ASTRONOMY AND ASTROPHYSICS (ASTR)

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ASTR Courses

ASTR 1101 Introduction to the Solar System (3 units)
Term Typically Offered: F, SP, SU
2026-28 or later catalog: GE Area 5A
2020-26 catalogs: GE Area B1

Descriptive astronomical properties of the Earth, Moon, other planets and their satellites. Comets, asteroids and other members of the Solar System. Theories of the formation of the Solar System. Opportunities for astronomical observations. Intended for non-engineering and non-science majors. Not open to students with credit in ASTR 301, ASTR 302, ASTR 326, ASTR 3301, or ASTR 3302. Course may be offered in classroom-based or online format. 3 lectures. Fulfills GE Area 5A (GE Area B1 for students on the 2020-26 catalogs). Formerly ASTR 101.

ASTR 1102 Introduction to Stars and Galaxies (3 units)
Term Typically Offered: F, SP, SU
2026-28 or later catalog: GE Area 5A
2020-26 catalogs: GE Area B1

Descriptive astronomical properties of the Sun, stars, galaxies and interstellar material. Expanding universe and cosmological models. Opportunities for astronomical observations. Not open to students with credit in ASTR 301, ASTR 302, ASTR 326, ASTR 3301, ASTR 3302, PHYS 141, PHYS 143, PHYS 1141, or PHYS 1143. Course may be offered in classroom-based or online format. 3 lectures. Fulfills GE Area 5A (GE Area B1 for students on the 2020-26 catalogs). Formerly ASTR 102.

ASTR 2200 Special Problems for Undergraduates (1-2 units)
Term Typically Offered: F, SP
Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Repeatable up to 4 units. Formerly ASTR 200.

ASTR 2270 Special Topics (1-3 units)
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group study of special topics. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly ASTR 270.

ASTR 3301 Stars and Planetary Systems (3 units)
Term Typically Offered: F
Prerequisite: One of the following: PHYS 122, PHYS 132, PHYS 142, PHYS 1121, or PHYS 1141; and one of the following: MATH 121, MATH 141, MATH 1261, or DATA/MATH 1264.

Quantitative and descriptive properties of stars, the interstellar medium, planets, moons, and planetary systems. The Sun and the Solar System, planetary formation and exoplanets, and stellar atmospheres. The structure, formation, evolution, and death of stars. 3 lectures. Formerly ASTR 301.

ASTR 3302 Galaxies and Cosmology (3 units)
Term Typically Offered: SP
Prerequisite: ASTR 301 or ASTR 3301.

Quantitative and descriptive properties of the structure and evolution of galaxies. Introduction to modern cosmology from the Big Bang to the ultimate fate of the universe. Relativity, curvature of space, dark matter, cosmic microwave background, and open questions in cosmology. 3 lectures. Formerly ASTR 326.

ASTR 3324 Longitude, Navigation, and Timekeeping (3 units)
Term Typically Offered: SP
2026-28 or later: Upper-Div GE Area 2/5
2020-26 catalogs: Upper-Div GE Area B
Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); and completion of MATH 119, MATH 1005, or MATH 1007 with a grade of C- or better.

Evolution of navigational science from 1700 to today, covering the 'longitude problem' to the Global Positioning System. Emphasizes celestial navigation, timekeeping, and science, technology and mathematics to address a societal problem. 3 lectures. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly ASTR 324.

ASTR 4400 Special Problems for Advanced Undergraduates (1-2 units)
Term Typically Offered: F, SP
Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of selected problems. Repeatable up to 4 units. Formerly ASTR 400.

ASTR 4404 Research Experience for Advanced Undergraduates (1-2 units)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor.

Individual investigations, research, studies, or surveys of selected problems. Credit/No Credit grading only. Repeatable up to 4 units. Formerly ASTR 404.

ASTR 4444 Observational Astronomy (4 units)
Term Typically Offered: F
Prerequisite: ASTR 301 or ASTR 302; or ASTR 3301.

Introduction to observational astronomy. Coordinate systems, telescopes and observational instruments (CCDs, filters, spectrographs), observational methods and techniques, data reduction and analysis. Laboratory activities include use of telescope, CCD camera for data acquisition, data reduction and analysis, and presentation of results. 3 lectures, 1 laboratory. Formerly ASTR 444.

ASTR 4470 Special Advanced Topics (1-3 units)
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly ASTR 470.

ASTR 4471 Special Advanced Laboratory (1-2 units)
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 2 laboratories. Formerly ASTR 471.