

**COURSE SYLLABUS**  
**ASTRONOMY 106      DESCRIPTIVE ASTRONOMY      3 credits**

**I. INSTRUCTOR**

Dr. Jay Badenhoop  
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Office Hours: MWF 9:00-9:30 & 10:30-11:00 AM; W 1-2 PM; TTh 10:30-11:30 AM; or by appt.

**II. TEXT (Required)**

*Foundations of Astronomy* (11th edition) by Seeds and Backman, Brooks-Cole, 2011.

**III. COURSE DESCRIPTION**

This course will give the student an introduction to the most important topics in astronomy, including stars, constellations, galaxies, nebulae, meteors, comets, Sun, Moon, solar system, and space exploration. No mathematics (except some arithmetic); only simple geometrical arguments employed. Some basic scientific principles will be applied to astronomical bodies.

**IV. COURSE CONTENT**

Unit	Deadline	Chapter(s)	Topic(s)
1	1/17/12	1, 4-5	Introduction and History of Astronomy
2	1/24/12	6-7	Light, Telescopes, and Observatories
3	1/31/12	2	Constellations and the Night Sky
4	2/07/12	20	The Earth
5	2/14/12	21.1	The Moon
	2/16/12	<b>TEST 1</b> + Observing Activity (weather permitting)	
6	2/21/12	19.1-19.3	The Solar System
7	2/28/12	21.2-22	Mercury, Venus, and Mars
8	3/06/12	23	Jupiter and Saturn
9	3/13/12	24	Uranus, Neptune, Pluto, and the Kuiper Belt
10	3/20/12	25	Asteroids, Comets, and Meteors
	3/22/12	<b>TEST 2</b> + Observing Activity (weather permitting)	
<b>Spring Break</b>			
11	4/03/12	8	The Sun and Solar Activity
12	4/10/12	9, 11-14	Stars, Spectra, Stellar Distances, Stellar Evolution
13	4/17/12	19.4	Extra-Solar Planets (most material not in text)
14	4/24/12	15-18	Galaxies and Cosmology
	4/26/12	<b>TEST 3</b>	

**V. METHODS OF PRESENTATION**

All materials are available online through eCampus. Suggested method for covering the materials:

- Read and take notes on the relevant chapter(s) of the textbook associated with the topic covered in each Unit
- Download and view the PowerPoint lecture presentation for that Unit posted to eCampus, following along in the textbook.
- Complete the homework assignment and activities for that Unit.
- Which material is most important will be indicated by the PowerPoint lectures and homework.
- Expect to spend at least 6-8 hours per week reading and completing assignments. As with most courses the information cannot be learned the night before the exam!
- **Do not procrastinate in reading the textbook, studying the lecture material, or doing the homework /activities or you will quickly fall behind!**

## VI. COURSE REQUIREMENTS

### A. Computer Requirements

- Computer with a DSL Internet (or faster) connection: required for eCampus, to watch the online videos, and to participate in the activities;
- Microsoft operating system (Ubuntu or other operating systems are not compatible with eCampus);
- Office 2000 or later version: ability to use Word and PowerPoint;
- MIX E-mail account: this is the only e-mail account which you may use for this course and through which the instructor will send information and notices to you – **CHECK YOUR E-MAIL FREQUENTLY!**
- Java, Shockwave, and RealPlayer are required for some activities; these applications are available for free download on the web;
- Computers for student use are located in the Mary F. Shipper Library, the Academic Success Center (Science Hall 116), and the Student Union. Times and access may be limited at these locations.

### B. Attendance

This is an online course, but students may attend an optional orientation session Tues. Jan 11 at 6:00 PM SCI 305, and two optional Observation Activities (see **Section G**).

### C. Homework

Each Unit has one required Homework assignment. The final homework point total (up to 300 pts) is divided by 3 to be out of 100 pts.

### D. Activities

There are two required activities for all students (see below). Each involves participating in an **online discussion** at the course website. The remainder of the activities will be chosen by the student from the lists below and must be completed by the dates indicated (further descriptions will be provided later). The final activity point total (up to 300 pts) is divided by 3 to be out of 100 pts.

#### Activities Part I

	Activity	Name	Points
Student Choice	#1.1	Planetary Configuration Simulator	20
Student Choice	#2.1	Making Waves	20
Student Choice	#2.2	Heating Up	20
Student Choice	#2.3	Telescopes	20
Student Choice	#2.4	Hubble Telescope	30
Student Choice	#2.5	Hubble Repair Mission	20
Student Choice	#3.1	Naked Eye Observing	20
<b>Required</b>	<b>#4.1</b>	<b>Video Discussion – Global Dimming</b>	<b>20</b>
<b>Required</b>	<b>#5.1</b>	<b>Video Discussion – Moon For Sale</b>	<b>20</b>
Student Choice	#5.2	Video Questions – Apollo 11	30
Student Choice	#5.3	Video Summary – Moon Landing Hoax Theories	50
<b>Completion Date</b>	<b>2/14/12</b>	<b>Total (must be at least 100 points)</b>	

#### Activities Part II

Student Choice	#7.1	Mars Landing Site Selection	30
Student Choice	#7.2	Mars Exploration Mission	20
Student Choice	#7.3	Video Questions – Nova: Is There Life on Mars?	30
Student Choice	#8.1	Video Questions – Jupiter the Giant Planet	30

Student Choice	#8.2	Video Questions – Saturn, Lord of the Rings	30
Student Choice	#9.1	Planets and Moons Quiz	20
Student Choice	#10.1	Solar System Collisions	20
Student Choice	#10.2	Hunting For Asteroids	20
<b>Completion Date</b>	<b>3/20/12</b>	<b>Part I &amp; II Total (must be at least 200 points)</b>	

