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 Cours | es | 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 | | | |
| E&ES155 | Earth System Science | 1.25 | | |
| Intermediate Cours | 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 | | | | |
|--|--|------|--|--|
| 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 | | | | |

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.