

# COURSE OVERVIEW AND SYLLABUS

## GEL 1: THE EARTH, WINTER 2019

Professor: Dylan Spaulding

Email: [dkspaulding@ucdavis.edu](mailto:dkspaulding@ucdavis.edu)

Dept. of Earth & Planetary Sciences

Office hours: Mon 1:00-2:00pm & Fri 2:00-3:00pm in Physics 185 (or email for an alternate time).

Lecture: Max Kleiber Hall 3, Monday, Wednesday and Friday 12:10 – 1:00 pm

GEL 1 qualifies for GE credit in Science & Engineering topical breadth as well as GE credit in Scientific Literacy.

### TEACHING ASSISTANTS AND DISCUSSION SECTIONS:

A01	Mon., 11:00 – 11:50am	Jon Richey	<a href="mailto:jdrichey@ucdavis.edu">jdrichey@ucdavis.edu</a>	EPS 1316
A02	Thurs., 10:00 – 10:50 am	Jon Richey	<a href="mailto:jdrichey@ucdavis.edu">jdrichey@ucdavis.edu</a>	EPS 1348
A03	Thurs., 12:10 – 1:00 pm	George Snyder	<a href="mailto:grsnyder@ucdavis.edu">grsnyder@ucdavis.edu</a>	EPS 1316
A04	Tues., 12:10 – 1:00 pm	Supratim Dey	<a href="mailto:supdey@ucdavis.edu">supdey@ucdavis.edu</a>	EPS 1316
A05	Wed., 11:00 – 11:50 am	Alba Rodriguez Padilla	<a href="mailto:arodriguezpadilla@ucdavis.edu">arodriguezpadilla@ucdavis.edu</a>	EPS 1316
A06	Mon., 10:00 – 10:50 am	Kaitlyn Amodeo	<a href="mailto:kamodeo@ucdavis.edu">kamodeo@ucdavis.edu</a>	EPS 1316
A07	Tues., 10:00 – 10:50 am	Alba Rodriguez Padilla	<a href="mailto:arodriguezpadilla@ucdavis.edu">arodriguezpadilla@ucdavis.edu</a>	EPS 1348

### GOAL OF THE COURSE:

To get you to view the world like a geologist and introduce you to the concepts underpinning the origin and evolution of our planet. An introduction to Earth's history will provide context for environmental issues, energy problems, and ongoing global change that we'll all be dealing with for the foreseeable future. You should come to appreciate the importance of 'scale', particularly in thinking about 'Deep Time' and the rate of change in various Earth processes. This will hopefully give you a new appreciation for humanity's relationship to our environment. The societal relevance of geology will become evident as we discuss natural disasters (earthquakes, volcanoes, tsunamis, floods), economic resources (water, fossil fuels, minerals) and our influence on the Earth (climate change).

### TEXTBOOK AND NOTES:

We will be using *Physical Geology Today* (2016, 1st ed.), By Nance & Murphy.

You can find this book in the campus bookstore or on Amazon. It is also available as an e-Book with "try-before-you-buy" access through the course Canvas site. To access the E-Book, click on the link in the Modules tab in Canvas or use the login info you should receive in an email from [redshelf.com](http://redshelf.com). If you opt-in to the e-Book you will have until the 12th day of instruction to opt back out before the access charge is billed to your campus account. Please contact [inclusiveaccess@ucdavis.com](mailto:inclusiveaccess@ucdavis.com) with questions about this purchasing option. Ultimately, you may choose the option that works best for you. While it's not the cheapest, many students prefer the hard-copy for studying. I've also placed a copy on reserve at Shields library that you can check out for 2 hours at a time if you're in a pinch.

*Don't panic! We will NOT be going through the whole book!!* I will give you specific sections to read and it's important that you read strategically! Although the lectures and notes will closely

follow the material in the book, you can't just substitute one for the other. You will need to synthesize what's in all three. This textbook is profusely illustrated - just viewing the graphics in the book in coordination with the lecture will bring the topic to life and help you better understand the material. Read it selectively. I'll show you how to use the book efficiently in class.

PDF outlines of notes for each unit in the course will be posted in the 'Files' link on the Canvas site close to the actual time of the topic. They are relatively comprehensive but ***they will help you far more if you annotate them with your own notes, sketches and comments.*** Use them to study for exams, but add to them from the lectures and the textbook reading as you see fit.

