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EAS 2600: Earth Processes (Majors/Minors Section)

The Georgia Institute of Technology

January 9 - May 2, 2024
Lecture: Tues., Thurs. 9:30 - 10:45 am in ES& T L1116
Lab: Mon. 3:30 - 6:15 pm in Kendida 298 (Actual location is TBD)

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Online material: Canvas`https://gatech.instructure.com/courses/363400` and `https://avnewman.github.io/teaching/EarthProcesses`

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General

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 that you 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 lives. For example, it is useful to be able to evaluate potential geologic hazards when buying a home, make informed decisions about the use and conservation of natural resources, and better appreciate features you might encounter in the mountains, at the beach, or when visiting a national park.

Office Hours: I will be open to your communications online, and will focus on establishing one-on-one and small group meetings when necessary. Canvas messages/email are preferred for quick, short-answer questions, particularly about logistics. However, if you've run into a conceptual block, or would like to discuss a topic in more detail, this is best done by appointment.

Required Text: Grotzinger, J. & T. Jordan, Understanding Earth, 6^{th} or 7^{th} Ed. (preferred, 7^{th} Ed. is okay), Freeman Press, 672 (650) pp., ISBN: 1429219513 (1464138745), 2010 (2014).
Because the material is largely duplicated between the two versions, students may use either of the above editions of this book. Chapter numbers described in the outline on page 4 correspond to both versions. Almost equivalent chapter numbers are also shown in parentheses for the 8^{th} edition, if this is what you've purchased.

Required Electronics: Students must have a computer with reliable high-bandwidth internet, a functional webcam, speakers, and microphone (headphones are fine). A quiet and minimally disruptive environment for online activities and study are important.

Online Resources and Communication: Canvas is the primary organizational resource for information about the class. Lectures are planned to be live and in-person. If there is a significant health convern due to COVID or similar, we will transition to Zoom meetings. I will always inform of any such changes through your Canvas announcements.

Being at class and on-time is essential for performing best in this course.
Communication is planned too through Canvas using either the internal email-like application, Canvas announcements, or discussion. If you need to email me outside of Canvas, please identify `[EAS 2600]` at the beginning of the subject line.

Health: For any face-to-face contact masks will be optional, unless otherwise instructed. Regardless, we should try to maintain at least 6 feet of separation for all communication. PPT slides for class are planned to be made available following each class. These are considered supplementary for study, but are not a replacement for class attendance.
Your safety, that of your families, our TA, and mine are of the utmost importance, followed by a quality education. More information on GT guidance with regards to face-coverings and other COVID-related information is available at: *https://health.gatech.edu/coronavirus/students*

Students with Disabilities: If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or `https://disabilityservices.gatech.edu`, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Evaluation

Weekly Quizzes (80%): At the beginning of every Thursday class (after 1st week), we will have a brief quiz (∼10 min) on the prior weeks 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 content 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.
There are no labs during the first 2 weeks of school this semester.

Attendance: 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/`).

Course Grade: Your grades will be based on your performance during **Quizzes (80%) and Labs (20%)**.

- Letter Grade: A $\geq$ 90% > B $\geq$ 80% > C $\geq$ 70% > D $\geq$ 60% > F
- Satisfactory/Unsatisfactory: S $\geq$ 70% > U

Academic Honesty

General: It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which will be strictly adhered to in this class. The complete text of the Honor Code may be found at: `https://honor.gatech.edu`.

Quizzes and Exams: All quizzes are planned to be administered through Canvas, and will be available for only a short window. Proper review of lectures and readings will ensure your best performance during these assessments. Relying on real-time lookup is not the intent of this course, and will likely be detrimental to your performance. You **are forbidden from sharing answers** during, or otherwise while a quiz or exam is still open for others to take. No use of Artificial Intelligence in answering quizzes, labs, or other course work. If there is evidence of such, you will be reported to the Dean of Students, receive a zero (0%) on the quiz and will, and that score **will not be dropped in determining your final grade**.

Student-Faculty Expectations

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty and students. Please see the *Student Handbook Code of Conduct* for some basic expectation that we should have of each other. Ultimately, we should respect each others time, hard work, and quest for knowledge. We all should strive to build an environment for cordial and effective interaction.

Pathway to success:

Students do best in this course if they keep up with reading, actively participate in lecture and lab meetings, turn in assignments on time, and rapidly seek help if they begin to fall behind, or are having difficulty with a topic. Note that chapters are listed with each lecture, and I will not explicitly tell you to read beforehand. When prepping for quizzes, it is wisest to focus on content that was discussed in lecture rather than material only covered in the book. Finally, I try to focus the course on understanding processes rather than memorizing jargon. That said, a certain amount of jargon is inevitable. The jargon that I expect you to know are usually underlined during my lectures.

