SYLLABUS FOR PH/AST 107 SPRING, 2000
ALL PHYSICS LABS BEGIN TUESDAY, JANUARY 18

Instructor: Dr. Carol L. Strong
Office: Optics Building, Rm 238
Office hours: MWF 1:15-2:15am
TTh 1:15-2:15pm, or by appointment
Phone: 890-6276 *238 (Do not call me at home!)
Class hours: MWF 9:05-10:00am

Grader/TA's:
Office: Optics Building, Rm 204, office hours posted on door
Phone: 895-6276 * 204

Text: "Universe", 5th edition
William J. Kaufmann, III, W.H. Freeman and Company, NY

"Exploring the Cosmos I and II", is designed to give you an overall look at the history of astronomy, the techniques and equipment used to make astronomical observations, the life cycle of stars, the theories of the evolution of our solar system and galaxy, and the theories of the universe. Part I of this course covered chapters 1-8 and 17-24, which include the basics of our view of the sky, telescopes, the nature of light, our solar system, and the life cycle of stars all the way to black holes. Part II will cover an introduction to galaxies, galactic evolution, and cosmology plus a survey of the planets and satellites of our solar system. Success in the course relies heavily on the knowledge gained in PH106 of basic astronomical observing, solar system evolution, and the birth, life and death of stars.

These courses are meant primarily for non-science majors, though they are also the introductory courses for physics students with an astrophysics interest. Students will be expected to perform only basic algebraic and mathematical calculations to support various theories; no high level mathematics is required. While learning about the solar system and the stars, you will learn physical relationships between quantities such as temperature, pressure, brightness, distance, speed, angle, etc. You will also learn to interpret data to make informed decisions about astronomical theories, particularly in the laboratory exercises, which accompany the lecture.

The laboratory exercises will include a simple observing project, which will be due later in the semester. Other than that project, there are few observational requirements for this course. However, the graduate students teaching the laboratory and I are available to conduct viewing exercises as required. There are small telescopes in the astronomy laboratory that you may check out from the lab instructor or from me. If you know of an upcoming astronomical event or would just like the opportunity to look through a scope at whatever might be visible, please make your request known and we'll schedule a viewing. If you wish to be notified of any last-minute observing activities, send me an email message so that I may add you to my viewing list. Also, the Von Braun Astronomical Society has an observatory and planetarium on Monte Sano Mountain, which is open quite often to the public for planetarium shows and general observing. Visit their web site at www.vbas.org for more information.

Feb 23, 25	Chp 9: Our Barren Moon Questions 2, 3, 5, 8, 9, 12, 14, 15, 17, 18	Mar 1
Feb 28/Mar 1, 3	Chp 9 continued and Chp 10: Sun-Scorched Mercury Questions 2, 5-8, 10, 11, 15-17	Mar 6
Mar 6, 8	Chp 11: Cloud-Covered Venus Questions 2, 4-6, 8, 9, 11, 14, 15, 18	Mar 15

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Mar 10 Test #2: Chapters 28, 29, 9, 10 and oral reports

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Mar 13, 15, 17	Chp 11 continued and Chp 12: The Martian Invasions Questions 2, 4-6, 9, 11, 13, 16, 21, 24	Mar 20
Mar 20, 22	Chp 13: Jupiter: Lord of the Planets Questions 3-6, 9, 11-13, 16, 19	Mar 24
Mar 24	Chp 14: The Galilean Satellites Questions 2, 4, 6, 8, 12-15, 22, 25	Apr 10
Mar 27-31	**SPRING BREAK**	
Apr 3, 5	Chp 14 continued	

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Apr 7 Test #3: Chapters 11, 12, 13

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Apr 10, 12	Chp 15: Saturnian System Questions 2, 3, 6, 8, 9, 11, 12, 15, 17, 23	Apr 17
Apr 14	**NO CLASS TODAY**	
Apr 17, 19	Chp 16: The Outer Worlds Questions 2, 4, 5, 8, 9, 12, 13, 18, 20, 24	Not graded
Apr 21	**COMPREHENSIVE REVIEW**	

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FINAL EXAM: Thursday, April 27, 8:00-10:30 am
Comprehensive, emphasis on last three chapters

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LABORATORY: The laboratory will be taught by a graduate student. The grade will be averaged with your class grade as shown above. Many students do well enough in the lab to raise their overall class grade. ATTENDANCE IS MANDATORY TO PERFORM THE EXPERIMENTS; LAB REPORTS BASED ON EXPERIMENTS THAT YOU DID NOT PERFORM WILL NOT BE ACCEPTED.

