Earth Processes

Last Updated: Thu, 07/10/2025

Course prefix: EAS

Course number: 2600

Section: EAS

CRN (you may add up to five):
91491

Instructor First Name: Andrew

Instructor Last Name: Newman

Semester: Fall

Academic year: 2025

Course description:

The purpose of this course is to provide you with an understanding of how the Earth works and how it affects you. As an inhabitant of Earth, it is important to understand the processes that shape the landscape, cause natural hazards, influence climate change, and produce natural resources. Knowledge of how the Earth works can also help you in your daily life. For example, it is useful to be able to assess potential geologic hazards when buying a home, make informed decisions about the use and conservation of natural resources, and better appreciate the features you might encounter in the mountains, at the beach, or when visiting a national park.

Course learning outcomes:

In addition to critical scientific thinking, students will come away with an overview of major Earth and planetary processes associated with:

- Natural and Anthropogenic Hazards (incl., earthquakes, tsunami, flooding, landslides)
- Earth Resources and Materials (incl., water, mineral, energy, construction, formation and differentiation of rocks/minerals)
- Planetary and Biologic Evolution and Plate Tectonics (incl., geologic time/dating, nutrient cycling/availability, biologic radiations/extinctions)
- Impacts on the Earth's Critical Zone (incl., landscape evolution, atmo/cryo/hydro-sphere, biologic, human)

Required course materials:

Grotzinger, J. & T. Jordan, Understanding Earth, 6th, 7th, or 8th Ed., MacMillan Learning, ISBN: 131905532X, 2020 (publisher, ISBN and date are 8th Ed.).

Because the material is largely duplicated between versions, students may use any of the above editions of this book.

Grading policy:

Weekly Quizzes (80%): At the beginning of every Thursday class (after 1st week), we will have a brief quiz (~10 min) on the prior week's material. These will be administered through Canvas, and can only be taken at that time. The lowest two grades can be replaced by a comprehensive final quiz during the final exam period. If you are satisfied with your grade before the final, you do not need to take it. Quizzes will focus on lecture and discussion material.

Labs (20%): All students must sign up for the laboratory section associated with the class. A separate lab syllabus will be handed out during your first lab section. The labs are designed to help your overall understanding of the course, and should help you perform better during quizzes. Normally, labs include both in-lab activities as well as on-campus, and off-campus trips. We are planning at least 2 off-site field trips during labs, or optionally on a Saturday.

Course Grade: Your grades will be based on your performance during Quizzes (80%) and Labs (20%).
• Letter Grade: A ≥ 90% > B ≥ 80% > C ≥ 70% > D ≥ 60% > F
• Satisfactory/Unsatisfactory: S ≥ 70% > U

Attendance policy:

You are expected to attend the class in-person. If health-measures require, we will offer a remote, likely synchronous option. I will not be taking direct attendance, but if you miss a quiz without a university-approved reason it will count as one of your dropped scores. In any serious situation that precludes your participation in class (death in the family, serious illness, etc.) you should contact the Dean of Students as they are there to help you in these cases (https://www.deanofstudents.gatech.edu/).

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

Core IMPACTS statement(s) (if applicable):

Course EAS:2600 EARTH PROCESSES

This is a Core IMPACTS course that is part of the STEM area.
Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help students master course content, and support students' broad academic and career goals.
This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork