Astronomy 1: Astronomical Universe

The development of modern understanding of the astronomical universe from planets and stars to galaxies and cosmology.

http://www.psu.edu/bulletins/bluebook/courses/astro/001.htm

Syllabus and Exam Policy

Instructor: Dr. Michael R. Gallis
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Office Hours:
MWF 10 - 11
R 10 - 12
or by appt.

TEXT: Astronomy: Journey to the Cosmic Frontier
6th edition by John D. Fix
ISBN 978-0-07-351218-1

Course Objective:
The objective of this course is to familiarize the student with astronomical concepts and objects. The course will also provide the student with a historical perspective of the development of astronomy as a science, and an introduction to general scientific principles (such as the Scientific Method). Although observation is an integral part of Astronomy, there is no formal laboratory associated with this course (students may elect to take Astro 11 for a laboratory experience). The student is encouraged to participate (on a voluntary basis) in any or all of the Astronomy Nights which will be offered on campus at various times during the semester. Since this is a science course oriented for non-science majors, only a minimum of mathematics will be used in the lectures (limited to simple algebra and geometry). A tentative schedule of topics is given below. Some topics will be covered in more detail than others. The Student should note that we will cover approximately one and one-half chapters a week, and that it is imperative that the student keep up with the reading.

Grading Policy:
The grade will be based on 3 midterm exams worth 100 points each, and a comprehensive final worth 200 points, and a 50 point quiz/class participation grade. The exams will be announced at least a week ahead of time, and the final will be held at the scheduled period during finals week. An estimate of the grade cutoffs to be used is: 85% for an A, 70% for a B, etc. with the cutoffs for plus and minus grades are generally determined by dividing the coarse ranges into thirds (i.e. 90% for A, 85% for A-, 80% B+ etc).
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The Penn State Principles:

- I will respect the dignity of all individuals within the Penn State community
- I will practice academic integrity.
- I will demonstrate social and personal responsibility.
- I will be responsible for my own academic progress and agree to comply with all University policies.

Astro 1 provides an excellent opportunity to live the Penn State Principles to maximize your educational experience as you work in a collaborative learning environment.

Academic Integrity

Students are expected to maintain the highest level of academic integrity, and maintain professional standards of conduct. The University's academic policy statement can be found at http://www.psu.edu/ufs/policies/47-00.html#49-20 and the University's Code of Conduct can be found at http://www.sa.psu.edu/ja/conduct.shtml.

Disability Services

Students with disabilities, whether physical, learning, or psychological, who believe that they may need academic adjustments in this class, are encouraged to contact Disability Services as soon as possible to ensure that such adjustments are implemented in a timely fashion. Please schedule an appointment to meet with the Disability Services Liaison, Mindy Anthony Spolski, (570-385-6127 or mma149@psu.edu), to verify your eligibility for any classroom adjustments and for academic assistance related to your disability. The Office of Disability Services is located in office 210A Health and Wellness Building.

Classroom Policy:

Students are expected to uphold their share of responsibility for maintaining an appropriate learning environment. Students are expected to attend and participate in every class. Students are to arrive before the beginning of class so that class may begin at the scheduled time, and are not to disrupt the class by packing their books before the instructor has ended the class. Cellphones and all other electronic devices are to be turned off during class. Students who are persistently disruptive in class will be asked to leave the class, and may face disciplinary actions. Any student who is asked to leave the class because of disruptive behavior will receive a 0 for any graded activity for that day.
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Course Outline

1. Journey's Start
2. Patterns in the Sky
3. Ancient Astronomy
4. Renaissance Astronomy
5. Gravity and Motion
6. Light and Telescopes
7. Processes at Work in the Solar System

Exam I

8. The Earth
9. The Moon
10. Mercury and Venus
11. Mars
12. Jupiter and Saturn
13. The Outer Solar System
14. Satellites
15. Small Solar System Bodies

Exam II

16. Basic Properties of Stars
17. The Sun
18. The Formation of Stars and Planets
19. The Evolution of Stars
20. White Dwarfs, Neutron Stars, and Black Holes
21. Binary Star Systems

Exam III

22. The Milky Way
23. Galaxies
24. Quasars and Other Active Galaxies
25. Galaxy Clusters and the Structure of the Universe
26. Cosmology
27. Life in the Universe

Final