Syllabus for **PHY 201: General Physics I** Spring 2012
Science 277 TR 11:00—12:15
Dr. Howard Richards 304-696-6466 Howard.Richards@Marshall.edu

Instructor:

Dr. Howard L. Richards E-mail: Physics201@computationalphysics.us
Office: Science 105 Phone: (304) 696-6466

Instructor's Schedule (including office hours*):

	Tuesday	Wednesday	Thursday
9:00	Office Hours	PHY 202	Office Hours
10:00			
11:00	PHY 201	Office Hours	PHY 201
12:00			
12:15	Lunch		
1:00	PHY 202	PHY 202	Office Hours
2:00			PHY 101L
3:00	Office Hours	Office Hours	
4:00			Office Hours
5:00	PHY 202		
6:00			

Textbook:

College Physics, 9th ed., by Francis W. Sears, Mark W. Zemansky, and Hugh D. Young, Pearson, 2012, ISBN: 0321749804
Recommended:
Schaum's Outline of College Physics, 10th ed., by Frederick J. Bueche and Eugene Hecht, McGraw-Hill, 2005, ISBN: 9780071448147

Catalog Description:

201-203 General Physics. 3 hrs. I, II, S.
A course in general physics for all science majors with the exception of physics and engineering majors. 3 lec. (PR: MTH 127 or 130 and MTH 122 or 132; CR: PHY 202 and 204 for 201 and 203, respectively; 201 must precede 203)

General Description:

This course is the first 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 mechanics, including vibrations, waves and sound and problems involving kinetic theory and thermodynamics. Priority will be given to the earlier chapters, which are essential to any understanding of later material.

* Office hours are subject to change, with notice given in class and on the web page. The instructor will make a serious effort to be in his office during office hours, but circumstances will sometimes require him to be elsewhere. **Students are strongly urged to make appointments in advance when possible.**

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Grades:

F < 60 ≤ D < 70 ≤ C < 80 ≤ B < 90 ≤ A
70% Exams (3 Hour Exams + Final Exam)
20% Quizzes
10% Homework

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

Learning Objectives:

Learning Objective: Students will be able to...	Evaluated by		
	Homework	Quizzes	Tests
Produce a sketch that clarifies the geometrical relationships of quantities described in a written problem statement	X		X
Produce a free-body diagram that clarifies the geometrical relationship between vectors, as well as their components and resultants	X		X
Identify the variables (and constants) needed to solve problems encountered in first-semester physics	X		X
Identify the physical principles (such as conservation of momentum and conservation of energy) needed to solve problems encountered in first-semester physics	X		X
Identify and correctly apply the equations needed to solve problems encountered in first-semester physics	X		X
Formulate and explain a series of steps to solve problems encountered in first-semester physics	X		X
Use college algebra and vector algebra to execute the steps to solution	X		X
Use dimensional analysis to detect possible errors in equations produced en route to a solution	X		X
Use order-of-magnitude estimates to detect possible errors in the solution	X		X
Find the magnitude of a vector		X	
Decompose a vector into components		X	
Add and subtract vectors		X	
Find the dot product of vectors		X	
Find the cross product of vectors		X	

Exams:

Each hour exam will cover the material presented since the last hour exam, but note that mastery of earlier concepts and methods may be necessary to complete later problems. The final exam is comprehensive.

The contribution of the exams to the course grade is calculated as follows. All hours exams count as one exam unit each, but the final exam counts as 2 exam units. The lowest exam unit (perhaps a zero for a missed exam) will be dropped. If this is the final exam, this means that the final exam carries only the same weight as an hour exam (but remember the requirement to make ½ the class average). The average score on the remaining exam units is used in computing the course grade.

Final Exam is Required:

From page 136 of the *2007-08 Undergraduate Catalog*: "Students are required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor counts the examination as zero and reports the final grade of *F*. If the absence is the result of illness or some other valid reason beyond a student's control, the instructor reports a grade of *I*. In all cases, the student must verify the reason for the absence."

Homework:

Students must use the problem solving sheet, which can be found on MUOnline, for all homework submissions. (The homework assignments will also be posted online) This has two main purposes:

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

Each student is responsible to present the solution to one problem to the class. Typically, three presentations will be called for each class meeting. Except for excused absences, students will be called on in alphabetical order.

Quizzes:

Vector algebra is not only essential for PHY 201, it is assumed that students taking PHY 203 have already mastered it. However, it is clear that many students have had little or no previous exposure to vector algebra. For this reason there will be a quiz, or in some cases, a take-home assignment, about once a week on vector algebra. A typical quiz should be finished in less than 10 minutes and may consist of one to three questions.

Schedule:

The final exam is Tuesday, May 1 at 10:15 A.M.
Hour Exams will take place at approximately one month intervals.
See the course calendar on MUOnline for more details.

Attendance and Tardiness:

Students are expected to be on-time and present for all class meetings. An attendance record will be maintained by means of a sign-in sheet which students must initial at the beginning of class.

Please see pages 128—130 of the *2007-08 Undergraduate Catalog* for university policies on attendance, excused absences, and make-up work. Excused absences will also be granted for documented cases of personal illnesses that are contagious or distracting (such as ones that involve nausea) or for documented cases of family illness where the student is an important caregiver. **No excused absences will be given without documentation.** No excused absences will be given for moderate misfortunes, such as flat tires.

Students with excused absences for the scheduled time of an hour exam will be given make-up tests, usually shortly after the rest of the class takes the test. These tests will be similar in difficulty to the regular tests, but may have different questions/problems. **Any student arriving so late for a test that at least one person has finished the test will not be allowed to take that test (and will have an unexcused absence for that day).** Make-up tests for students with **unexcused** absences will be considered **only** for the final exam, and then on a case-by-case basis.

Inclement Weather Policy

See pages 95 and 96 of the *2007-08 Undergraduate Catalog* or www.marshall.edu/ucomm/weather.html for the University's inclement weather policy.

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. Speak to the instructor beforehand if you need an exception for medical or other serious reasons. PLEASE DO NOT SPIT ON THE FLOOR.

All cell phones must be turned off before the beginning of class unless special permission is granted by the instructor. In that case, the cell phone must be set to silent ring mode, and the student must leave the classroom to answer any call. If a cell phone rings during class, the student may be required to leave class that day and be marked absent.

1 *Student Handbook*, available at www.marshall.edu/student-affairs/sections/handbook/INDEX.HTML

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 pages 106—109 of the *2007-08 Undergraduate Catalog.* **Cheating on an exam will result at minimum in failing the entire course.**

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.

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 (including epilepsy) should inform the instructor as soon as possible.

Your privacy will be respected.

More Information About University Policies:

See http://www.marshall.edu/academic-affairs/?page_id=802 for information on University-wide policies regarding

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

2 Ibid.