

## **GEOS 170A1 Earth: From Birth to Death? Section 001, Fall 2020**

**Instructor: Dr. Jessica Kapp, [jkapp@arizona.edu](mailto:jkapp@arizona.edu)** Office: Gould Simpson 324  
Office Hours: Due to concerns with 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 Assistants:** Nitzan Yanay ([nitzanyanay@email.arizona.edu](mailto:nitzanyanay@email.arizona.edu)); Brandon Levenstein ([blevenstein@email.arizona.edu](mailto:blevenstein@email.arizona.edu)). TAs will hold weekly Zoom office hours. See d2l for details.

**Class (optional) meets M, W, F from 12:00 – 12:50 p.m. on Zoom**

**Join Zoom Meeting using the following link (also found on d2l)**

**<https://arizona.zoom.us/j/95879449995>**

**Please note: If large classes are allowed to resume in-person we will meet in Social Sciences 100 on a staggered schedule (details posted on d2l), and face coverings will be required (see last page of syllabus for UArizona COVID Guidelines).**

President Robbins has issued an Administrative Directive requiring the use of face coverings by everyone on our campuses to promote campus health and safety. The University expects the Wildcat community to demonstrate our core values of Compassion and Integrity by universally complying with the face covering directive.

### **Course Materials and Class Logistics:**

- **Lecture Tutorials for Earth Science, by Kortz and Smay** –If you would like your own copy, they are available in the UA bookstore or on Amazon, but I will post all tutorials on d2l if you prefer to print these out and compile them yourself. It is important that you complete these weekly and keep them on hand for studying – exams draw heavily on tutorials.
- **Access to a computer/tablet and internet** – all class work will be posted and turned in online.
- Class work is posted weekly on d2l – all weekly material posts on Monday mornings and all weekly quizzes, participation, and assignments are 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.
- 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.
- ***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 at your own pace.
- 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.

| <b>Date</b> | <b>Class Topics by Week</b>            | <b>Tutorials/Activities</b>   |
|-------------|--|---|
| M 8/24      | 1. Intro – The Scientist Perspective   |   |
| W 8/26      | 1. Origin of the Universe              | Doppler Shift and Expansion of the Universe                                     |
| F 8/28      | 1. Our Solar System                    | Rocky Inner Planets v. Gaseous Outer Planets (p125)                             |
| M 8/31      | 2. Density and Earth's Layers          | Outer Layers of Earth (p21)   |
| W 9/2       | 2. Minerals and Rocks                  | Rock Categories (p35); The Rock Cycle (p37)                                     |
| F 9/4       | 2. Paradigm Shift: Plate Tectonics     | Continental Drift v. Plate Tectonics  |
| M 9/7       | <b>3. No Class – Labor Day</b>         |   |
| W 9/9       | 3. Plate Tectonics I                   | Tectonic Plates and Boundaries (p5); Seafloor ages (p7)                         |
| F 9/11      | 3. Plate Tectonics II                  | Divergent Boundary Features (p11); Subduction Features (p15)                    |
| M 9/14      | 4. Plate Tectonics III                 | Movement at Convergent Plate Boundaries (p17); Transform Boundaries             |
| W 9/16      | 4. Earthquakes                         | Locations of Earthquakes (p63)  |
| F 9/18      | 4. Seismic Waves and Earth's Interior  | Outer Core (p23)  |
| M 9/21      | 5. Thermodynamics and Melting          | Magma Source Depth (p25)  |
| W 9/23      | 5. Volcanoes                           | Volcano Types (p43)   |
| F 9/25      | 5. Hot Spots                           | Hot Spots (p27)   |
| M 9/28      | 6. Planetary Tectonics/Magmatism       | Volcanoes on Other Planets (p133)   |
| W 9/30      | 6. Tsunamis                            | Tsunamis (p65)  |
| F 10/2      | 6. Review for Exam 1                   | <b>Exam 1 due Sunday night (Oct 4) at 11:59 pm</b>                              |
| M 10/5      | 7. The Water Cycle                     | The Water Cycle; Water Table (p79)  |
| W 10/7      | 7. Earth Surface Processes             | Weathering (p45)  |
| F 10/9      | 7. Landslides                          | Landslides (p67)  |
| M 10/12     | 8. Floods                              | Water Table (p79); Flood Curves (p71)   |
| W 10/14     | 8. Groundwater                         | Groundwater (p75); Groundwater Contamination (p81)                              |
| F 10/16     | 8. Origin of Oceans/Life/Atmo          | Origin of Oceans, Life, and Atmosphere  |
| M 10/19     | 9. The Atmosphere                      | Layers of the Atmosphere (p163); Simple Atmospheric Circulation (p165)          |
| W 10/21     | 9. Shallow Ocean                       | Ocean surface circulation (p145)  |
| F 10/23     | 9. Deserts                             | Deserts of the World  |
| M 10/26     | 10. Planetary Surfaces                 | Planet Surface Features (p137)  |
| W 10/28     | 10. Deep Ocean                         | Ocean Layers (p149)   |
| F 10/30     | 10. The Carbon Cycle                   | The Carbon Cycle; Climate Change and CO2 (p171)                                 |
| M 11/2      | 11. The Greenhouse Effect              | How Greenhouse Effect Works (p173); Greenhouse Effect and Global Warming (p175) |
| W 11/4      | 11. Volcanism and climate              | How Volcanoes Affect Climate  |
| F 11/6      | 11. Glaciers and Ice Sheets            | Glacier movement (p83); The glacier budget (p85)                                |
| M 11/9      | 12. Snow and Ice                       | Oxygen Isotopes; Albedo   |
| W 11/11     | <b>12. No Class – Veterans Day</b>     |   |
| F 11/13     | 12. Review for Exam 2                  | <b>Exam 2 due Sunday night (Nov 15) at 11:59 PM</b>                             |
| M 11/16     | 13. The Ozone Hole                     | Greenhouse Effect and the Ozone Hole (p177)                                     |
| W 11/18     | 13. Alternative Energy                 | Consequences of Global Warming (p179); Alt Energy (p181)                        |
| F 11/20     | 13. Climate Change Info Sources        | Source Review (websites, articles, etc.)  |
| M 11/23     | <b>14. No Class-Happy Thanksgiving</b> |   |
| W 11/25     | <b>14. No Class-Happy Thanksgiving</b> |   |
| F 11/27     | <b>14. No Class-Happy Thanksgiving</b> |   |
| M 11/30     | 15. Population Growth                  | Population Growth and Earth's Carrying Capacity                                 |
| W 12/2      | 15. Evolution                          | Natural Selection   |
| F 12/4      | 15. Mass Extinctions                   | Scientific Hypotheses of Dinosaur Extinction (p87)                              |
| M 12/7      | 16. The Anthropocene                   | Predictions for the Global Future   |
| W 12/9      | 16. Review for <b>Final Exam</b>       | <b>Final Exam due Sunday night (Dec 11) at 11:59 PM</b>                         |

