

Astr 301/Phy 301 – Modern Astrophysics I
Fall 2012

MWF 1:10–2:00 pm, LL 511

Th 12:10–1:00 pm, LL 511

Instructor:

Prof. Ginny McSwain
Office: LL 405
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office hours: drop in or by appointment

Course Objectives:

To describe and quantify the internal structure, radiation, and evolution of stars using a combination of astrophysical data and theoretical physics.

Required Textbook:

Carroll & Ostlie, “An Introduction to Modern Astrophysics”, 2nd edition.

An alternative to this book is the condensed version: Ostlie & Carroll, “An Introduction to Modern Stellar Astrophysics” (use only if you don’t plan on taking Astr 302/Phy 302).

In addition to the textbook, you will also need a scientific calculator with trigonometric and logarithmic functions and access to a computer.

Grading:

Homework – 20%
Hour Exam 1 – 20%
Hour Exam 2 – 20%
Group Project – 20%
Final Exam – 20%

Attendance is strongly recommended but not required. Late homework will be penalized by 5% per day late, and makeup exams are not allowed, without a valid excuse. It is the student’s responsibility to have any excuse validated by the Dean of Students office to avoid penalties. If you have a valid excuse, the professor will set a reasonable deadline to complete the work.

Academic Integrity:

Copying work from other students or outside sources is considered plagiarism, and it will not be tolerated. All work must be the individual's own work, except on the group project, where members may work together. All members of the group will be responsible for the quality and integrity of the project. Outside references (other than the class textbook) must be properly cited if used on any assignment. Any student found to have engaged in academic misconduct on a graded assignment or exam may be assigned a zero for that assignment, assigned an F in the course, and/or reported to the Dean of Students.

Accommodations for Students With Disabilities:

If you have a disability for which you are or may be requesting accommodations, please contact both the professor and the Office of Academic Support Services, University Center room C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

Tentative Schedule:

Week of Aug. 27:	Professor traveling; no class Aug. 27–Sept. 3
Week of Sept. 3:	No class Sept. 3; Measuring positions and brightness (§1.3, 3.1–3.2)
Week of Sept. 10:	Light and matter (§3.2–3.6, 5.1–5.4)
Week of Sept. 17:	Light and matter cont.
Week of Sept. 24:	Binary Stars (§2.1–2.3, 7.1–7.4)
Week of Oct. 1:	Stellar spectroscopy (§8.1–8.2); Exam 1 Oct. 5
Week of Oct. 8:	Pacing break Oct. 8; Stellar atmospheres (§9.1–9.5)
Week of Oct. 15:	Stellar atmospheres cont., Stellar interiors (§10.1–10.6)
Week of Oct. 22:	Stellar interiors cont., the Sun (§11.1–11.3)
Week of Oct. 29:	Sun cont., star formation (§12.1–12.3)
Week of Nov. 5:	Stellar evolution (§13.1); Exam 2 Nov. 9
Week of Nov. 12:	Stellar evolution cont. (§13.2–13.3, 15.1), Pulsating stars (§14.1)
Week of Nov. 19:	Supernovae (§15.2–15.3); Thanksgiving break Nov. 23–25
Week of Nov. 26:	White dwarfs, neutron stars, and black holes (§16.1–16.7)
Week of Dec. 3:	Interacting binary stars (§18.1–18.6); Group projects due Dec. 7
Date TBA	Final Exam

This syllabus is only a tentative outline of the course. The grading policy, dates of exams, or the topics covered in class may change as needed.