ORAL REPORTS: Each student will present one **five-minute oral report** to the class on a **cosmology-related** article from a periodical or journal such as Sky and Telescope, Astronomy, Scientific American, Discover, etc. Each student **must submit one multiple choice test question** based on the article and a **photocopy of the article. Attendance of all students is required during these reports!** The computer card catalog in the library can give you a listing of articles if you type in the key words "cosmology", "dark matter", "black hole", etc. under periodical listings. Note: A highly technical article is NOT required! This is designed to prove to you that you know enough to understand most articles written for the layman.

ASSIGNMENT SCHEDULE:

Class date	**Chapter**	**Due Date**
Jan 10, 12	Chp 25: Our Galaxy Questions 1, 4, 5, 7, 8, 10, 13, 15, 22, 23	Jan 19
Jan 14	Chp 25 continued and Chp 26: Galaxies Questions 2, 3, 4, 6, 8, 9, 12, 14, 16, 18	Jan 24
Jan 17	**HOLIDAY**	
Jan 19, 21	Chp 26 continued	
Jan 24, 26	Chp 27: Quasars, ... Questions 2, 3, 5, 6, 8, 9, 11, 13, 17, 23	Jan 31
Jan 28,31/Feb 2	Chp 27 continued and Chp 28: Cosmology Questions 1, 3, 4, 5, 6, 8, 10, 12, 14, 16 (p.701)	Feb 7
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Feb 4	Test #1: Chapters 25, 26, 27	
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Fe7, 9	Chp 29: Exploring the Early Universe Questions 1, 2, 5, 7, 8, 10-14	Feb 14
Feb 11-21	Chp 29 continued and **ORAL REPORTS**	

GRADING: Course grade will be computed as follows:

Homework	10%
Test #1	15%
Test #2	15%
Test #3	15%
Oral Report	10%
Laboratory	20%
Final	15%
Quizzes	Top two quiz grades will be used as extra credit.

Letter grades will be assigned as follows:

90 – 100	A
80 - <90	B
70 - <80	C
65 - <70	D
below 65	F

Note the inequalities! I do not round up.

HOMEWORK: Homework assignment due dates are listed below with assignments due at the beginning of class, folded, stapled, with your full name written legibly on the outside. Many homework problems are based on information contained in the "boxes" within the chapters. Late homework may be submitted TO ME with a penalty of 25% per day late; written excuses required from an appropriate authority for no penalty.

RETURNS: Homework assignments will be returned in class within 2 class periods. All homework will be available before an exam. If you are absent when assignments are returned, you can retrieve them from a box marked "PH/AST" outside my office. Exams will be returned in class within 2 class periods or can be picked up from me during office hours after the second class period; I do not leave exams in the box outside my office.

SOLUTIONS: After the due date, solutions to the homework assignments will be available for check out from the reserve section (main desk) of the Library for one hour or from me DURING OFFICE HOURS. I also post the solutions outside my office door. You must have a library card to check anything out from the library and "venda-cards" to make copies. The solutions are good study aids as I often supply more information than necessary to answer the question. This is my way of "going over the homework".

EXAMS: My exams reflect the homework, examples that I work in class and discussions in lecture and in your book. Exam grades may be scaled to give a class average of 75%, though this is normally not necessary. I supply a study sheet before my exams to guide your study; if you ignore the study sheet, don't come to class and/or don't do homework, you will find it difficult to pass the exams! **No early exams. Notification of absence for an exam must be made within 24 hours of exam time.** There is an answering machine on my office phone for this purpose. Makeup exams, which may be **oral or more difficult,** will only be given for absences **with a written excuse from the dean.**