Lectures

Date	Chapter: 6&7 (8) eds.	Topic
Jan 9	Ch 1	Earth system/Intro.
Jan 11 (No Quiz)	Ch 2	Plate Tectonics
Jan 16	Ch 3	Materials: Rocks/Minerals
Jan 18 (Quiz)	Ch 4	Igneous Processes/Features
Jan 23	Ch 12 (5)	Volcanoes
Jan 25 (Quiz)	–	*How to monitor a volcano?* *
Jan 30	Ch 13 (10)	Earthquakes: I
Feb 01 (Quiz)	Ch 13 (10)	Earthquakes: II
Feb 06	Ch 14 (11)	Earth's interior: I
Feb 08 (Quiz)	Ch 14 (11)	Earth's Interior: II
Feb 13	Ch 6 (7)	Metamorphic Processes/Features
Feb 15 (Quiz)	–	*Spherical cows and other oddly shaped creatures* *
Feb 20	Ch 7	Deformation of Rocks/Mountain Building
Feb 22 (Quiz)	Ch 5 (6)	Sedimentary Processes/Features
Feb 27	Ch 8 (9)	Clocks in Rocks
Feb 29 (Quiz)	Ch 15 (12)	Climate
Mar 05	Ch 10 (21)	History of the Continents
Mar 07 (Quiz)	Ch 11 (22)	Geobiology
Mar 12	Ch 16	Weathering/Erosion/Mass Wasting
Mar 14 (Quiz)	Ch 21 (15)	Glaciers
Mar 18 - 22	*Spring Break*	
Mar 26	Ch 9 (20)	Planetary
Mar 28 (Quiz)	–	*We're doing science!* *
Apr 2	Ch 17	Hydrology
Apr 4 (Quiz)	Ch 18	Stream Transport
Apr 9	Ch 22 (16)	Landscape Development
Apr 11 (Quiz)	Ch 19	Winds & Deserts
Apr 16	Ch 23 (13-14)	Human Impacts I
Apr 18	Ch 23 (13-14)	Human Impacts: II
Apr 23	Ch 1-19,21-23	Course Review
TBD!!! May 4 (Thurs. 8a - 10:50a)	**Chs. 1-23**	**Final Quiz worth 2x**

* In-class Discussion/Activity

Topics and timing are subject to change during the semester.
Quizzes are on most Thursdays.

Campus Resources for Students

In your time at Georgia Tech, you may find yourself in need of support. Below you will find some resources to support you both as a student and as a person. Some websites change with time (faster than syllabi!). As such, links to all of these resources should be findable on the left-hand side of the Canvas webpage.

Academic support

- Center for Academic Success https://success.gatech.edu:
  - 1-to-1 tutoring https://success.gatech.edu/1-1-tutoring
  - Peer-Led Undergraduate Study (PLUS) https://success.gatech.edu/tutoring/plus
  - Academic coaching https://success.gatech.edu/coaching
- Drop-in tutoring for many 1000 level courses: *Residence Life's Learning Assistance Program: https://housing.gatech.edu/learning-assistance-program*
- Group study sessions and tutoring programs: *https://omed.gatech.edu/programs/academic-support*
- Individualized help with writing and multimedia projects: *Communication Center (https://www.communicationcenter.gatech.edu)*
- Academic advisors for your major: *https://advising.gatech.edu/*

Personal Support at Georgia Tech Resources

- The Office of the Dean of Students: https://studentlife.gatech.edu/content/services; 404-894-6367; Smithgall Student Services Building 2nd floor: *You also may request assistance at https://gatech-advocate.symplicity.com/care_report/*
- Counseling Center: https://counseling.gatech.edu; 404-894-2575; Smithgall Student Services Building 2nd floor
  - Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention. Their website also includes links to state and national resources.
  - Students in crisis may walk in during business hours (8am-5pm, Monday through Friday) or contact the counselor on call after hours at 404-894-2204.
- Students' Temporary Assistance and Resources (STAR): https://studentlife.gatech.edu/content/need-help: *Can assist with interview clothing, food, and housing needs.*
- Stamps Health Services: https://health.gatech.edu; 404-894-1420: *Primary care, pharmacy, women's health, psychiatry, immunization, allergy, health, nutrition*
- OMED: Educational Services: https://www.omed.gatech.edu
- Women's Resource Center: https://www.womenscenter.gatech.edu; 404-385-0230
- LGBTQIA Resource Center: https://lgbtqia.gatech.edu/; 404-385-2679
- Veteran's Resource Center: https://veterans.gatech.edu/; 404-385-2067
- Georgia Tech Police: 404-894-2500