Note: page numbers in the Tutorial/Activity column are the start pages for tutorials in *Lecture Tutorials for Introductory Earth Science by Kortz and Smay*. These are also posted 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 class, either in person or on Zoom, please be courteous, attentive, and practice civil discourse. Students who engage in disruptive behavior will be asked to leave class/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 and activities will be posted on d2l. Students may purchase their own tutorial book if they prefer, at UA Bookstore or on Amazon.
- 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 four lowest participation scores will drop. Participation points cannot be made up – all participation questions will post on Monday mornings and will be due by the following Sunday night at 11:59 PM.

## **Assignments**

- Assignments are online exercises that are turned in on d2l for a grade. They may include drawing/labeling diagrams, short answers, multiple choice, true/false, matching, and other types of questions. They are meant to be review of the material we have covered in class, and to help you prepare for upcoming exams. There will be five assignments - we drop your one lowest assignment grade. 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 an instructor or TA 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 Monday mornings and will be due by the following Sunday night at 11:59 PM.

## **Quizzes**

- There will be one quiz per class, posted on d2l. Each quiz is five questions or less, and is on material from the class it corresponds to.
- All quizzes will post on Monday mornings and be due by the following Sunday night at 11:59 PM.
- There are no make ups on quizzes, and your four 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 page 2). Two are midterms and one is a non-cumulative final exam.
- All exams will be completed on d2l under “quizzes.” Exams will post on the Friday at 1 pm and be due on that Sunday at 11:59 PM (you will have ~59 hours to take the exam).
- Once exam grades are posted on d2l you have one week to question or dispute your grade with the instructor. After one week, no grade changes will be made.
- Exams will draw heavily from tutorials, activities, and assignments.
- Be sure to read and follow all instructions on the exam carefully.
- No books or notes are to be opened at any time during the exam.

## 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 the instructor 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)     |
| <hr/> 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 TAs will hold office hours and review sessions on Zoom, and you can drop-in to these any time. Days and times will be posted on d2l. Instructor will meet with students via Zoom by appointment - it is your responsibility to email the instructor to set up an appointment for help.

## 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 as all exams will be available for ~59 hours. Exams are written to take about one hour to complete.

### **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.