

GEOS 170A1 Earth: From Birth to Death? Section 001, Spring 2021

Instructor: Dr. Jessica Kapp jkapp@arizona.edu Office: Gould Simpson 324
Office Hours: Due to COVID19, I will not be holding regular office hours. If you need to speak to me, you can email me to make an appointment for a Zoom meeting.

Teaching Assistant: Nitzan Yanay (nitzanyanay@email.arizona.edu). Nitzan will hold weekly Zoom office hours. See d2l for details.

Zoom Class (optional) meets M, W, F from 12:00 – 12:50 p.m.
Join Zoom Meeting using the following link (also found on d2l)
<https://arizona.zoom.us/j/87027377659>

Please note: This is a large enrollment class that will not meet in person. This class is listed as live online, however you can complete this class completely asynchronously as all lectures/assignments/quizzes/exams will be posted on d2l. Weekly Zoom classes will include a brief summary of key points from the posted lecture videos, and then we will work through tutorials/activities that supplement the lecture material (note: Tutorials/Activities are not turned in for a grade). **Actively watching lecture videos and taking notes, participating in weekly Zooms, and completing all class tutorials/activities, are the best way to ensure success in this course.**

Course Materials and Class Logistics:

- **REQUIRED: Lecture Tutorials for Earth Science, by Kortz and Smay** – This will be available on d2l (under Content) as an eBook resource. It is a required book for the class, so please follow the instructions and be sure to obtain access to it via d2l. Tutorials listed on class schedule are from this book. (Activities are posted as word docs on d2l in the weekly class work).
- **REQUIRED: Access to a computer/tablet and internet** – all class work will be posted and turned in online via d2l.
- Class work is posted weekly on d2l – all weekly material posts on Sunday mornings and all weekly graded work is due by the following Sunday night at 11:59 PM. You can turn in work anytime over the course of the week, up until Sunday night.
- It is your responsibility to turn in work before the Sunday night deadline each week.
- There are no make-ups on missed work – you have one week to complete all weekly work.
- We drop several grades (lowest) in each graded category except exams (see details below).
- If you are struggling for any reason, it is your responsibility to contact the instructor immediately to discuss options.

Course learning outcomes: By the end of this course students should be able to explain the origin of Earth and its atmosphere/oceans, how earth processes (e.g., plate tectonics, rock formation/change/breakdown, landslides and floods, atmospheric/ocean circulation) relate to basic scientific principles such as density and thermodynamics; describe Earth processes and how they shape Earth's surface; link Earth processes to one another; explain how the greenhouse effect works and how it is related to global warming; describe how Earth processes/geological hazards affect humans/society; list factors that contribute to climate and climate change; discuss the future of planet earth based on current trends in population, energy use, and climate change.

| Date | Class Topics by Week | Tutorials (in eBook on d2l) | Activities (docs on d2l) |
|-------------|---|--|---|
| W 1/13 | 1a. Intro – The Scientist Perspective | | |
| F 1/15 | 1b. Origin of the Universe | | Doppler Shift and Expansion of the Universe |
| M 1/18 | 2. NO CLASS - Martin Luther King Jr. Day | | |
| W 1/20 | 2a. Origin of the Solar System | Rocky Inner Planets v. Gaseous Outer Planets | |
| F 1/22 | 2b. Density and Earth's Layers | Outer Layers of Earth | |
| M 1/25 | 3a. Minerals and Rocks | Rock Categories The Rock Cycle | |
| W 1/27 | 3b. Paradigm Shift: Plate Tectonics | | Continental Drift v. Plate Tectonics |
| F 1/29 | 3c. Plate Tectonics I | Tectonic Plates and Boundaries; Seafloor ages | |
| M 2/1 | 4a. Plate Tectonics II | Divergent Boundary Features Subduction Features | |
| W 2/3 | 4b. Plate Tectonics III | Movement at Convergent Plate Boundaries | Transform Boundaries |
| F 2/5 | 4c. Plate Tectonics Overview | History of an Ocean | |
| M 2/8 | 5a. Earthquakes | Locations of Earthquakes | |
| W 2/10 | 5b. Seismic Waves and Earth's Interior | Outer Core | |
| F 2/12 | 5c. Thermodynamics and Melting | Magma Source Depth | |
| M 2/15 | 6a. Volcanoes | Volcano Types | |
| W 2/17 | 6b. Hot Spots | Hot Spots | |
| F 2/19 | 6. Review for Exam 1 | Exam 1 due Sunday night, 2/21, at 11:59 PM | |
| M 2/22 | 7a. Planetary Tectonics and Magmatism | Volcanoes on Other Planets | |
| W 2/24 | 7b. Tsunamis | Tsunamis | |
| F 2/26 | 7. NO CLASS – Reading Day | | |
| M 3/1 | 8a. The Water Cycle | The Water Cycle Water Table | |
| W 3/3 | 8b. Earth Surface Processes | Weathering | |
| F 3/5 | 8c. Landslides | Landslides | |
| M 3/8 | 9a. Floods | Flood Curves | |
| W 3/10 | 9. NO CLASS – Reading Day | | |
| F 3/12 | 9b. Groundwater | Groundwater Groundwater Contamination | |
| M 3/15 | 10a. Origin of Oceans/Life/Atmo | | Origins of Oceans, Life, Atmo |
| W 3/17 | 10b. The Atmosphere | Layers of the Atmosphere Simple Atmospheric Circulation | |

