Instructor:

Dr. Howard L. Richards 304-696-6466 richardsh@marshall.edu

Office Hours:

	Monday	Tuesday	Wednesday	Thursday	Friday
08:00	PHY 201		PHY 201		PHY 201
08:30					
09:00					
09:30					
10:00	Office Hours				Office Hours
10:30					
11:00			PHY 101L		
11:30					
12:00					
12:30					
01:00	FYS 100	Office Hours	FYS 100	Office Hours	FYS 100
01:30					
02:00					
02:30	Office Hours		Office Hours		
03:00					
03:30					
04:00	PHY 203		PHY 203		PHY 203
04:30					

Textbook:

College Physics, by Eugenia Etkina, Michael Gentile, Rutgers University, and Alan Van Heuvelen, Addison-Wesley, 2014.

Recommended: *College Physics.* OpenStax College. 21 June 2012. Download for free at http://cnx.org/content/col11406/latest/.

Catalog Description:

203 College Physics 2. 3 hrs. I, II, S.

Second half of an introduction to physics for students of natural (life) sciences, using algebra and vectors by triangles: E&M fields, circuits; ray optics, interference; atoms, nuclei.

General Description:

This course is the second half of a one-year introductory course in physics that uses algebra and trigonometry but not calculus. It is designed for students having their main interest in Biology, (Pre)Medicine, Architecture, Technology, or the Earth and Environmental Sciences. At the end of this course the student should be able to apply sound reasoning skills and the principles and formulae of physics to solve simple problems in electrostatics, magnetostatics, DC and AC circuits, and ray and wave optics. Relativity, quantum mechanics, and particle physics will be introduced.

Grades:

F < 60 ≤ D < 70 ≤ C < 80 ≤ B < 90 ≤ A **Max score in homework is 100.**
25% Exam 1 **25% Exam 2** **30% Final Exam** **5% Highest Exam Grade**
10% MasteringPhysics Homework **5% Presentations**

Students making a score of less than 1/2 the class average on the final exam will fail the class. For example, if the class average is 80, you must make at least a 40 on the final to pass.

Exams:

The first exam will cover vector algebra, electrostatics, and circuits. The second exam will be over magnetism and ray optics. The final exam will be cumulative; in addition to the material covered in the first two tests, it will include wave optics and multiple-choice questions about relativity, quantum mechanics, and particle physics. The Final Exam is required of all students in accordance with Marshall University policy as discussed on page 92 of the 2015-16 Undergraduate Catalog.

Homework:

Homework is online at www.masteringphysics.com. Some textbooks may come with a key for access to masteringphysics included, but if you do not have such a key, you can purchase access through the web site. The course ID is **PHY203FALL2016RICHARDS**.

Problems with the technology of the website should be directed to the attention of customer support. Only problems with the physics should be addressed to the instructor, either during office hours or (since any difficulty you have is probably shared by several other students) during class time. Please feel free to ask questions, though!

Presentations:

Students must use the problem-solving sheet, which can be found on the MUOnline page for this course, for all presentations, each of which will show the solution in detail of one problem. The same problem-solving sheet will also be used for some exam problems.

The problem-solving sheet is used for two reasons.

- It will promote good problem-solving habits.
- It will help students earn partial credit for difficult problems.

Problems are mostly from the OpenStax College textbook (http://cnx.org/content/col11406/latest/), possibly with some small modifications.

Problem assignments and instructions are on MUOnline under “Course Content”.

Policy for Students with Disabilities:

Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271, to provide documentation of their disabilities. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit http://www.marshall.edu/disabled or contact the Disabled Student Services Office.

Students with Medical Conditions:

In addition to the above, students with medical conditions, temporary or permanent, that may require special attention (for example, epilepsy) or accommodation should inform the instructor as soon as possible.

Your privacy will be respected.

