

Course Title/Number	College Physics II / PHY 203																																																
Semester/Year	Spring 2017																																																
Days/Time	PHY 203-202 (CRN: 4810): MWF 12:00 noon – 12:50 pm PHY 203-203 (CRN: 4811): TR 3:00 pm – 4:15 pm																																																
Location	Science Building Room 277																																																
Instructor	Dr. Howard L. Richards																																																
Office	Science Building Room 105																																																
Phone	304-696-6466 / Fax: 304-696-2494																																																
E-Mail	RichardsH@Marshall.edu																																																
Office/Hours	<table border="1"> <thead> <tr> <th></th> <th>Monday</th> <th>Tuesday</th> <th>Wednesday</th> <th>Thursday</th> <th>Friday</th> </tr> </thead> <tbody> <tr> <td>09:00</td> <td rowspan="5"></td> <td rowspan="2">PS 122-201</td> <td rowspan="2"></td> <td rowspan="2">PS 122-201</td> <td rowspan="2"></td> </tr> <tr> <td>09:30</td> </tr> <tr> <td>10:00</td> <td rowspan="3">PHY 101L-201</td> <td rowspan="3">Office Hours</td> <td rowspan="3">Office Hours</td> <td rowspan="3">Office Hours</td> </tr> <tr> <td>10:30</td> </tr> <tr> <td>11:00</td> </tr> <tr> <td>11:30</td> <td rowspan="2">PHY 203-202</td> <td rowspan="2">PHY 203-202</td> <td rowspan="2">PHY 203-202</td> <td rowspan="2">Lunch</td> <td rowspan="2">PHY 203-202</td> </tr> <tr> <td>12:00</td> </tr> <tr> <td>12:30</td> <td rowspan="5">Office Hours</td> <td rowspan="3"></td> <td rowspan="3">Lunch</td> <td rowspan="3">Office Hours</td> <td rowspan="5"></td> </tr> <tr> <td>01:00</td> </tr> <tr> <td>01:30</td> </tr> <tr> <td>02:00</td> <td rowspan="2">PHY 203-203</td> <td rowspan="2">Office Hours</td> <td rowspan="2">PHY 203-203</td> </tr> <tr> <td>02:30</td> </tr> <tr> <td>03:00</td> </tr> <tr> <td>03:30</td> </tr> <tr> <td>04:00</td> </tr> </tbody> </table>							Monday	Tuesday	Wednesday	Thursday	Friday	09:00		PS 122-201		PS 122-201		09:30	10:00	PHY 101L-201	Office Hours	Office Hours	Office Hours	10:30	11:00	11:30	PHY 203-202	PHY 203-202	PHY 203-202	Lunch	PHY 203-202	12:00	12:30	Office Hours		Lunch	Office Hours		01:00	01:30	02:00	PHY 203-203	Office Hours	PHY 203-203	02:30	03:00	03:30	04:00
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University Policies	<p>By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by 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</p> <p>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</p>																																																
Consumer Information and Disclosures	<p>To assist in locating federally mandated consumer information and disclosures, Marshall University has created a launching point at http://www.marshall.edu/disclosures/. Reports and information on a variety of specific areas, including financial aid, student privacy, student body diversity, the drug and alcohol abuse prevention program, employment and further education statistics for graduates, refund policies, and campus safety, are available from this website.</p>																																																

Course Description: From Catalog**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.

The table below shows the following relationships: How each student learning outcomes will be practiced and assessed in the course.

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.		

Required Texts, Additional Reading, and Other Materials

College Physics, by Eugenia Etkina, Michael Gentile, Rutgers University, and Alan Van Heuvelen. Addison-Wesley, 2014. (Available from the Circulation Desk in Drinko Library through the Textbook Loan Program. See <http://www.marshall.edu/uc/textbook-loan-program/> for details.)

Recommended: *College Physics*, by Urone, Hinrichs, Dirks, and Sharma. OpenStax College, 21 June 2012. Download for free at <http://cnx.org/content/col11406/latest/>.

Course Requirements / Due Dates

1. Presentation: Due Date Varies
2. Group Homework: Due Date Varies
3. Exam 1: Feb 16 or Feb 17 (Subject to Change)
4. Exam 2: Apr 6 or Apr 7 (Subject to Change)
5. Final Exam: May 2 or May 5

Grading Policy

F < 60 ≤ D < 70 ≤ C < 80 ≤ B < 90 ≤ A			
25% Exam 1	25% Exam 2	30% Final Exam	5% Highest Exam Grade
	10% Group 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.

Attendance Policy

Students are expected to be present and on time for each class meeting. Students who miss a graded activity (such as a test or presentation) without an excused absence may make up that activity within the next two weeks, but they will suffer a 20% penalty.

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 Disabled Student Services Office at Prichard Hall 11, phone **304-696-2271**.

Students with Medical Conditions:

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

Your privacy will be respected.

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 94 of the 2016-17 Undergraduate Catalog, http://www.marshall.edu/catalog/files/UG_16-17_published_08-25-16.pdf.

Homework:

This semester we will be using Activity Based Physics Alternative Homework Assignments along the lines developed by the University of Maryland Physics Education Research Group (<http://www.physics.umd.edu/ripe/perg/abp/aha/index.html>), although the many or most of the actual assignments will be created by the instructor. These will be team activities, with the teams created by the instructor in an attempt to ensure the teams are all comparable. Further details will be made available by the end of the first week of classes.

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.

Course Schedule

Mon, Jan 9, 17	First day of classes.
Fri, Jan 13, 17	Last day to add a class.
Mon, Jan 16, 17	University Closed – Martin Luther King, Jr. Day.
Tue, Jan 17, 17	“W” withdrawal period begins.
Thu, Feb 9, 17	Test 1 Presentations (Section 203).
Fri, Feb 10, 17	Test 1 Presentations (Section 202).
Thu, Feb 16, 17	Test 1 (Section 203).
Fri, Feb 17, 17	Test 1 (Section 202).
Fri, Mar 17, 17	Last day to drop an individual course.
Mar 20 – Mar 25	Frühlingsferien
Thu, Mar 30, 17	Test 2 Presentations (Section 202)
Fri, Mar 31, 17	Test 2 Presentations (Section 202)
Thu, Apr 6, 17	Test 2 (Section 203).
Fri, Apr 7, 17	Test 2 (Section 202).
Apr 24 – Apr 28	Semana de los muertos. Remaining presentations.
Fri, Apr 28, 17	Last day to completely withdraw from all classes.
Tue, May 2, 17	Section 203: Final Exam 3:00 – 5:00.
Fri, May 5, 17	Section 202: Final Exam 10:15 – 12:15.

For Additional Help:

- If you find yourself struggling, **let the instructor know**. Feel free to drop by during office hours – that's what they are there for!
- It may also be a good idea to study with other students taking the same course.
- A very good online tutorial for intro physics can be found at the HyperPhysics web page: <http://hyperphysics.phy-astr.gsu.edu/>.
- The Physics Department has a page of tutorial links at <http://www.marshall.edu/physics/tutoring-resources/>.
- There is also a tutoring center in Laidley Hall. See <http://www.marshall.edu/wpmu/uc/tutoring-services/> for details.
- Finally, a number of helpful explanations can be found at <http://www.nagt.org/nagt/jge/columns/compgeo.html>. That site is targeted at computational geology, but many of the ideas apply directly to physics.

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.”¹

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

¹ *Student Handbook*, available at <http://www.marshall.edu/student-affairs/files/15-16-Code-of-Conduct.pdf>

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.

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.”² 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.

² Ibid.