

# Course Schedule AY 2023-2024

## Division of Geological and Planetary Sciences

Fall 2023	Winter 2024	Spring 2024
<b>Division</b> Ge 11 a. Bucholz (Earth as a Planet) Ge 101. Bucholz (Introduction to Geology and Geochemistry) Ge 108. Brown (Applications of Physics to the Earth Sciences) Ge/ESE 298. Mentoring and Outreach for GO-Outdoors (Fall, Winter, Spring)	Ge 11 b. Fischer (Earth and the Biosphere) Ge 11 d. Gurnis (Introduction to Earth and Planetary Sciences: Geophysics) Ge 102. Gurnis (Introduction to Geophysics) Ge 104. Fischer (Introduction to Geobiology)	Ge 1. Asimow (Earth and Environment) Ge/Ay 11 c. Ehlmann (Planetary Sciences) Ge 103. Ehlmann (Introduction to the Solar System) Ge/EE/ESE 157 c. Ehlmann (Remote Sensing for Environmental and Geological Applications) Ge 109. Tissot (Oral Presentation, options: GB, GC, GE)
<b>Geobiology</b> Ge/ESE/Bi 248. Orphan (Environmental Justice)	Bi/Ge/ESE 105. Orphan (Evolution)	Ge/Bi/BE/CNS/ESE 147. Fischer, Tejada (Challenges and Opportunities in Quantitative Ecology)
<b>Geochemistry</b> Ge 145. Sessions (Isotope-Ratio Mass Spectrometry)	Ge 116. Asimow, Ehlmann, Jackson (Analytical Techniques Lab) Ge 140 b. Tissot (Radiogenic Isotope Geochemistry) Ge 218. Eiler (Stable Isotopes Seminar)	Ge/ESE 140 c. Sessions (Stable Isotopic Biogeochemistry) ESE/Ge 142. Zakem (Aquatic Chemistry of Natural Waters) Ge 217. Farley (Radiogenic Isotopes Seminar) Ge 219. Tissot (Non-traditional Isotopes Seminar)
<b>Geology</b> Ge 114 a. Rossman (Mineralogy) Ge 114 b. Rossman (Mineralogy Lab) Ge 121 a. Lamb (Advanced Field Geology) Ge 136 a. Kirschvink (Regional Field Geology of the Southwestern United States) Ge 212. Asimow (Thermodynamics of Geological Systems)	Ge 106. Avouac (Introduction to Structural Geology) Ge 112. Grotzinger (Sedimentology and Stratigraphy) Ge 115 a. Stolper (Petrology and Petrography: Igneous Petrology) Ge 121 b. Grotzinger (Advanced Field Geology) Ge 122 b. Stock (Field Geology Seminar) Ge 126. Lamb (Topics in Earth Surface Processes) Ge 136 b. Kirschvink (Regional Field Geology of the Southwestern United States) Ge 277. Avouac (Active Tectonics Seminar)	Ge 115 b. Eiler (Petrology and Petrography: Metamorphic Petrology) Ge 120 a. Bucholz (Introduction to Field Geology) Ge 121 c. Stock (Advanced Field Geology) Ge 123. Bucholz (Continental Crust Seminar) Ge 136 c. Kirschvink (Regional Field Geology of the Southwestern United States) Ge 177. Avouac (Active Tectonics)
<b>Geophysics</b> Ae/Ge/ME 160 a. Lapusta (Continuum Mechanics of Fluids and Solids) Ge 161. Stock (Plate Tectonics) Ge 264. Ross (Machine Learning in Geophysics) FS/Ge 16. Stock (First-Year Undergrad Seminar: Earthquakes)	Ge 111 a. Clayton, Simons (Applied Geophysics Seminar) Ae/Ge/ME 160 b. Lapusta (Continuum Mechanics of Fluids and Solids) Ge 162. Zhan (Seismology) Ge 164. Jackson (Mineral Physics) Ge 271. Ross (Dynamics of Seismicity)	Ge 111 b. Clayton, Simons (Applied Geophysics Field Course) Ge 163. Gurnis (Geodynamics) Ge 261. Zhan (Advanced Seismology)
<b>Planetary Science</b> Ge/Ay 133. Batygin (The Formation and Evolution of Planetary Systems) FS/Ge 20. Brown (First-Year Undergrad Seminar: Life in the Universe)	Ge/Ay 117. Knutson (Bayesian Statistics and Data Analysis) Ge/Ch 128. Blake (Cosmochemistry) Ge/Ay 137. Batygin (Planetary Physics) Ge 151. de Kleer (Planetary Surfaces) Ge/Ay 159. Yung (Astrobiology)	Ge 131. Stevenson (Planetary Structure and Evolution) Ge/ESE 150. Knutson (Planetary Atmospheres) Ay/Ge 107. de Kleer, Hillenbrand (Introduction to Astronomical Observation)
<b>Environmental Science and Engineering</b> ESE 101. Schneider (Earth's Atmosphere) ESE 102. Thompson (Earth's Oceans) ESE/Bi 166. Leadbetter (Microbial Physiology) FS/ESE/Ge 18. Leadbetter (First-year Undergrad Seminar: The Microbial World - The Unseen in Plain Sight)	ESE 103. Frankenberg (Earth's Biogeochemical Cycles) ESE 104. Callies (Current Problems in ESE) ESE 130. Callies (Fundamentals of Atmosphere and Ocean Dynamics) ME/CE/Ge/ESE 146. Fu (Computational Methods for Flow in Porous Media) ESE/Ge/Ch 171. Wennberg (Atmospheric Chemistry I) ESE/Ge/Bi/IDS 184. Karthikeyan (Computational Tools for Decoding Microbial Ecosystems)	ESE 1. Wennberg (Earth's Climate) ESE 131. Callies (Ocean Dynamics) ESE 133. Schneider (Global Atmosphere Dynamics) ESE 135. Callies (Topics in Atmosphere and Ocean Dynamics) ESE 144. Teixeira, Thompson (Climate from Space) ESE 156. Frankenberg (Remote Sensing of the Atmosphere and Biosphere) ESE/ChE 158. Flagan (Aerosol Physics and Chemistry)