

**PHYS 101**  
**Foundations of Physics**  
FALL 2007

**Instructor:** Dr. Robert H. Gowdy, PHS 2011, Tel: 828-1821, email: rhgowdy@vcu.edu.

**Class Schedules:** Sec 001: MWF 10:00-10:50p LFSCB 0151

**Office hours:** MW 11am-5pm R 1pm-5pm F 11am-1pm

**Optional Textbook:** *Conceptual Physics* (7th, 8th, 9th or 10th Ed.) by Hewitt.

**World Wide Web Page** The course will be taught from notes on the World Wide Web. From the VCU home page (<http://www.vcu.edu>), follow the links:

Faculty → Faculty/Staff Web Pages → Robert H. Gowdy → P101

To go directly to the primary site, use the URL:

[www.people.vcu.edu/~rgowdy/p101dcur/](http://www.people.vcu.edu/~rgowdy/p101dcur/)

**Material:** Chapters 1-6, 8, 21-23, 25, 27-30, 34;

Physics is the science of how things move. This course begins with a discussion of the nature of science and introduces the ideas of Galileo, Newton and Einstein, ideas that make up the discipline of *classical mechanics*. Classical mechanics lies at the heart of the science of physics and studies the motion of large objects — airplanes, footballs, planets, automobiles, ox-carts, and so on. Physics also treats the motion of objects that are too small to be seen — molecules, atoms and electrons. The motions of these tiny objects determine the properties of all materials.

The primary emphasis of this course is on *understanding the basic ideas of physics* — ideas such as force, energy, and momentum, which are fundamental to all of the other sciences and all of modern technology. Other introductory physics courses with different agendas are also offered by our department.

**Exams:** Each hour exam is approximately 30 multiple choice questions with one or more questions on each module covered. The exams will be given in class on the following dates :

Feb 07	Web Modules	001,004-010,012-013
Feb 28	Web Modules	014-020
Mar 28	Web Modules	021-022, g31,g33,r34-r40
Apr 23	Web Modules	r41,r42,077,080,082-084,086,092,099,100,102-107

The **final exam** is comprehensive and consists of approximately 120 multiple choice questions with at least one question on each module covered.

The final will be given on **Friday, December 14, 2007, from 8:00 AM.. to 11:50 PM.**

**You must take the final exam!**

**Quizzes:** The questions in the notes will be used to give quizzes during most lectures. After a major point is covered or reviewed, a question about that point will be displayed and you will be asked to indicate your answer on a remote keypad. Those keypads may be purchased at the VCU Bookstore and registered through our Blackboard website.

**Forum Participation:** An on-line discussion forum, the Physics Help! Forum, is available from the course web page. A separate sheet describes how you can use your contributions to this forum to augment your in-class quiz grade.

**Grading:** Compute your final score from your five exam scores (4 hour exams and a final) and quiz average as follows:

1. Total the highest four exam scores.
2. Add twice the final exam score.
2. Add the in-class-quiz average
3. Divide the result by seven.

Your score determines your letter grade: A=90.0-100.0, B=80.0-89.9, C=69.5-79.9, D=59.5-69.4

**Make-up Policy:** If you know that you cannot take an exam on the scheduled date, arrange to take a make-up **before** the scheduled date. **Makeup exams will not ordinarily be given after the scheduled exam dates.**

Make-up final exams will be given only in conjunction with requests for grades of incomplete.

**In-class quizzes may not be made up**, but you can use participation in the Physics Help! Forum to compensate for missing quiz grades. Some form of class participation, either real or virtual, is a requirement of this course.

**Access to the Notes:** Computers with World Wide Web connections as well as network ports for laptop computers are available to all VCU students at various locations around campus. If you have an on-line service at home, then you can use that to get to the notes. A printed version of the notes is available at the VCU Bookstore.

### Tentative Schedule of Topics

1. Science	Aug 27-31	Mods 1, 4-6
2. Change, Velocity, Acceleration	Sep 05-07	Mods 7-10
3. Acceleration, Inertia, Mass	Sep 10-14	Mods 12-15
4. Force, Momentum	Sep 17-21	<b>exam1</b> , Mods 16-18
5. Work, Energy	Sep 24-28	Mods 18-20
6. Energy Conservation	Oct 01-05	Mods 21,22
7. Gravitation	Oct 08-12	<b>exam2</b> , Mod g31-g33
8. Relativity, Space-time	Oct 15-17	Mods r34-r38
9. Space-time, The Twin Paradox	Oct 22-26	Mods r39-r41
10. $E = mc^2$	Oct 29-/2	<b>exam3</b> , Mod r42
11. Electricity, Ohm's Law	Nov 05-09	Mods 77, 80, 82-84,86
12. Magnets, Light	Nov 12-16	Mods 92,99,100, 102-103
13. Images, Optics, The Eye	Nov 19-21	Mods 104-107,109,110
14. Photoelectric Effect, Atomic Spectra	Nov 26-30	<b>exam4</b> , 117-118
15. Lasers, Teaching Evaluation, Review	Dec 03-07	119
<b>Final Exam</b>	Dec 14	All topics covered

### Accommodations for the Disabled

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require Virginia Commonwealth University to provide an 'academic adjustment' and/or a 'reasonable accommodation' to any individual who advises us of a physical or mental disability. If you have a physical or mental limitation that requires an academic adjustment or an accommodation, please arrange a meeting with me at your earliest convenience. Additionally, if your coursework requires you to work in a lab environment, you should advise the instructor or department chairperson of any concerns you may have regarding safety issues related to your limitation(s).

Note: Please contact the appropriate Coordinator of Services for Students with Disabilities to obtain an official memo detailing the academic adjustments or accommodations which you need.

### Honor Code

You are required to be familiar with and follow the VCU Honor Code. Should I become convinced that a violation (such as cheating) has occurred, I will not give a warning or ask for an explanation. Instead, I will file a formal charge to the Office of Judicial Affairs & Academic Integrity.

You are encouraged to give and receive help on quizzes but the quiz answers should be your own. **Responding with another student's CPS keypad will be regarded as an honor code violation.**

## **What to Know and Do To Be Prepared for Emergencies at VCU**

1. Sign up to receive VCU text messaging alerts (<http://www.vcu.edu/alert/notify>). Keep your information up-to-date.
2. Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on-campus classrooms.
3. Listen for and follow instructions from VCU or other designated authorities.
4. Know where to go for additional emergency information (<http://www.vcu.edu/alert>).
5. Know the emergency phone number for the VCU Police (828-1234). Report suspicious activities and objects.

## **Student Conduct**

Students should familiarize themselves with the guidelines for appropriate student conduct as outlined in the VCU 2006-2007 Resource Guide. During class it is expected that inappropriate electronic devices (cell phones, pagers, etc.) are turned off.