

Astronomy (ASTRON)

ASTRON 3 Introduction to Modern Cosmology 2 Units

Department: Astronomy

Course level: Undergraduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: 2 hours of Lecture per week for 15 weeks.

Description of research and results in modern extragalactic astronomy and cosmology. We read the stories of discoveries of the principles of our Universe. Simple algebra is used.

Instructors: Bloom, Davis, Ma

ASTRON 7A Introduction to Astrophysics 4 Units

Department: Astronomy

Course level: Undergraduate

Term course may be offered: Fall

Grading: Letter grade.

Hours and format: 3 hours of Lecture and 1 hour of Laboratory per week for 15 weeks.

Prerequisites: Physics 7A-7B (7B can be concurrent), or consent of the instructor.

This is the first part of an overview of astrophysics, with an emphasis on the way in which physics is applied to astronomy. This course deals with the solar system and stars, while 7B covers galaxies and cosmology.

Solar system topics include orbital mechanics, geology of terrestrial planets, planetary atmospheres, and the formation of the solar system.

The study of stars will treat determination of observations, properties and stellar structure, and evolution. The physics in this course includes mechanics and gravitation; kinetic theory of gases; properties of radiation and radiative energy transport; quantum mechanics of photons, atoms, and electrons; and magnetic fields.

Students will receive 2 units of credit for 7A after taking 10; 6 units of credit for both 7A-7B after taking 10. Instructors: Chiang, Marcy, Quataert

ASTRON 7B Introduction to Astrophysics 4 Units

Department: Astronomy

Course level: Undergraduate

Term course may be offered: Spring

Grading: Letter grade.

Hours and format: 3 hours of Lecture and 1 hour of Laboratory per week for 15 weeks.

Prerequisites: Physics 7A-7B (7B can be concurrent) or consent of the instructor.

This is the second part of an overview of astrophysics, which begins with 7A. This course covers the Milky Way galaxy, star formation and the interstellar medium, galaxies, black holes, quasars, dark matter, the expansion of the universe and its large-scale structure, and cosmology and the Big Bang. The physics in this course includes that used in 7A (mechanics and gravitation; kinetic theory of gases; properties of radiation and radiative energy transport; quantum mechanics of photons, atoms, and electrons; and magnetic fields) and adds the special and general theories of relativity.

Students will receive 2 units of credit for 7B after taking 10; 6 units of credit for both 7A-7B after taking 10. Instructors: Bloom, Chiang, Marcy, Quataert

ASTRON 10 Introduction to General Astronomy 4 Units

Department: Astronomy

Course level: Undergraduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 3 hours of Lecture and 1 hour of Discussion per week for 15 weeks. 6 hours of Lecture and 2 hours of Discussion per week for 8 weeks. 8 hours of Lecture and 2.5 hours of Discussion per week for 6