

ASTP - Astrophysics

ASTROPHYSICS Courses

ASTP 313. Elements of Astrophysics. 3 Credits.

A one-semester course covering the important topics of modern astrophysics. The elementary physical basis of stellar structure and evolution is derived from first principles. Theoretical and observational details of white dwarfs, neutron stars, pulsars, and black holes are developed. Elements of Big Bang cosmology are also presented. Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N.

ASTP 414. Relativity and Cosmology. 3 Credits.

Introduction to special and general relativity and cosmology. The course covers the current understanding of the structure and evolution of the Universe. The most important unsolved cosmological problems will be discussed, as well as current efforts/theories that may lead to the solution. Special and general relativity, Einstein's field equations, Friedmann-Lemaitre-Robertson-Walker metric, Friedmann's equations, Schwarzschild solution and black holes, Big Bang, cosmic microwave background radiation, dark matter and dark energy are covered. Prerequisites: PHYS 232N or PHYS 227N or PHYS 262N and MATH 312 or MATH 307.

ASTP 495. Special Topics in Astrophysics. 3 Credits.

In-depth study of a selected topic in astrophysics at the advanced undergraduate level. May include a laboratory or computational component. Prerequisites: Permission of the instructor.