### **CLASS STRUCTURE:**

Come to class!! My goal is for this class to be fun, interesting and as participatory as possible. It will ultimately be faster, more efficient and educational for you to come listen to one hour of lecture rather than skipping it and then counting on teaching yourself the material from the book. This course will be dynamic, and *not everything you need will necessarily be in the notes.* Come to class. Ask questions. Have fun. In return, I promise to make it worth your while!

This is a big class, but I strongly encourage you to speak up in class - any question is legitimate and I promise that if you ask it, I'll take the time to answer it.

Although we live in a world of electronic convenience, I want to ask you to consider limiting your use of laptops, tablets and cell phones while you're in class. Using them to take notes is fine, but if it's not course-related (Facebook, email etc.), chances are it's going to make it harder for you to learn and be distracting for your neighbors. Be considerate! Be present!

### **DISCUSSION:**

The lecture and discussion topics are purposefully decoupled. Discussion is not meant to simply review the lecture but to add to it in practical and active ways. Discussion and lecture will complement each other and help give you a broader understanding of the breadth of geology.

Materials that you will need for discussion can be found on Canvas under 'Files – Discussion Sections'. The TAs will go over discussion topics & assignments with you each week and remind you of upcoming deadlines and I will send out regular announcements to give you a heads up when something new is posted or if anything changes.

Please go to the section that you signed up for! The discussion is worth 20% of the overall class grade, so it is important to attend and participate in the activities. Obviously, we will try to work around legitimate absences or special circumstances, but you need to work those out *in advance* with me and with your TA.

The discussion sections are intended to be straightforward and relevant. Learn your TA's name and get to know them personally – they're all willing to help if you ask (and so am I)!

**READING ASSIGNMENTS:**

We'll try to stay as close to this schedule as possible, but be ready for evolving dates and topics (except for exams, of course).

<b>Week of:</b>	<b>Lecture Topic:</b>	<b>Textbook</b>
Jan 7 - Jan 11	Introduction; Foundations; Building the Earth and Exoplanets	Sections 1.6-1.9
Jan 14 - Jan 18	Building the Earth (cont.); Plate Tectonics: Part I - Making and Breaking Continents	2.1 - 2.5
Jan 21 - Jan 25	Plate Tectonics: Part II - The Dynamic Earth	9.3 - 9.8
Jan 28 - Feb 1	Minerals and Rocks: Atomic to Planetary Scale	3.2, 3.6, 3.7
Feb 4 - Feb 8	Deep Beneath Volcanoes	4.1 - 4.3, 9.2
Feb 8	Midterm (50 minutes, in class, bring Scantron 2000)	
Feb 11 - Feb 15	Volcanism - Igneous Processes	4.6 - 4.7
Feb 18 - Feb 22	Earthquakes & Earth's Interior	11.1-11.5
Feb 25 - Mar 1	Telling Time: Sedimentation, Age Dating	6.1-6, 8.1, 8.3, 8.5-8.9
Mar 4 - Mar 8	End of the Oil Age?	19.1-19.3
Mar 11 - Mar 15	Global Change and the Anthropocene	15.1, 15.4, 20.1-20.5, 20.8
March 22	Final Exam – 1:00-4:00 PM (cumulative, bring Scantron 2000)	

**HONESTY AND ACADEMIC CONDUCT:**

All students are expected to abide by the UCD code of academic conduct. Cases of plagiarism or cheating *will* be reported to Student Judicial Affairs. You don't want that and neither do I, so please act responsibly. A copy of the 'Code of Academic Conduct' and a document that reviews what *is* and *isn't* plagiarism is posted in a folder called 'Academic Conduct' in the 'Files' link on Canvas. Please review them, even if you think you know what's in there!

**EXAMS & GRADING:**

HOMEWORK/ASSIGNMENTS (Mostly online exercises and including three, short ~1-2 page written assignments) = 30%

DISCUSSION SECTIONS (participation ~10%, discussion exercises ~10%) = 20%

MIDTERM (Friday, February 8<sup>th</sup>, in class, bring a scantron) = 20%

FINAL (Cumulative, Friday, March 22<sup>nd</sup>, 1:00 - 4:00 pm, bring a scantron) = 30%

Exams will be multiple choice. Be forewarned, the questions will be based directly on the notes, lectures and reading but will be designed to make you think- not just regurgitate specific phrases or facts. NO EARLY EXAMS OR MAKEUP EXAMS except under *truly* exceptional circumstances, which you will need to justify.

Late work will generally not be accepted unless you've made arrangements ahead of time for justified reasons.