ASTROPHYSICS

Physics 44802

SPRING 2012

INSTRUCTOR:

Dr. Mark Manley
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CLASS HOURS: 9:55 - 10:45 T R F, 204 Smith Hall

OFFICE HOURS: 11:30 - 12:20 MTWR
(or by appointment)

TEXT: *Foundations of Astrophysics*, by Barbara Ryden and Bradley M. Peterson (Pearson, 2010).

GRADE DETERMINATION:

Homework	20%
Exam 1	25%
Exam 2	25%
Final Exam	30%

HOMEWORK: Problems will be assigned in class. Homework assignments *must* be handed in on time.

EXAMS: Each of the two midterm exams will cover only those chapters of the text that were covered in class since the previous exam. The final exam will be comprehensive.

COVERAGE: As indicated on the tentative course outline.

MAKEUP CLASSES: I anticipate being away occasionally because of research commitments. Make-up classes will be scheduled as needed.

CHEATING AND PLAGIARISM:

University policy 3342-3-01.8 deals with the problem of academic dishonesty, cheating, and plagiarism. None of these will be tolerated in this class. The sanctions provided in this policy will be used to deal with any violations. If you have any questions, please read the policy at http://www.kent.edu/policy-reg/chap3/3-01-8.cfm and/or ask.

STUDENTS WITH DISABILITIES:

University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessability Services (contact 330-672-3391 or visit www.kent.edu/sas for more information on registration procedures).

REGISTRATION REQUIREMENT:

University policy requires all students to be officially registered in each class they are attending. Students who are not officially registered for a course by published deadlines should not be attending classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her class schedule (using Student Tools in FlashFast) prior to the deadline indicated. Registration errors must be corrected prior to the deadline.

TENTATIVE COURSE OUTLINE:

Week	Date	Day	Tentative Schedule
1	Jan 10	T	Ch. 3—Introduction
	Jan 12	R	Ch. 3—Planetary Orbits
	Jan 13	F	Ch. 3—Deriving Kepler's Laws
2	Jan 17	T	Ch. 8—Overview of the Solar System
	Jan 19	R	Ch. 8—Physical Properties of the Planets
	Jan 20	F	Ch. 8—Planetary Temperatures
3	Jan 24	T	Ch. 8—Planetary Atmospheres
	Jan 26	R	Ch. 4—Tidal Forces
	Jan 27	F	Ch. 4—The Roche Limit
4	Jan 31	T	Ch. 8—Formation of the Solar System
	Feb 2	R	Ch. 8—Condensation Sequence
	Feb 3	F	Ch. 11—Asteroids
5	Feb 7	T	Exam 1
	Feb 9	R	Ch. 19—Radial Velocities of Stars (Doppler Shifts)
	Feb 10	F	Ch. 5—Blackbody Radiation
6	Feb 14	T	Ch. 5—Stefan-Boltzmann Law
	Feb 16	R	Ch. 5—Wien's Law
	Feb 17	F	Ch. 5—Emission and Absorption Spectra
7	Feb 21	T	Ch. 5—Line Broadening
	Feb 23	R	Ch. 7—The Sun
	Feb 24	F	Ch. 7—Layers of the Sun
8	Feb 28	T	Ch. 7—The Solar Spectrum
	Mar 1	R	Ch. 7—Limb Darkening and Opacity
	Mar 2	F	Ch. 7—Sunspots

Week	Date	Day	Tentative Schedule
9	Mar 6	T	Ch. 2—Stellar Distances (Parallax)
	Mar 8	R	Ch. 13—Stellar Magnitudes
	Mar 9	F	Ch. 13—Stellar Masses (Binary Stars)
10	Mar 13	T	Ch. 13—Mass-Luminosity Relationship
	Mar 15	R	Ch. 13—Stellar Radii (Spectroscopic Binaries)
	Mar 16	F	Exam 2
11	Mar 20	T	Spring Recess–No Classes
	Mar 22	R	Spring Recess–No Classes
	Mar 23	F	Spring Recess–No Classes
12	Mar 27	T	Ch. 13—The Mass-Radius Relationship
	Mar 29	R	Ch. 13—Stellar Densities
	Mar 30	F	Ch. 14—Hertzsprung-Russell Diagrams
13	Apr 3	T	Ch. 14—Main-Sequence Stars
	Apr 5	R	Ch. 14—Stellar Luminosity Classes
	Apr 6	F	Ch. 14—Stellar Evolution
14	Apr 10	T	Ch. 15—Equations of Stellar Structure
	Apr 12	R	Ch. 15—Simple Models of Stellar Structure
	Apr 13	F	Ch. 15—Stellar Lifetimes
15	Apr 17	T	Ch. 18—White Dwarfs
	Apr 19	R	Ch. 18—Neutron Stars and Pulsars
	Apr 20	F	Ch. 18—Black Holes
16	Apr 24	T	Ch. 17—Cepheid Variables (Period-Luminosity Relationship)
	Apr 26	R	Ch. 20—Galaxies
	Apr 27	F	Ch. 20—Hubble's Law and Classical Cosmology
	May 4	F	Final Exam (7:15 a.m. – 9:30 a.m.)