PHYS 1401: Astronomy
Course Syllabus for Spring 2020, TR 1:00-2:25 pm

Instructor: Dr. Wayne Keith: 793-3874, keith.wayne@mcm.edu
Office Hours: S 110-C: MTWRF 9-11, and MWF 1-2:30
Web: http://www.mcm.edu/~keith.wayne
Text: *Horizons: Exploring the Universe (14th)*, by M. Seeds
Required: tablet PC, 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, Moodle quizzes based on the reading (due before class period).
20% Homework: Assignments will be made in class and posted online. Homework will be due at the beginning of class on the date indicated.
25% Laboratory: See separate lab syllabus for details.
30% exams (10% each): Three in-class exams.
15% Final exam: Comprehensive, but concentrating on the final quarter of the course.

Early Grades: You will receive a during-term grade for this course by the 5th week of classes and after midterm. You can access your grades though Moodle or MyMcM. If your during-term grade is below a C-, you will receive a message from the Mindset for Success Office regarding your academic underperformance in this course. This email will contain information about several resources that can help you.

Attendance/Make up policy: Attendance is required. 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. Computers should be used for lab-related purposes only. Curves on exams will be given ONLY to students who have completed the homework for the tested chapters.

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, President Hall, 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 text and keeping up with the quizzes and homework are the most important factors in doing well in this course. Students are encouraged to bring astronomy related current events to class for discussion.

PHYS 1401 Course Schedule

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

Date	Lecture #	Tentative Topic	Homework
1/14	1	Introduction and Scientific Method	1. Ch1: RQ 2,5 P 2,7 LL 3 Ch2: RQ 6,15,16 P 1,5
1/16	2	Ch 1 Here and Now	
1/21	3	Ch 2 The Sky	
1/23	4	Ch 3 Cycles of the Sky	2. Ch3: RQ 4,12 P 1,6 LL 1 Ch4: RQ 8,15 DQ 3 P 4,9
1/28	5	Ch 4 History of Astronomy	
1/30	6	Ch 4 Galileo, Kepler and Newton	
2/4	7	Ch 5 The Basics of Telescopes	3. Ch5: RQ 1,6,8,9 DQ 1 P 2,4,5 LL 1,3
2/6	8	Ch 5 Advanced Telescopes	
2/11		**Test 1**	
2/13	9	Ch 6 Starlight & Spectroscopy	4. Ch6: RQ 2,8 P 1,7 LL 2 Ch7: RQ 1,12 DQ 2 P 5,8
2/18	10	Ch 7 The Sun	
2/20	11	Ch 8 The Family of Stars	5. Ch8: RQ 1,10,18 P 2,6,11 Ch9: RQ 2,17 P 8,16
2/25	12	Ch 9 Formation and Structure of Stars	
2/27	13	Ch 10 The Deaths of Sun-Like Stars	6. Ch10: RQ 3,6,10,15 P 1,5 Ch11: RQ 4,14 P 8 LL 2
3/3	14	Ch 10 Novae and Supernovae	
3/5	15	Ch 11 Neutron Stars and Black Holes	
3/10		**Spring Break – NO CLASS**	
3/12		**Spring Break – NO CLASS**	
3/17	16	Test 2 Review	7. Ch12: RQ 2,3 P 8 Ch13:RQ 6,9 P 4,9 Ch14: RQ 4,11 P 2
3/19		**Test 2**	
3/24	17	Ch 12 The Milky Way Galaxy	
3/26	18	Ch 13 Normal Galaxies	
3/31	19	Ch 13 Active Galaxies and Quasars	
4/2	20	Ch 14 Cosmology	
4/7	21	Ch 15 Origin of the Solar System	8. Ch15: RQ 2,6,19 P 4 LL 2 Ch16: RQ 13 P 3 Ch17: RQ 4,9 LL 2
4/9	22	Ch 16 The Earth and Moon	
4/14	23	Ch 17 Mercury, Venus, and Mars	
4/16		**Test 3**	
4/21	24	Ch 18 The Outer Solar System	9. Ch18: RQ 5,12,14 P 9 Ch19: RQ 4,12 P 1 Ch20: RQ 7,11 LL 2
4/23	25	Ch 19 Meteorites, Asteroids, and Comets	
4/28	26	Ch 20 Astrobiology	
4/30	27	Final Review	
5/5		**Finals Week – No Class**	
5/7		**Final Exam – (10:30 am to 12:30 pm)**	