit their own answers. Evidence of dishonest work on any assignment will result in a “zero” grade for that assignment. Dishonest work on an exam, or repeated abuses, will result in an automatic failing grade in the course.

Schedule, Dates

Week	Chapter	Topics	Labs	Comments
#1: Jan 12 - 16	1	Introduction and Measurement	No Lab	
#2: Jan 19 - 23	2	Motion in 1-dimension	No Lab	No Class Monday
#3: Jan 26 - 30	3	Motion in 2-dimensions		Add/Drop deadline
#4: Feb 2 - 6	4	Force and Motion		
#5: Feb 9 - 13	5	Work and Energy		
#6: Feb 16 - 20	6	Momentum and Collisions		
#7: Feb 23 - 27	7	Oscillations		<i>Exam 1 (Friday)</i>
#8: Mar 2 - 6				Spring Break
#9: Mar 9 - 13	8	Rotational Motion		
#10: Mar 16 - 20	9	Gravitation		
#11: Mar 23 - 27	10	Solids and Fluids		
#12: Mar 30 – Apr 3	11	Waves and Sound		
#13: Apr 6 - 10	12	Temperature and Kinetic Theory		<i>Exam 2 (Friday)</i>
#14: Apr 13 - 17	13	Heat and Phases		
#15: Apr 20 - 24	14	Thermodynamics		
#16: Apr 27		Review		Mon: Classes end

Important Dates:

Homework: Weekly, due Sundays at 11:00pm

Diagnostic Quizzes: Weekly, due Sundays at 11:59pm

Midterm Exam 1: Feb 27

Midterm Exam 2: Apr 10

Final (cumulative) Exam: May 01, 8:00-10:00am