

PLANETARY SCIENCE MINOR

MINOR DESCRIPTION

Planetary science is an emerging interdisciplinary field that seeks to understand the origin and evolution of the solar system in which we live and the other solar systems that we have identified in our galaxy. The science questions include the most important of our times: How do planets (including the Earth) form? How common are they in the universe? What is their range of properties and how do they evolve? Is there or was there ever life on other planets? This field has grown significantly over the last decade with major advances in our understanding of Mars and the outer solar system and the discovery of hundreds of exoplanetary systems. Planetary research is a primary focus of NASA's current and future missions.

The planetary science minor will give students exposure to fundamental themes, tools, and topics that are relevant to future careers in the planetary science, general sciences, and for the educated citizen.

MINOR REQUIREMENTS

The planetary science minor consists of 5 graded courses plus at least 3 offerings of the 0.25 credit Planetary Science Seminar.

Code	Title	Hours
Introductory Courses		2
Students are expected to take Introductory Courses to both of the major areas important to our field, Astronomy and E&ES:		
ASTR155	Introduction to Astrophysics	
E&ES101	Dynamic Earth (or an upper level (200+) E&ES course)	
or E&ES115	Introduction to Planetary Geology	
Intermediate Courses		3
The minor requires three upper-level courses chosen from a list of relevant offerings in Astronomy and E&ES. At least one of the intermediate courses would need to be from each of the departments, in order to preserve the interdisciplinary nature of the minor. These courses fluctuate from year to year but would currently be drawn from the following set:		
ASTR231	Stellar Structure and Evolution	
ASTR224	Exoplanets: Formation, Detection, and Characterization	
E&ES213 & E&ES214	Mineralogy and Laboratory Study of Minerals	
E&ES215 & E&ES216	Earth Materials and Earth Materials Laboratory	
E&ES220 & E&ES221	Geomorphology and Geomorphology Laboratory	
E&ES223 & E&ES224	Structural Geology and Field Geology	
E&ES234 & E&ES235	Geobiology and Geobiology Laboratory	
E&ES280 & E&ES281	Introduction to GIS and GIS Service-Learning Laboratory	
or E&ES380	Advanced GIS and Spatial Analyses	

E&ES313 & E&ES314	Petrogenesis of Igneous and Metamorphic Rocks and Laboratory Study of Igneous and Metamorphic Rocks
E&ES319	Meteorites and Cosmochemistry
E&ES321	Planetary Evolution
E&ES375	Modeling the Earth and Environment
E&ES385 & E&ES386	Remote Sensing and Remote-Sensing Laboratory

Advanced Courses 0.75

To qualify for the minor a student must complete AST/E&ES 555 Planetary Science Seminar during at least three of the four semesters available in their junior and senior years. We encourage students to complete all four semesters if possible in order to obtain complete coverage of our cycle of topics.

E&ES/ASTR555	Planetary Science Seminar
--------------	---------------------------

Research (Optional)

While research in the area of planetary science is not required, we hope that most students seeking this minor will elect to do research with a member of the Planetary Science Group. Research can be done during the semester or over the summer.