Syllabus: Phys 243 001 College Physics I, Fall 2022

Professor: Dr. Harold A. Geller E-mail: hgeller@gmu.edu

Office: Planetary Hall 233 Office Hours: MWF 0930-1030 or BA

Course format: In-person lectures (+iClicker) and recitations. Online homework.
Lecture/Date/Time: MWF 8:30–9:20 AM.
Course home: Blackboard, course 202270.70317 PHYS-243-001
Course Webpage: http://physics.gmu.edu/~hgeller/PHYS243Fall2022/
Syllabus:http://physics.gmu.edu/~hgeller/PHYS243Fall2022/PHYS243Fall2022Geller.pdf

Scope and Intended Audience for This Course: This is the first course in a two-semester, non-calculus physics course intended for all majors excluding physics, astronomy and engineering. We cover topics in measurement, kinematics, work and energy, momentum, circular motion, gravitation, rotational dynamics, static equilibrium, fluids, oscillations and waves, sound, kinetic theory of gases, and thermal physics. **Note well**: the lab (PHYS 244 College Physics I Lab) is a **separate and independent course**. You may or may not need to take the lab, depending on your major's requirements.

Prerequisites: Working knowledge of algebra and trigonometry.

Important Dates

Monday 22 August 2022	First Day of Classes
Monday 29 August	Last day to add classes
Tuesday 6 September	Last day to drop with 100% tuition refund
Tuesday 13 September	Last day to drop with 50% tuition refund
Wednesday 14 September – Tuesday 27 September	Unrestricted Withdrawal Period: 100% Tuition Liability
Monday 26 September	**Examination #1**
Wednesday 28 September – Monday 24 October	Selective Withdrawal Period: 100% Tuition Liability
Monday 10 October Tuesday 11 October	**No Classes on Monday the 11th** **Monday classes meet on Tuesday**
31 October 2022	**Examination #2**
Wednesday 23 November – Sunday 27 November	Thanksgiving Recess
Saturday 3 December	Last day of classes
Friday 9 December **7:30 AM – 10:15 AM**	**Official GMU Final Exam Date**

Required: An access code to "Modified Mastering Physics", an online homework system. I recommend purchasing the access code via the link in Blackboard. That will take you to the right place so that you can get the correct version. It's also less expensive this way. In the past, students have mistakenly bought the wrong version of the access code, resulting in headaches for everyone.

Recommended: The corresponding textbook, **Physics: Principles with Applications** by Douglas C. Giancoli, 7th Edition, published by Pearson, Prentice Hall. We will use Chapters 1 – 15, and the course is structured based on this book.

Required: Personal Response System (PRS) used during in-person lectures is the iClicker Student App. It is available online at https://www.iclicker.com/

Optional: As supplemental reading, or if you choose not to buy the Giancoli textbook, you can use the OpenStax College Physics textbook available for free online. While I'm certain that this book contains the relevant physics, I am not able to comment about how accessible it might be, or how well it aligns with what we will be doing in class. You can access it at: https://openstax.org/details/books/college-physics.

Required: A scientific calculator of some sort. You'll need to evaluate trigonometric functions, exponentials, and logarithms. You should know how to use your calculator! Typical user errors involve order of operations (if in doubt, use parentheses), problems with sums in the denominator, and inadvertently using the wrong degree/radians setting.

Expect to work 6-12 hours per week for this course

Components of the class:

- Weekly Lessons, containing online lecture modules
- Online homework via the Mastering Physics system
- Recitation sessions with a different instructor
- Two examinations and a final exam
- iClicker participation during lectures

Lecture Slides: Lecture slides covering 15 Chapters.

Homework in Mastering Physics: A schedule of assignments will be made available inside of Mastering Physics as the course proceeds. These include a mixture of interactive tutorials, short videos, and problems to solve.

Recitation: The purpose of recitation is to develop and reinforce problem-solving skills. The instructor will demonstrate solutions and answer your questions. Refer to your recitation instructor for information about how your recitation grade will be determined.

Exams: The three exams will be conducted in class (maybe changing to online depending upon circumstances of the semester) in a manner to be determined. For now I plan to schedule exams during the time allocated for this class in the Schedule of Classes: Monday/Wednesday/Friday, 8:30 AM – 9:20 AM. Note also the official GMU-scheduled final exam date and time: Friday 10 December 2021 7:30 AM – 10:15 AM. Keep these times open.

Grade Calculation: Your grade will be determined mathematically by weighing the various course components as indicated below. Remember that it is YOUR responsibility to make sure you study enough to get the grade you want.

Grade Calculation		***A Sample Letter-Grade Scale (TBD)***	
		A+	95% and above
Homework in Mastering Physics	10%	A	90% to 94.99%
iClicker responses from lecture	10%	A-	88% to 89.99%
Recitation	10%	B+	85% to 87.99%
Two Mid-Term Exams (each 22.5%)	45%	B	80% to 84.99%
Final Exam	25%	B-	78% to 79.99%
		C+	75% to 77.99%
		C	70% to 74.99%
		D	60% to 69.99%
		F	Below 60%

Your course letter grade will be assigned according to a scale **SIMILAR** to the one shown above. **This is a SAMPLE only**. I reserve the right to change the grade cutoffs based on my judgement depending on how the class goes. This is the second time I am teaching a class with Mastering Physics, and I expect I will need to adjust the grade curve somewhat.

Getting Help: You have the following resources available to you for help –

- **Professor Office Hours:** Online; Schedule to be determined.
- **Physics Tutor:** Dr. Shalom Fisher. See http://mason.gmu.edu/~sfisher2 for information.
- **Learning Assistants**: N/A
- **Online Discussion Board:** Available inside of Blackboard. This might be a great way to connect with your peers, discuss the course material, and post questions.

