

PHYS 103 Elementary Astronomy
SPRING 2012

Instructor: Dr. Robert H. Gowdy, 701 W Grace St. 2411, Tel: 828-1821, email: rhgowdy@vcu.edu.

Class Schedule: MWF 11am-11:50am Grace Harris Hall 0101

Office hours: By appointment.

Required Item: CPS Pulse RESPONSE PAD from Einstruction. Available at Bookstores (\$27.15 new).

Optional Textbooks: *Astronomy: A Beginners Guide...* (3rd, 4th, 5th or 6th Ed.) by Chaisson/McMillan.

Astronomy Study Guide: Notes to Accompany the Online Textbook by Robert H. Gowdy

Open Website: The course will be taught from notes on the open World Wide Web. From the VCU home page (<http://www.vcu.edu>), type "Gowdy" in the search box. Then click:

Go → Robert H. Gowdy Homepage → P103

To go directly to the primary site, use the URL: <http://www.courses.vcu.edu/PHY-rhg/astron/>

The Open Website is accessible to anyone and will remain available to you after you have completed the course. In addition to the material presented in class, it includes about 2/3 of the possible multiple-choice quiz and test questions with active links to the answers.

Blackboard Website: Each section of our course also has a website on Blackboard. No course materials are presented there, but the Blackboard website provides access to our Astronomy Help Forums, online tests, a summary of your grades, and a place to turn in project materials for grading. Each Blackboard website may be accessed only by students who are currently enrolled in the corresponding section of this course.

LON-CAPA Website: All of the possible multiple-choice test and quiz questions are available for practice at his website. In addition, there are numerical answer questions to test your understanding of formulas. To get there, go to <http://loncapa.vcu.edu>, log in with your VCU eID (your VCU email login). The login has a third line called "Domain:" Be sure that it is set to "vcu." Select PHYS 103 from your course list. Then select "Course Contents" from the main menu at the top of the display.

Material: Chapters P; 1-18 in textbook. Modules 1-29 in notes on the open web page and in the Study Guide.

Astronomy answers the basic question "What is our place in the Universe?" As the oldest of the sciences it offers many examples of how science works. As a science that takes the entire universe as its subject matter it incorporates and applies all of the other sciences. You will learn how the combination of measurements and well-tested models makes it possible to know things that we could never experience directly. We know the distance to the center of the Earth even though no-one has ever gone there. Similarly we know the temperature and chemical composition of the center of the Sun and many other seemingly impossible things. You will learn how very special life on Earth is when we discuss the conditions that might be required for life elsewhere. You will learn ways to think rationally about unlikely but terrifying events such as asteroid impacts. You will learn the power of the basic laws of motion that come from physics when we discuss the motion of planets and the prediction of asteroid impacts. You will learn the origin of the Sun's energy and you will learn how life on Earth uses that energy.

Projects: Up to 5% **extra credit** may be earned by completing the Moon Observation Project. **Pre-view deadline: February 17, 2012; Project deadline: April 13, 2012.** See the project instructions for details.

Pre- and Post-Tests: 1% **extra credit** may be earned by taking the online Science Literacy Assessment exam as a pre-test at the start of the semester and as a post-test at the end of the semester. These tests will be available at our Blackboard web site and are announced through your VCU email.

Exams: Each hour exam is approximately 50 multiple choice questions with questions on each module covered. The hour exams will be given in class on the following dates :

Feb 6	Lecture Weeks	1,2,3,4
Mar 5	Lecture Weeks	5,6,7,8
Apr 02	Lecture Weeks	9,10,11
Apr 23	Lecture Weeks	12,13,14

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

Grace Harris Hall 0101 8:00 a.m. Monday May 7, 2012

You must take the final exam!

Last Day to Drop with a W: March 23, 2012

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. The CPS enrollment codes needed to activate them may be purchased online (using a credit card) or you may buy one for cash at the Bookstore. Use the "Tools" | "CPS Connection" link on our **Blackboard website** to register your keypad for use in this course.

