

# Natural Sciences

The natural sciences sequence “Evolution of the Natural World” provides a way for students in the humanities and social sciences to satisfy the general education requirements through an integrated sequence in the physical and biological sciences that follows a distinct theme through four quarters. These requirements can be fulfilled separately, of course.

The natural sciences sequence is open only to first- and second-year students and to first-year transfer students, with preference given to first-year students. The courses must be taken in sequence.

## Courses: Natural Sciences (NTSC)

**10100-10200-10300-10400. Evolution of the Natural World.** *PQ: MATH 10600, or placement into 13100 or higher. This sequence meets the general education requirements in the physical and biological sciences for humanities and social sciences students. Open only to first- and second-year students and to first-year transfer students, with preference given to first-year students. Must be taken in sequence. This is an integrated four-quarter sequence that emphasizes the evolution of the physical universe and life on Earth, and explores the interrelationships between the two.*

**10100. Evolution of the Solar System and the Earth.** This course examines the physical and chemical origins of planetary systems, the role of meteorite studies in this context, and a comparison of the Earth with neighboring planets. It then turns to chemical and physical processes that lead to internal differentiation of the Earth. Further topics include the thermal balance at the Earth's surface (glaciation and the greenhouse effect), and the role of liquid water in controlling crustal geology and evolution. *A. Davis. Winter. L.*

**10200. Evolution of the Universe.** *PQ: NTSC 10100.* This course is designed to encourage a sense of awe, appreciation, and understanding of the topics investigated in modern astrophysics, such as the origin of the universe, the formation and evolution of the sun and the Earth, the nature of space and time, and the search for other planets and life in the universe. Students also experience the predicting, testing, and investigative nature of science. *C. Hogan. L. E. Kibblewhite. Spring.*

**10300. Biological Evolution.** *PQ: NTSC 10200.* This course is an introduction to evolutionary processes and patterns in present-day organisms and in the fossil record and how they are shaped by biological and physical forces. Topics emphasize evolutionary principles. They include DNA and the genetic code, the genetics of populations, the origins of species, and evolution above the species level. We also discuss major events in the history of life, such as the origin of complex cells, invasion of land, mass extinction. *D. Jablonski. Winter. L.*

**10400. Environmental Ecology.** (=BIOS 13107, ENST 12404) *PQ: BIOS 10110 or 10130.* This course emphasizes basic scientific understanding of ecological principles that relate most closely to the ways humans interact with their environments. It includes lectures on the main environmental pressures, notably human population growth, disease, pollution, climate change, habitat destruction, and harvesting. We emphasize the ongoing impacts on the natural world, particularly causes of population regulation and extinction and how they might feed back on to humans. Discussion required. *T. Price. Spring.*