

Space and Planetary Sciences (SPAC)

Courses

SPAC 5033. Astrophysics I: Stars and Planetary Systems. 3 Hours.

Stellar structure and evolution, the properties of the solar system, and extrasolar planetary systems. (Typically offered: Fall Odd Years)

This course is cross-listed with ASTR 5033.

SPAC 5111L. Space and Planetary Lab. 1 Hour.

Laboratory course in space and planetary sciences consisting of experiments in the five major areas of space and planetary sciences: planetary astronomy, planetary geology, planetary atmospheres, origin and evolution of life and orbital mechanics and astronautics. Intended for students enrolled in the graduate programs in space and planetary sciences. (Typically offered: Fall)

SPAC 5123. Internship. 3 Hours.

Internship for graduate students in the space and planetary sciences graduate degree programs and concentrations in the graduate programs in physics, biology, geosciences and mechanical engineering. Students conduct a phase of their research, normally for one month, at a national or industrial laboratory in North America or overseas. (Typically offered: Fall and Spring)

SPAC 5161. Seminar. 1 Hour.

Seminars organized by the Arkansas-Oklahoma Center for Space and Planetary Sciences covering topics on the cutting edge of research in the field for graduate students conducting research with a faculty member in the space and planetary sciences as part of their graduate degree programs or concentrations in the graduate programs in physics, biology, geology, geography and mechanical engineering. (Typically offered: Fall and Spring)

SPAC 5211. SPAC Proseminar. 1 Hour.

Introductory course consisting of discourses and case studies in ethics, communications and public policy in the administration of space and planetary sciences. Prerequisite: Admission to program or instructor consent. (Typically offered: Spring)

SPAC 5313. Planetary Atmospheres. 3 Hours.

Origins of planetary atmospheres, structures of atmospheres, climate evolution, dynamics of atmospheres, levels in the atmosphere, the upper atmosphere, escape of atmospheres, and comparative planetology of atmospheres. (Typically offered: Irregular)

SPAC 5413. Planetary Geology. 3 Hours.

Exploration of the solar system, geology and stratigraphy, meteorite impacts, planetary surfaces, planetary crusts, basaltic volcanism, planetary interiors, chemical composition of the planets, origin and evolution of the Moon and planets. (Typically offered: Spring Even Years)

SPAC 5513. Biochemical Evolution. 3 Hours.

Abiotic synthesis of biomolecules on Earth, the origin of cells; genetic information, origin of life on Earth and elsewhere, evolution and diversity, ecological niches, bacteria, archaea, and eukaryotic, novel metabolic reshaping of the environment, life being reshaped by the environment, molecular data, and evolution. Prerequisite: CHEM 5813. (Typically offered: Spring Odd Years)

SPAC 5553. Astrobiology. 3 Hours.

Discusses the scientific basis for the possible existence of extraterrestrial life. Includes origin and evolution of life on Earth, possibility of life elsewhere in the solar system (including Mars), and the possibility of life on planets around other stars. Prerequisite: Instructor consent. (Typically offered: Spring Even Years)
This course is cross-listed with BIOL 5553.

SPAC 5613. Astronautics. 3 Hours.

Study of spacecraft design and operations. Prerequisite: Admission to program or instructor consent. (Typically offered: Irregular)

SPAC 600V. Master's Thesis. 1-10 Hour.

Master's thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

SPAC 700V. Doctoral Dissertation. 1-18 Hour.

Doctoral dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.