

Physics 205
Modern Physics

- Class: MW 10:30 - 11:45 am, D115
- Professor: Dr. Jerry Gilfoyle; Office: Gottwald Science Center, D110; Phone: 289-8255; electronic mail: ggilfoyl@richmond.edu; Office hours: MF 4-5 pm, T 9-10 am, 2:30-3:30 pm. Other times by appointment or availability.
- Objective: To gain an understanding of the new ideas beyond classical physics and to develop problem solving skills.
- Textbooks: **Six Ideas That Shaped Physics - Units R and Q ONLY!**, by T.A. Moore (required) and **Physics for Scientists and Engineers** (the 131-132 text), 4/e by Knight (recommended).
- Prerequisites: Physics 132.
- Course work: The course will consist of lecture, lab, demonstration, and problem solving. Attendance at class for the entire period is required. Excessive unexcused absences will have a negative effect on your grades.
- Grading: Grades will be computed on the following basis:

Tests	30%(15% for each of 2 tests)
Midterm	20%
Homework	25%(includes labs)
Final exam	25%

Make-up tests, and homeworks will not be administered. If an activity is missed due to an excused absence the next activity will count extra to make up the loss. Unexcused absences will receive a grade of zero. An excused absence is given by the instructor for sufficient reason provided there is adequate warning in a timely fashion. The student is responsible for all missed work. Disability accommodations must be arranged with the instructor at least one week in advance.

- Tests: Tests consist of short-answer questions and problems based on readings, homework, lectures, and in-class work. Each test is 75 minutes. The final exam is three hours.
- Homework: Homework will be assigned regularly, but only a fraction will be collected. Exams are based on these assignments. Unexcused, late submissions will be reduced by one point if not handed in during the appropriate class period. An additional point will be subtracted for each subsequent day late. Once solutions are posted no homeworks will be accepted. Late submissions will be excused only at the discretion of the instructor. Lab notebooks will be periodically collected and graded. Each lab counts as a homework.
- Homework assignments will be listed on the course webpage (see above).
- You are encouraged to discuss the homework with others, but any work handed in must be entirely your own to receive full credit.
- Supplies: Pencils, a calculator, and a laptop are required for each meeting.

Physics 205 Schedule

Fall 2021

Date		Event	Date		Event
Aug	23	First class	Nov	8	Test 2
Sep	13	Test 1		24	Thanksgiving
Oct	6	MidTerm		26	Thanksgiving
	11	Fall Break	Dec	10	Final, 9-12 pm

Physics 205 Homework Assignments

Fall 2021

A VERY effective way to study physics is to do the homework as the material is covered in class and then do additional problems when you study for an exam. See the course website below for the latest updates on assigned homework problems.

<https://facultystaff.richmond.edu/~ggilfoyl/modern.html>

Electronic copies of the problems are linked to the homework assignment page. Others are in the texts. Solutions for those assigned problems can also be found on the course website at the appropriate time usually the week after they are assigned. The problems and solutions are password-protected and are solely for the use of students in Physics 205 and are not be shared with people outside this class. The solutions, in particular, are not be downloaded, printed, or archived in any way. Sharing, saving, or archiving these solutions are Honor code violations.

Help With Physics Homework

If you have trouble with homework help is available from me during my office hours (see page 1 of this syllabus) and at other times when I'm available. The Physics Department is also arranging tutoring sessions. More on that as the schedule develops. The Academic Skills Center (<http://asc.richmond.edu>, 289-8626 or 289-8956) provides several services including tutoring. A list of their services is at the following address along with other information.

<https://facultystaff.richmond.edu/~ggilfoyl/modern/links.html>

A summary of the services at the Academic Skills Center is on the last page of this syllabus.

Physics 205

Course Safety Rules, Procedures, and Educational Requirements

Holding face-to-face meetings during a pandemic is more than a little challenging. To reduce the chaos and maintain your health, safety, and sanity along with the integrity of your education here at Richmond, I list here rules and requirements to make this semester go a bit more smoothly.