### Activities Part III

Student Choice	#11.1	Video Questions – Secrets of the Sun	30
Student Choice	#12.1	Classifying Stars	50
Student Choice	#12.2	Herzsprung-Russell Diagram of Stars	40
Student Choice	#12.3	Herzsprung-Russell Diagram of Globular Cluster	40
Student Choice	#12.4	Light Curve for Eclipsing Binary Stars	20
Student Choice	#13.1	Build Your Own Solar System	30
Student Choice	#13.2	Finding Exo-Solar Planets	30
Student Choice	#14.1	Classifying Galaxies	40
Student Choice	#14.2	Galaxy Hunter: Types of Galaxies	30
Student Choice	#14.3	Stellar Redshift	40
Student Choice	#14.4	Video Questions – Back to the Beginning	30
Student Choice	#14.5	Video Questions – Monster of the Milky Way	30
<b>Completion Date</b>	<b>4/24/12</b>	<b>End Total (must be at least 300 points)</b>	

### E. Deadlines and Submitting Assignments

This course has 14 Units, one each week, each followed by a **deadline Tuesday at 6:00 PM** by which all assignments (homework and activities) for that Unit are due. **Assignments can be posted up to 2 days after the regular deadline, but 20% of the points will be deducted if late.**

#### Directions for submitting assignments and activities

- 1) Assignments must be submitted using eCampus according to the instructions.
- 2) Assignments submitted from other accounts will be rejected.
- 3) When sending an E-mail to your instructor, you **MUST** include “**ASTR 106**” in the memo line otherwise it will be considered junk mail and will be deleted.
- 4) Attach each assignment as a **Word** document.

### F. Exams

There will be a total of three (3) 100-point online tests (includes non-comprehensive final exam). You must take the exam within a 48 hour period between 12:01 AM on each date listed in the table (Thursdays) and 12:00 midnight Friday night. You will be given a time limit to complete each exam, so even though it is open book, if you do not know the material and have to look up all the answers, you will not be able to finish the exam, so you should study for it like you would a closed-book exam. Examinations will consist of a combination of True/False, multiple choice, and short answer/essay questions. No exams may be dropped. If you cannot take the exam within the allowed period, you must contact the instructor and request to take the exam in the Academic Success Center **within one week of the original exam date**, or you will receive a zero for the exam. You will receive a **zero** with no make-up for any test you miss unexcused.

### G. Observation Activities

On two evenings (weather permitting), students will be given the opportunity to participate in observation activities, which will last from about 7:00 PM until 9:00 PM. You should dress appropriately in warm clothes and come prepared with materials specified by the instructor. You will receive 30 activity points for each session based on participation. You may count these points

toward either the activity total, or substitute them for a missed homework assignment earlier in the semester.

## VII. METHOD OF EVALUATION

Exam 1	20% (100 pts)	Homework	20% (100 pts)
Exam 2	20% (100 pts)	Activities	20% (100 pts)
Exam 3	20% (100 pts)		

Letter grades will be assigned based on **total points**:

<b>A = 450 – 500 pts</b>	<b>C = 350 – 399 pts</b>	<b>F = less than 300 pts</b>
<b>B = 400 – 449 pts</b>	<b>D = 300 – 349 pts</b>	

**Academic Dishonesty:** The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. **Cheating on exams or improper collaboration on activities or homework will not be tolerated.** You may discuss the assignment with other students, but you are expected to prepare your answers by yourself. Any student caught cheating or copying significant sections/answers of assignments will receive a zero for that exam, homework, or activity. Further incidents will be submitted to the Student Judicial Officer and may result in **failing the course (unforgivable F)**. Please become familiar with the policy regarding academic dishonesty in the Student Conduct Code at <http://www.arc.wvu.edu/admissions/integrity.html>.

## VIII. HELP

If you have questions, contact your instructor by E-mail, or in person during office hours or make an appointment. Don't wait until the day of the test! Additionally, tutoring can be obtained from the Student Success Center (788-7405, SCI 116). Technical assistance can be obtained from Kathy Ludwick M-F 9:00 AM to 4:00 PM in AC 108. **If you begin to have difficulty in this course, GET HELP RIGHT AWAY!!**

## IX. SOCIAL JUSTICE AND DISABILITIES ACT STATEMENT

Potomac State College of WVU is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. In accordance with the Americans with Disabilities Act, Potomac State College programs and courses will be accessible to persons with disabilities. If you are a student with a disability and may require accommodations for this course or your academic program, please contact the Office of Disabilities Services at 788-6936.

## X. MISCELLENEOUS

### **Inclement Weather**

Weather-related college closings are announced by a recording on the campus switchboard (788-6800), on the college web site, by voice mail on the campus phone system, and on regional radio and TV stations. Students who drive to class are encouraged to consider safety first in making attendance decisions, and to notify the instructor if they judge conditions to be too unsafe to drive when classes have not been cancelled.

**Days of Special Concern:** WVU recognizes the diversity of its students and the needs of those who wish to be absent from class to participate in Days of Special Concern, which are listed in the Schedule of Courses. Students should notify their instructors by the end of the second week of classes or prior to the first Day of Special Concern, whichever is earlier, regarding Day of Special Concern observances that will affect their attendance. Further, students must abide by the attendance policy of their instructors as stated on their syllabi.

Faculty will make reasonable accommodation for tests or field trips that a student misses as a result of observing a Day of Special Concern.

JKB 1/09/12