



University Bulletin

Undergraduate Degree Programs

Astrobiology (ABIOL)

ABIOL 574 Planetary Habitability (3) Aspects of star and planet formation, habitable zones, biospheric evolution, life in extreme environments, planet and life detection.

ABIOL 574 Planetary Habitability (3)

This course introduces graduate students to the foundations of the field of Astrobiology. Astrobiology is a new, multidisciplinary field of science encompassing astronomy, biology, microbiology, biochemistry, genomics, chemistry, atmospheric chemistry, geochemistry, paleontology, geology, and many other fields of science and technology. Astrobiology includes the study of the origin of habitable planets, origin of life, the connections between the evolution of life and of environments, the potential for life and life's actual distribution in our solar system and beyond, and future of life on Earth and in space.

Students will expand their knowledge base beyond their discipline while considering such issues as the origins of stars and planets, environmental conditions of the prebiotic Earth, the origin of life on Earth, the nature of the universal "tree of life", the establishment of evolutionary patterns and rates, the causes of global glaciations and their use as analogues for life on planets or moons such as Europa, how life survives in extreme environments on Earth, what determines planetary habitability, how planets in other solar systems are detected, and how we might detect life on other planets.

This is a required course for all students in Dual-Title Degree Program in Astrobiology, but is open to any qualified undergraduate or graduate student. There is no specific prerequisite. Grading will be based on participation and performance on a midterm and final examination, problem sets, and laboratory exercises.

General Education: None

Diversity: None

Bachelor of Arts: None

Effective: Summer 2004

Note : Class size, frequency of offering, and evaluation methods will vary by location and instructor. For these details check the specific course syllabus.

| [The Pennsylvania State University\(http://www.psu.edu/\)](http://www.psu.edu/) |

©2001-2008. All rights reserved.

This is the official bulletin of The Pennsylvania State University. Programmatic expectations for General Education are those in effect at the time of admission to degree candidacy, and college and major requirements are those in effect at the time of entry to college and major. These are accurately indicated in each student's degree audit.

The University reserves the right to change the requirements and regulations listed here and to determine whether a student has satisfactorily met its requirements for admission or graduation, and to reject any applicant for any reason the University determines to be material to the applicant's qualifications to pursue higher education. Nothing in this material should be considered a guarantee that completion of a program and graduation from the University will result in employment.

The University Faculty Senate has responsibility for and authority over all academic information contained in the Undergraduate Bulletin.