- Maintain social distancing at all times in our meetings. This requirement is your responsibility. If you fail to maintain social distancing you will have to leave. More details will be discussed in our first meeting and as the semester progresses.
- Masks may be required as conditions evolve. You may be required at other times to wear gloves and/or face shields.
- Wipe down your table at the start and end of each meeting. Failure to do so will have a negative impact on your grade.
- You can pick where you sit in the laboratory, but you have to stay in that seat for each meeting. This is a University requirement to aid recording attendance and contact tracing. If you want to change seats, let me know and we will work something out.
- Bring your laptops to each meeting. Sharing screens via *Zoom* is the safest way for me to monitor your progress.
- If you don't have a headset that includes a microphone you must get one. These may be used to talk with me during labs. If obtaining a headset creates a hardship, let me know and we can work something out.
- If we need to use Zoom I will send out a Zoom invitation with a link to our class/lab meeting.
- Some quizzes and tests may be handed in electronically by taking photographs with your phone. To receive full credit, the entire quiz or test must be a single document in PDF format and be uploaded to the appropriate folder on **Box**. At this time the app CamScanner for taking photographs is recommended. When you upload the document the name of the file should begin with your last name followed by the date in year-month-day format, *e.g.* smith-20-oct-21.pdf. The **Box** folder is *Physics205* and there will be another folder inside *Physics205* named for the event, *e.g.*, quiz2.
- Given the unique conditions we face this fall, I will be attempting different methods to create a safe, rigorous, congenial, and professional learning environment. I will, at times, request feedback and it's important to respond clearly and seriously as we navigate the pandemic. We're all in this together.

SYLLABUS INSERT REGARDING ACADEMIC AND PERSONAL SUPPORT SERVICES

Hope N. Walton, Director Academic Skills

Below is a boxed statement that describes the services available from a myriad of resources. We recommend that you consider including this boxed statement in your course syllabus, on Blackboard, or perhaps on a separate handout. Of course, other support services that relate specifically to your course can also be added.

Staff members from the resources below are available for consultations about concerns related to students as well as issues related to services.

If you experience difficulties in this course, do not hesitate to consult with me. There are also other resources that can support you in your efforts to meet course requirements.

Academic Skills Center (asc.richmond.edu): Assists students in assessing their academic strengths and weaknesses; honing their academic skills through teaching effective test preparation, critical reading and thinking, information conceptualization, concentration, and related techniques; working on specific subject areas (e.g., calculus, chemistry, accounting, etc.); and encouraging campus and community involvement. Tutors will be available virtually. The on-call peer-tutors available for these appointments are listed in the Box file: [On-Call Online Tutors](https://richmond.box.com/s/dpe37chr2zodr3o1amtj8omjk72v2ktb) (<https://richmond.box.com/s/dpe37chr2zodr3o1amtj8omjk72v2ktb>). Email [Roger Mancastroppa](mailto:rmancast@richmond.edu) (rmancast@richmond.edu) and [Hope Walton](mailto:hw Walton@richmond.edu) (hw Walton@richmond.edu) for appointments in academic and life skills to request a Zoom conference.

Boatwright Library Research Librarians: (library.richmond.edu/help/ask/ or 289-8876): Research librarians help students with all steps of their research, from identifying or narrowing a topic, to locating, accessing, evaluating, and citing information resources. Librarians support students in their classes across the curriculum and provide library instruction, tutorials, research guides, and individual help. All research support will be provided online or by appointment and students can contact a librarian for help via email (library@richmond.edu), text (804-277-9ASK), chat, or Zoom (by appointment).

Career Services: (careerservices.richmond.edu or 289-8547): Can assist you in exploring your interests and abilities, choosing a major or course of study, connecting with internships and jobs, and investigating graduate and professional school options. We encourage you to schedule an appointment with a career advisor early in your time at UR.

Counseling and Psychological Services (caps.richmond.edu or 289-8119): Assists currently enrolled, full-time, degree-seeking students in improving their mental health and well-being, and in handling challenges that may impede their growth and development. Services include brief consultations, short-term counseling and psychotherapy, skills-building classes, crisis intervention, psychiatric consultation, and related services.

Disability Services (disability.richmond.edu) The Office of Disability Services works to ensure that qualified students with a disability (whether incoming or current) are provided with reasonable accommodations that enable students to participate fully in activities, programs, services and benefits provided to all students. Please let your professors know as soon as possible if you have an accommodation that requires academic coordination and planning.

Speech Center (speech.richmond.edu or 289-6409): Assists with preparation and practice in the pursuit of excellence in public expression. Recording, playback, coaching and critique sessions offered by teams of student consultants trained to assist in developing ideas, arranging key points for more effective organization, improving style and delivery, and handling multimedia aids for individual and group presentations. Remote practice sessions can be arranged; we look forward to meeting your public speaking needs.

Writing Center (writing.richmond.edu or 289-8263): Assists writers at all levels of experience, across all majors. Students can schedule appointments with trained writing consultants who offer friendly critiques of written work.