

**Course List – Fall 2026 / Winter 2027**  
**Undergraduate Teaching Assistants**  
**Department of Geological Sciences and Geological Engineering**

- Teaching Assistant (TA) positions for the courses listed below are open to upper-year undergraduates.
- TAs are 65 hours, with a few exceptions.
- Please note that the course list is subject to change.

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**Introductory and Cross-Disciplinary**

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**APSC 151 - Earth Systems Engineering (F26)**

An introduction to the complex Earth System (the solid earth, hydrosphere, atmosphere, and biosphere). The science behind our exploration and understanding of our planet and its ongoing evolution is explored in combination with the engineering geology of geo-materials, geo-resources, geo-dynamics and geo-risk.

**GEOL 106 - Environmental Geology and Natural Hazards (F26, W27)**

The relationship between humankind and our ever-changing planet, with a focus on natural geologic hazards (volcanic eruptions, earthquakes, landslides, tsunamis, mass movement, floods, extraterrestrial impacts, etc.), and environmental impacts which result from population and land-use expansion and our increased use of water, energy and mineral resources. A study of the sources and impact of pollution and global climate change, and of public perception of and response to geological risk.

**GEOL 200 - Oceanography (F26)**

Introduction to marine science. Topics include ocean basins and their sediments; seawater chemistry/biochemistry; ocean waves, tides and currents; ocean-atmosphere interaction; polar to tropical organism communities; marine resources; environmental concerns; global change.

**GEOL/E 204 - Geology of the Solar System (W27)**

Provides an overview of the Solar System from a geologic perspective. In addition to introducing the origin and evolution of our planetary neighbourhood, discussion will extend to new frontiers of exploration, habitation and mining in space, and the geoengineering challenges that these present. Emphasis on investigating the processes that shape planetary bodies in the Solar System and how these processes may have shaped the evolution of life.

**GEOL 290 - World Building (W27)**

A blended in-person and online lecture and design studio course on the design of worlds for fiction, art, game-design, communications, and more. Lectures emphasize the requisite science, humanities, and social sciences to constrain a collaborative worldbuilding exercise delivering a partially realized world.

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## **Mineralogy, Petrology, and Structural Geology**

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### **GEOL/E 221 - Geological Field Methods (F26)**

The field study of surficial deposits, rock types, and geological processes, based on the geology of the Kingston area. Descriptions, samples and measurements acquired on several field trips will be analyzed, and the results recorded in maps, sections, and reports throughout the course.

### **GEOL/E 232 - Mineralogy (F26)**

Characterization of rock- and soil-forming silicate and non-silicate minerals (their crystallography, optical and physical behaviour, and crystal chemistry), at the macroscopic and microscopic scales. The structural, chemical and genetic aspects of the crystalline state as displayed by minerals are considered.

### **GEOL/E 235 - Igneous and Metamorphic Petrology (W27)**

Introduction to the genesis and characterization of igneous and metamorphic rocks. Students will acquire skills to classify rocks and the theoretical background to place these rocks in the context of where, why, and how they form with implications for resource exploration and utilization. Macroscopic and microscopic properties will be studied.

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## **Sedimentology, Stratigraphy, and Paleontology**

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### **GEOL 107 / GEOE 207 - History of Life (F26)**

The inter-relationship between organic evolution and global change since the inception of life 4 billion years ago. Coevolution of early life and the atmosphere; development of marine animals; invasion of the land; dinosaurs and their world; mass extinctions; the Age of Mammals; and hominid evolution.

### **GEOL/E 238 - Sedimentation and Stratigraphy (W27)**

An examination of the link between surficial geological processes and the sedimentary record produced by these processes. Students obtain an integrated overview of the nature and operation of the Earth-surface environment. Topics include: origin of sedimentary rocks and sedimentary structures; depositional environments and stratigraphic successions; stratigraphic principles, application to sedimentary basins and hydrocarbon genesis; interaction of natural processes with human society.

### **GEOL/E 337 - Paleontology (W27)**

Review of the major groups of invertebrate fossils, emphasizing functional morphology, paleoecology, evolution, and geological significance.

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## **Geophysics and Remote Sensing**

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### **GEOL/E 249 - Geophysical Characterization of the Earth (W27)**

The application of physical principles to examine and characterize the Earth at all scales. The Earth's physical properties and dynamic processes will be assessed and evaluated by integrating such topics as gravity, seismology, magnetism, geochronology, and heat flow, as related to scientific and engineering problems.

### **GEOL/E 333 - Terrain Evaluation (W27)**

An introduction to the principles of geomorphology relevant to Geological Sciences and Geological Engineering. Identification and evaluation of terrain features using analog and digital imagery via traditional and digital (GIS) methods. Digital terrain model acquisition and analysis. Introduction to digital terrain analysis.