

PHYSICS 160: Stellar Structure and Evolution

Instructor: Art Wolfe

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Office Hours: Fri. after 10:30 A. M., or by appointment

Main Text: Carroll & Ostlie *Modern Astrophysics*

Reserve Texts:

Shu *The Physical Universe*

Clayton *Principles of Stellar Evolution and Nucleosynthesis*

Course Room: Peterson 104

Lecture Time: Tues. and Thurs. 9:30 A.M. to 10:50 A. M.

Review Session Time: Thurs. 5:00 P.M. to 5:50 P. M.

Course Requirements:

(1) Graded Homework Assignments: 50 % of final grade
Students are encouraged to discuss assignments with each other. However, homework assignments must be done independently.

(2) Term paper (and optional talk): 50 % of final grade

TOPICS

The course will roughly follow chapters 7 through 15 of Carroll and Ostlie. However, I will emphasize some topics more than others, and in many cases treat problems in a different manner than in his book.

- Overview: Introduction to the Universe and preliminaries
- Stellar Spectra and the Hertzsprung-Russel Diagram
- Radiative Transfer
- Stellar Interiors
- The Sun
- Main Sequence and Post Main Sequence Evolution
- Element Synthesis in Stars
- Endpoints of Stellar Evolution