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|-----------|---|---|---|
| F 3/19 | 10c. Shallow Ocean | Ocean Surface Circulation | |
| M 3/22 | 11a. Deserts | | Deserts of the World |
| W 3/24 | 11b. Planetary Surfaces | Planet Surface Features | |
| F 3/26 | 11c. Deep Ocean | Ocean Layers | |
| M 3/29 | 12a. The Carbon Cycle | Climate Change and CO ₂ | The Carbon Cycle |
| W 3/31 | 12. Review for Exam 2 | Exam 2 due by Sunday night, Apr 4, at 11:59 PM | |
| F 4/2 | 12. NO CLASS – Reading Day | | |
| M 4/5 | 13a. The Greenhouse Effect and Global Warming | How Greenhouse Effect Works Greenhouse Effect and Global Warming | |
| W 4/7 | 13b. Volcanism and climate | | How Volcanoes Affect Climate |
| F 4/9 | 13c. The Ozone Hole | Greenhouse Effect and the Ozone Hole | |
| M 4/12 | 14a. Alternative Energy | Consequences of Global Warming Alternative Energy | |
| W 4/14 | 14b. Climate Change Info Sources | | |
| F 4/16 | 14c. Glaciers and Ice Sheets | Glacier movement The Glacier Budget | |
| M 4/19 | 15a. Snow and Ice | | Oxygen Isotopes and Albedo |
| W 4/21 | 15. NO CLASS – Reading Day | | |
| F 4/23 | 15b. Population Growth | | Population Growth and Earth's Carrying Capacity |
| M 4/26 | 16a. Evolution | | Natural Selection |
| W 4/28 | 16b. Mass Extinctions | Scientific Hypotheses of Dinosaur Extinctions | |
| F 4/30 | 16c. The Anthropocene | | Predictions for the Global Future |
| M 5/3 | 17. Review for the Final Exam | | |
| W 5/5 | 17. Review for Final Exam | Final Exam due Sunday night (May 9) at 11:59 PM | |

Note: Tutorials are all in the eBook on d2l *Lecture Tutorials for Earth Science* and can be found by typing the name of the tutorial into the search bar at top of table of contents. Activities are posted in weekly work lists on d2l.

Class policies and conduct

All students must be able to engage in learning in a *distraction free* environment, regardless of the environment. When attending Zoom class, please be courteous, attentive, and practice civil discourse. Students who engage in disruptive behavior will be asked to leave Zoom. Thank you.

Tutorials and activities

- Every class will have corresponding tutorial(s) from the tutorial book (*Lecture Tutorials for Earth Science by Kortz and Smay*) and/or activities created by the instructor. All

tutorials are available in the posted eBook, and activities will be posted on d2l in the weekly work lists.

- Tutorials and activities are not turned in or graded but are your study guide for exams. It is imperative that you put your best effort into your tutorials and activities.

Participation

- There will be one participation question per class, posted on d2l. Your three lowest participation scores will drop. Participation points cannot be made up – all participation questions will post on Sunday mornings and will be due by the following Sunday night at 11:59 PM.

Assignments

- Assignments are turned in or completed on d2l for a grade.
- There will be five assignments. Your one lowest assignment grade will drop.
- There are no make ups on assignments as you will have a week to complete them.
- You are encouraged to work with other students on these assignments, but you must submit answers in your own words. There is a difference between collaborating and cheating – if you are unsure about this distinction, please ask me or Nitzan to clarify. Copying another student's answer word for word is cheating and cutting and pasting from the internet is cheating.
- Assignments will post on Sunday mornings and will be due by the following Sunday night at 11:59 PM.

Quizzes

- There will be one quiz per lecture video. Each quiz is five questions or less and is on material from the lecture video it corresponds to.
- All quizzes will post on Sunday mornings and be due by the following Sunday night at 11:59 PM.
- There are no make ups on quizzes, and your three lowest quiz grades will drop.
- You may use your notes and posted class materials to complete quizzes.
- You will have two attempts at every quiz, and the highest score will automatically count.