Emailing your Professor: Please understand that I am teaching 3 lectures this semester. That is over 300 students. Allow at least a couple of days before expecting a response.

Students must use their GMU email account to receive important University information, including communications related to this class. I am required to communicate with you only through your GMU email account.

In communication, students will be expected to be professional and respectful in correspondence and to only make reasonable requests of the instructor. We will be happy to clarify course material and answer legitimate questions; however, please exhaust other information sources (e.g., syllabus, Blackboard) for answering your question before contacting me. Remember, "poor planning on your part does not constitute an emergency on my part."

Academic Integrity: You are expected to observe the GMU Honor Code. The Honor Code is as follows:

> *To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:* **Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.**

See http://oai.gmu.edu for further information.

Of particular relevance to our class: Some kinds of participation in online study sites violate the Mason Honor code. These include accessing exam or quiz questions for this class; accessing exam, quiz, or assignment answers for this class; uploading of any of the instructor's materials or exams; and uploading any of your own answers or finished work. Use of such sites is detrimental to developing a good understanding of the course material, and is not in your best interest.

Student Privacy Policy: George Mason University strives to fully comply with FERPA by protecting the privacy of student records and judiciously evaluating requests for release of information from those records. Please see George Mason University's student privacy policy https://registrar.gmu.edu/students/privacy/

University Email Policy: Mason uses electronic mail to provide official information to students. Examples include notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly.

Students are also expected to maintain an active and accurate mailing address in order to receive communications sent through the United States Postal Service.

How to Approach This Course by Dr. Barreto

In order to learn physics, you actually must teach yourself. There really is no other way. You must do the thinking and the learning. Your professor can only assist and provide guidance and clarity.

Consider learning to play the piano. You could attend dozens of lectures in which a teacher explains what you do to play the piano: how to hold your hands, how to move your fingers, etc. But if you sit down at a piano after that, you will not be able to play it. You must practice. There is no other way. In physics, practice consists of solving problems.

When you start working on homework problems, you may find that you need some help. That's perfectly OK – we all did at first (even your instructors!). You can find help in many ways: by following the lecture slides online, by looking at solved problems in the textbook, by working the tutorial problems and following the hints, by asking in recitation, or by asking the Learning assistants or your professor during office hours. What you should **NOT** do is look up the answers online. If you do that, you will get the illusion that you understand the problem. You will not be learning how to do it yourself. On the exams, you will need to do it yourself, and homework is the main way you will learn the thought processes required. Solving physics problems is a skill, and you can only learn a skill by practicing them yourself.

Homework problems in Mastering Physics may be multiple-choice or numerical. Some of them are "tutorial" problems that help you learn problem-solving techniques by giving hints that help you work through the problem. There is no penalty for opening a hint, however, you lose partial credit for answering questions in the hint incorrectly, or for asking for the answer to a hint. The hints are there to help you – use them if you need them! Homework problems are also one point each. If there are multiple parts, each part earns partial credit.

For numerical problems, you have six attempts to get the answer right. (The same goes for numerical questions in a hint.) There is no grade penalty for making mistakes in your first five attempts. If you get it wrong on the sixth attempt, or if you ask for the answer, you lose all credit. For multiple choice questions (or parts), you lose partial credit for each wrong answer. If a problem has more than one part, partial credit is assigned according to the number of parts.

You can still complete the assignment after the due date, but you will lose 10% credit for each day it is late.

If you score less than 90% on a homework assignment, you will be offered an extra credit assignment that is worth up to 2 points of extra credit. These are "adaptive assignments" in which the problems are chosen based on what mistakes you made, to help you concentrate on the things you have not yet mastered. If you score over 90% on the original assignment, you don't need to do these additional problems! The adaptive assignment is due two days after the original assignment's due date, with the usual 10% reduction per day that it is late. As the problems are different for each student, I will not be posting solutions to these problems. You can always ask about a particular problem in recitation or during office hours.

Basic Course Technology Requirements: Activities and assignments in this course will regularly use the Blackboard learning system, available at https://mymason.gmu.edu . Students are required to have regular, reliable access to a computer with an updated operating system (recommended: Windows 10 or Mac OSX 10.13 or higher) and a stable broadband Internet connection (cable modem, DSL, satellite broadband, etc., with a consistent 1.5 Mbps [megabits per second] download speed or higher. You can check your speed settings using the speed test on this website.) The iClicker student app is required for use as a personal response system.

Recitation activities will be announced by your instructor. It may use web-conferencing software (Blackboard Collaborate / Zoom). In addition to the requirements above, students are required to have a device with a functional camera and microphone. In an emergency, students can connect through a telephone call, but video connection is the expected norm.

Disability Accommodations: Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit http://ds.gmu.edu/ for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474

Sexual Harassment, Sexual Misconduct, and Interpersonal Violence: George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support. University Policy 1202: Sexual Harassment and Misconduct speaks to the specifics of Mason's process, the resources, and the options available to students. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703-380-1434) or Counseling and Psychological Services (703-993-2380). You may also seek assistance from Mason's Title IX Coordinator (703-993-8730; titleix@gmu.edu).

Student Support Resources
GMU provides many resources to support students, including:

- Counseling and Psychological Services
- The Learning Services Office or field-specific tutoring
- The Office of Diversity, Inclusion, and Multicultural Education (ODIME)
- University Career Services
- University Writing Center

Information and links regarding these and other student support offices are available on our Student Support Resources on Campus page.