Academic Dishonesty:

"Academic Dishonesty is something that will not be tolerated as these actions are fundamentally opposed to 'assuring the integrity of the curriculum through the maintenance of rigorous standards and high expectations for student learning and performance' as described in Marshall University's Statement of Philosophy." Cheating and other forms of academic dishonesty will bring serious sanctions, including possible expulsion, as described in the *Undergraduate Catalog.*

Cheating on an exam or quiz will result in being reported to
the Dean of Students and, at minimum, either
(a) having all suspect work marked wrong or
(b) having the course grade reduced by one letter grade,
whichever is the heavier penalty.

You may work together on homework, but do not just copy someone else's answers. Not only is this dishonest, it will make you more likely to do badly on the next test.

University Policies:

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802 .

- Academic Dishonesty
- Excused Absence Policy for Undergraduates
- Computing Services Acceptable Use
- Inclement Weather
- Dead Week
- Students with Disabilities
- Academic Forgiveness
- Academic Probation and Suspension
- Academic Rights and Responsibilities of Students
- Affirmative Action
- Sexual Harassment

Classroom Behavior:

Disorderly conduct that interferes with the normal classroom atmosphere will not be tolerated. The classroom instructor is the judge of such behavior and may instruct a disorderly student to leave the room with an unexcused absence. More serious misconduct may result in a complaint to the Office of Judicial Affairs. "Official University action will be taken when a student's or student group's behavior violates community standards, interferes either with the University's educational purpose, or with its duty to protect and preserve individual health, welfare, and property. When the behavior is aggravated or presents a continuing danger to the University community, accused students are subject to separation from the institution."

As a rule, **no food or drink** is allowed in the classroom. This is not always rigorously enforced, but certainly **it is never permissible to leave a mess**, whether crumbs or empty bottles, nor to distract the students around you. You are a grown-up, so act like one and be considerate.

Along the same lines, **all cell phones must be turned off or set to vibrate only** before the beginning of class. Any student who takes a call must leave the classroom to do so. Phone calls may not be placed or received during quizzes or tests. No devices may be used to play games or watch videos unrelated to classroom discussions.

You may not use your phone as a calculator during tests, nor any other tablet or device capable of sending or receiving text, emails, video, or phone messages. You can get a very good scientific calculator (e.g., Casio *fx-300ES PLUS*) for less than $20; I recommend choosing one with two-line display (so you can check for typos in your input) and at least 3 memory locations (usually named A, B, C, …) in which you can store intermediate results to avoid rounding error. Of course, if some other department required you to buy an unnecessarily expensive graphing calculator, you can use that, too.

Please do ask questions if you do not understand a concept, derivation, or calculation. Do not be embarrassed to ask; **if you have a question, others probably have the same question!** Let me know if I am going too fast or too slow. Private chats with other students, on the other hand, must be kept to an absolute minimum during class time; they are very distracting.

Schedule (except for the Final Exam, exam dates are subject to change):

Mon, Aug 22, 16	First day of classes.
Fri, Aug 26, 16	Last day to add a class.
Mon, Aug 29, 16	"W" withdrawal period begins.
Mon, Sep 5, 16	University Closed – Labor Day.
Mon, Sep 19, 16	Test 1 Presentations.
Mon, Sep 26, 16	**Test 1.**
Fri, Oct 28, 16	**Last day to drop an individual course.**
Mon, Nov 7, 16	Test 2 Presentations.
Mon, Nov 14, 16	**Test 2.**
Nov 21 – Nov 26	**Thanksgiving Break.**
Dec 5 – Dec 9	Semana de los muertos. Remaining presentations.
Fri, Dec 9, 16	**Last day to completely withdraw from all classes.**
Mon, Dec 12, 16	**Final Exam 4:00 – 6:00.**

Course Learning Objectives:

Students will...	Practiced by	Assessed by
Identify the equations and principles needed to solve problems in electrostatics, magnetostatics, circuits, and optics.	Classroom Discussions, Presentations, Homework	Exams
Use graphs, sketches, and/or diagrams as aids in conceptualizing and explaining the solutions of physics problems.		
Formulate and clearly communicate valid strategies for solving physics problems.		
Use scalar algebra, vector algebra, and trigonometry to calculate physical quantities.		