

**PHYS 1401: Introduction to Astronomy**  
**Course Syllabus for Fall 2006, TR 8:00-9:25 am**

Instructor: Dr. Wayne Keith (793-3874, [keith.wayne@mcm.edu](mailto:keith.wayne@mcm.edu))  
Office Hours: S 110-C - MW 9-11, TR 9:30-11, W 1:30-2:30, and F 9-10  
Web: <http://www.mcm.edu/~keith.wayne>  
Text: *Foundations of Astronomy (9<sup>th</sup>)*, by Michael A. Seeds  
Required: scientific calculator, paper, pen/pencil

**Course Description:** This course is intended to introduce the student to observational astronomy. Specifically, we'll study telescopes, light, the night sky, stars, galaxies, and the universe as a whole. Most of the topics studied in the class will be conceptual, but math will be used in the class. Although it is assumed that the student knows math through the high school algebra level, problems requiring more than knowledge of the basic operations (addition, subtraction, multiplication, and division) will be reviewed in class. This course requires concurrent enrollment in one of three astronomy lab sections.

**Course Goals:** Introduce students to the scientific method and describe how to use it to solve problems. Significantly increase factual knowledge about select topics in astronomy.

**Grading: 15%** Daily grades: Class participation, attendance, short quizzes (up to one per class session). Four lowest daily grades **WILL BE DROPPED** prior to computing overall grade.

**15%** Homework: Assignments will be made in class and posted online. Homework will be due at 8 am on the date indicated.

**25%** Laboratory: See separate lab syllabus for details.

**30%** exams (15% each): In-class exams.

**15%** Final exam: Comprehensive, but concentrating on the final third of the course.

Formula:  $\text{Grade} = (\text{daily avg.} \times 0.15) + (\text{hw avg.} \times 0.15) + (\text{lab avg.} \times 0.25) + (\text{test1} \times 0.15) + (\text{test2} \times 0.15) + (\text{final} \times 0.15)$

**Attendance/Make up policy:** No make up quizzes will be given for any reason, since four daily grades will be dropped. See instructor to request extra credit assignments to replace missed quizzes, however, there is no guarantee any extra credit will be available. Make-up exams will be given for excused absences only at the discretion of the instructor. Contacting the instructor via email or phone prior to missing class for any reason is strongly encouraged, even if it is for a school sponsored event.

**Classroom Rules:** Students are expected to be present and on time for all class meetings. Excessive absences (more than 4 unexcused) may result in the student being dropped from the course. The instructor will answer all ringing cell phones. Late homework loses 10 points per day (not per class period).

**Final notes:** Class discussion is strongly encouraged; please feel free to ask questions, during class or outside of class, about anything that is not clear. Properly preparing for class by reading the notes and textbook will help you, especially with the in-class quizzes. Students are encouraged to bring astronomy related current events to class for discussion (this will contribute to the participation portion of your daily grade).

## PHYS 1401 Fall 2006 Course Schedule

All dates are tentative and subject to change except **bold** dates.

<b>Date</b>	<b>Lecture #</b>	<b>Tentative Topic</b>	<b>Laboratory</b>
8/29	1	Introduction and Overview	<b>No Lab</b>
8/31	2	Ch 1. The Scale of the Cosmos	
9/5	3	Ch 2. The Sky	1. Celestial Sphere
9/7	4	Ch 4. Ancient and Medieval Astronomy	
9/12	5	Ch 4. Renaissance and Modern Astronomy	2. Earth & Sky
9/14	6	Ch 5. Galileo, Kepler and Newton	
9/19	7	Ch 5. Relativity	3. Refraction & Reflection
9/21	8	Ch 6. The Basics of Telescopes	
9/26	9	Ch 6. Advanced Telescopes	4. Telescope Observing (special time/place)
9/28	10	Ch 7. Starlight	
10/3	11	Ch 7. Spectroscopy	5. Simple Lens
<b>10/5</b>		<b>Test 1</b>	
10/10	12	Ch 8. The Sun	<b>No Lab</b>
10/12	13	Ch 8. Solar Interior	
10/17	14	Ch 9. Characteristics of the Stars	6. VAL 11 Spectra and HR Diagram
10/19	15	Ch 10. The Interstellar Medium	
10/24	16	Ch 11. The Formation of Stars	7. VAL 12 Binary Stars
10/26	17	Ch 12. Stellar Evolution	
10/31	18	Ch 13. The Deaths of Small Stars	8. Intensity of Light
11/2	19	Ch 13. Supernovae and the Deaths of Large Stars	
11/7	20	Ch 14. Neutron Stars and Black Holes	9. VAL 14 Neutron Stars and Pulsars
<b>11/9</b>		<b>Test 2</b>	
11/14	21	Ch 15. The Milky Way Galaxy	10. VAL 16 Astronomical Distance Scales
11/16	22	Ch 15. Formation and Evolution of the Milky Way	
11/21	23	Ch 16. Properties of Galaxies	<b>No Lab</b>
<b>11/23</b>		<b>Thanksgiving break</b>	
11/28	24	Ch 16. Galactic Evolution	11. VAL 17 Evidence for Dark Matter
11/30	25	Ch 17. Active Galaxies and Quasars	
12/5	26	Ch 18. The Universe	Makeup Week
12/7	27	Ch 18. Cosmology	
<b>12/12</b>		<b>Finals week – no class</b>	<b>No Lab</b>
<b>12/14</b>		<b>Final Exam – Test 3 (Thursday at 8:00am)</b>	