

**PHYS 1401: Astronomy**  
**Course Syllabus for Spring 2010, TR 1:00-2:25 pm**

Instructor: Dr. Wayne Keith: 793-3874, [keith.wayne@mcm.edu](mailto:keith.wayne@mcm.edu)  
Office Hours: S 110-C: MWF 1-2, R 11-12 and 2:30-5:30, and F 10-12 and 1-2  
Web: <http://www.mcm.edu/~keith.wayne>  
Text: *Horizons: Exploring the Universe (11<sup>th</sup>)*, by M. 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 planets. 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 the astronomy lab.

**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: 10%** Daily grades: Class participation, attendance, short quizzes (up to one per class session) and other in-class activities. Four lowest daily grades WILL BE DROPPED prior to computing overall grade.

**10%** Homework: Assignments will be made in class and posted online. Homework will be due at the beginning of class on the date indicated.

**20%** Laboratory: See separate lab syllabus for details.

**45%** exams (15% each): Three in-class exams.

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

**Attendance/Make up policy:** Attendance is required. No make-ups for in-class activities will be given for any reason, since four daily grades will be dropped. 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 unexcused absences (more than 3 consecutive) may result in the student being dropped from the course. Ringing cell phones and other disruptions during class may result in a loss of daily grade points or other penalties. Late homework loses 5% per class period.

**ADA Policy:** If you have a documented disability that may impact your performance in this class and for which you may require accommodations, you must be registered with and provide documentation of your disability to the Disability Services Office, Old Main 102, 793-4880.

**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 textbook and keeping up with the homework is the most important factor in doing well in this course. 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 Spring 2010 Course Schedule

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

<b>Date</b>	<b>Lecture #</b>	<b>Tentative Topic</b>	<b>Laboratory</b>
1/12	1	Introduction and Overview	<b>No Lab</b>
1/14	2	Ch 1 Here and Now	
1/19	3	Ch 2 The Sky	1. Scale of Solar System
1/21	4	Ch 3 Cycles of the Sky	
1/26	5	Ch 4 History of Astronomy	2. Celestial Sphere
1/28	6	Ch 4 Galileo, Kepler and Newton	
2/2	7	Ch 5 The Basics of Telescopes	3. Refraction & Reflection
2/4	8	Ch 5 Advanced Telescopes	
<b>2/9</b>		<b>Test 1</b>	4. Simple Lens
2/11	9	Ch 6 Starlight & Spectroscopy	
2/16	10	Ch 7 The Sun	5. Wavelength of Light
2/18	11	Ch 8 The Family of Stars	
2/23	12	Ch 9 Formation and Structure of Stars	6. CLEA – HR Diagram
2/25	13	Ch 10 The Deaths of Sun-Like Stars	
3/2	14	Ch 10 Novae and Supernovae	7. CLEA – Dying Stars
<b>3/4</b>	15	Ch 11 Neutron Stars and Black Holes	
3/9	16	Ch 12 The Milky Way Galaxy	8. Intensity of Light
3/11		<b>Test 2</b>	
<b>3/16</b>		<b>Spring Break</b>	<b>No Lab</b>
<b>3/18</b>		<b>Spring Break</b>	
3/23	17	Ch 13 Galaxies	9. CLEA – Hubble Redshift
3/25	18	Ch 14 Galaxies with Active Nuclei	
3/30	19	Ch 15 Cosmology	10. CLEA – Mercury Rotation
4/1	20	Ch 16 Origin of the Solar System	
4/6	21	Ch 17 The Earth and Moon	11. CLEA – Astrometry
4/8	22	Ch 17 Mercury, Venus, and Mars	
4/13		<b>Test 3</b>	12. CLEA – Jupiter's Moons and the Speed of Light
4/15	23	Ch 18 Jupiter and Saturn	
4/20	24	Ch 19 Uranus, Neptune, and Dwarf Planets	13. Telescope Observing (special time/place)
4/22	25	Ch 19 Meteorites, Asteroids, and Comets	
4/27	26	Ch 20 Life in the Universe	Make-up Week
4/29	27	Final Review	
<b>5/4</b>		<b>Final Exam – (10:30 am to 12:30 pm)</b>	<b>No Lab</b>
<b>5/6</b>		<b>Finals Week – No Class</b>	