Forum Participation: An on-line discussion forum, the **Astronomy Forum**, is available from the Blackboard website. Each contribution to the forum, whether a question or an answer, whether right or wrong, adds ten points to the sum of all your quiz grades. Since a perfect quiz adds 100 points, you need about 10 contributions to make up for missing an entire class. You can make these contributions at any time, but note the following restrictions:

- Dumping large numbers of contributions onto the forum all at once is not allowed because it makes give-and-take discussions impossible. **Only your first 10 contributions will be counted for credit on any one day.**
- Contributions made after midnight on May 1, 2012 will not be counted.
- You may use forum contributions to get your overall quiz average up to 100%, however you cannot go over 100%.
- Contributions will be deleted (and thus not counted) if they are duplicates, plagiarized, on the Frequently Asked Questions List, fail to address a question in specific terms or otherwise violate the Forum Guidelines.

Grading: Each exam and quiz has a maximum score of 100. Compute your final score from your **five exam scores** (4 hour exams and the final) and quiz average as follows:

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|---|
| 1. Total the highest four of your five exam scores. |
| 2. Add twice the final exam score. |
| 3. Add the in-class-quiz average. |
| 4. Divide the result by seven. |
| 5. Add any extra credit points |

Note that step 1 means that your lowest hour exam score gets **replaced** by your final exam score unless the final exam score is even lower.

Your score determines your 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.** Emergency absences are taken care of by the replacement that occurs in step 1 of the grading scheme.

Makeup 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 Astronomy Forum to compensate for missing quiz grades.

Participation Policy: Some form of class participation, either real or virtual, is a requirement of this course. Even if you know all of the course material, you will need to share what you know to get a good grade.

Tentative Schedule of Topics

Week/	Date	Modules	Topics
1	Jan 18-20	1, 2	Syllabus, Sky Motions, Scientific Models
2	Jan 23-27	2,3,4,5	Modelling The Earth and Planets
3	Jan 30-/3	5,6,7,8	Science and Model Building, Models of Motion
4	Feb 6-10	-, 8, 9	Exam 1, Gravity
5	Feb 13-17	9, 10, 11	Solar System Overview
6	Feb 20-24	11	Terrestrial Planets
7	Feb 26-/2	12	Jovian Planets
8	Mar 5-9	13, 14	Exam 2, Comets, Formation of the Solar System
9	Mar 19-23	15, 16, 17	Atmosphere and Interior of Earth, Earth Impacts
10	Mar 26-30	18, 19	Requirements for Life, Search for Life
11	Apr 2-6	- , 20, 21	Exam 3, Measuring Star Distances and velocities
12	Apr 9-13	21, 22,23,24	Star Brightnesses and Color, The Hertzsprung-Russell Diagram
13	Apr 16-20	24,25,26	The Births and Deaths of Stars
14	Apr 23-27	-, 27,28	Exam 4, Supernovas, Neutron Stars
15	Apr 30	29	The Milky Way Galaxy

Student Conduct

Please do not talk when the instructor is speaking. Side-conversations make it difficult for other students to follow the lecture. In this course, there will be a quiz question discussion period every few minutes and you can talk all you want during those times.

During class it is expected that inappropriate electronic devices (cell phones, pagers, etc.) are turned off.

Familiarize yourself with the guidelines for appropriate student conduct as outlined on page 140 of the 2010-2011 VCU Insider Student Handbook and Resource Guide at

http://www.students.vcu.edu/docs/Insider_10-11_book_final.pdf

VCU Honor System

All VCU students are presumed upon enrollment to have acquainted themselves with and have an understanding of the Honor System. Therefore, it is a student's responsibility to ask course instructors to clarify expectations for each assignment in order to be in compliance with the Honor System. The VCU Honor System policy statement and purpose is described in

http://www.provost.vcu.edu/pdfs/Honor_system_policy.pdf.

You are required to be familiar with and follow the VCU Honor System. 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 projects and quizzes but the project reports and quiz answers should be your own. **Duplicate project reports will be regarded as honor code violations.**

Responding to quiz questions with another student's cps keypad is an honor code violation. Any student found using more than one cps keypad to respond to quiz questions will be required to surrender those keypads to the instructor so that their owners can be identified.

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 qualified individual with a physical or mental disability who self-identifies as having such. Students should contact the Disability Support Services office on the Monroe Park Campus (828-2253) or on the MCV Campus (828-9782) for appropriate academic adjustments or accommodations.

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.