Exams

- Three exams will be given this semester (see schedule on pages 2-3). Two are midterms and one is a cumulative final exam.
- All exams will be completed on d2l. Exams will post on d2l and be due on that Sunday at 11:59 PM (you will have several days to take the exam).
- Exams will draw heavily from tutorials, activities, and assignments.
- Correspondence with other students is NOT permitted at any time during the exam.
- You can use your own class notes/tutorials/activities when working on your exam, but no online searches are permitted.

Grading Philosophy

- We do not grade on a curve.
- We do not offer make-ups on any graded work as we drop several grades, and you have several days → a week to complete all work at your pace.
- You can check your grades on d2l any time - please check your grades regularly and contact me with any questions or concerns.
- If you have questions about a grade, please raise them within ONE WEEK of the grade being posted on d2l. After one week, no changes will be made.
- No extra credit opportunities will be given at the end of the semester, and no alternative assignments or work will be given to “boost” your grade. Please keep up with weekly work.

Basis for Your Course Grade

Grades are weighted as follows:

| | |
|-----------------------|---|
| Participation | 15% of overall grade (0.43% each, highest 35 count) |
| Quizzes | 20% of overall grade (0.57% each, highest 35 count) |
| Assignments | 30% of overall grade (7.5% each, highest 4 count) |
| Exams | 35% of overall grade (11.66% each, all 3 count) |
| Total possible | 100% |

Note: To get an A in the class you must earn at least 90%. No exceptions.

Your final grade for the course (3 units) is based on the following grand total scores:

≥90% = A ≥80% = B ≥70% = C ≥60% = D less than 60% = E

If you will not be able to complete the work, please drop or withdraw from the class and try again in a future semester. There will be no opportunity for incompletes, or alternatives or make up work after class has ended. The instructor will work with you to find solutions if you have a documented physical/mental health issue during the semester, but this must happen immediately upon issues arising, not at the end of the semester.

Seeking Help

The TA (Nitzan) will hold office hours and review sessions on Zoom - please drop-in any time. Days and times will be posted on d2l. I will meet with students via Zoom by appointment - it is your responsibility to email me or Nitzan to set up individual appointments for help if you need to do so.

Academic Integrity

<http://deanofstudents.arizona.edu/codeofacademicintegrity>

Please read the Code of Academic Integrity at the website provided above.

A student shall be guilty of violating the Code and be subject to penalties if he/she:

- Represents the work of others as his/her own.
- Uses or obtains unauthorized assistance in any academic work.
- Gives unauthorized assistance to another student.
- Modifies, without faculty approval, an examination, paper, record or report for the purpose of obtaining additional credit.
- Turns in work he/she completed, with another students' name on it.

Written assignments/short answers are to be strictly in your own words. Plagiarism is any attempt to present another person's work as your own, including words from a website. Do not cut and paste information from a website! All cases of cheating/plagiarism will be referred to the Dean of Students.

Students with Disabilities:

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let the instructor(s) know so that we can discuss options. You are also encouraged to contact Disability Resources (520) 621-3268 to explore reasonable accommodation. <https://drc.arizona.edu/>

Please note: if you have a disability that requires extra time on exams, this is automatically accommodated when you begin your exam on d2l (you will get your extra time).

Other Sources of Help and Information

- The Department of Geosciences main office is room 208 Gould-Simpson, 621-6000.
- The Geosciences Department website is <http://www.geo.arizona.edu>.

Policy on threatening behavior:

The University seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare. The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one's self. Threatening behavior can harm and disrupt the University, its community and its families.

UArizona COVID Guidelines:

- **Face coverings are required in our classroom:** Per UArizona's **Administrative Directive**, face coverings that cover the nose, mouth, and chin are required to be worn in all learning spaces at the University of Arizona (e.g., in classrooms, laboratories and studios). Any student who violates this directive will be asked to immediately leave the learning space and will be allowed to return only when they are wearing a face covering. Subsequent episodes of noncompliance will result in a Student Code of Conduct complaint being filed with the Dean of Students Office, which may result in sanctions being applied. The student will not be able to return to the learning space until the matter is resolved.
- **Physical distancing is required in our classroom:** During our in-person class meetings, we will respect CDC guidelines, including restricted seating to increase physical distancing and appropriately-worn face coverings. See above for guidelines on face coverings.

NOTICE: ALL CLASS POLICIES ARE SUBJECT TO CHANGE AT ANY TIME. STUDENTS WILL BE NOTIFIED OF ALL SIGNIFICANT CHANGES. CHECK D2L REGULARLY.