

**Instructor: William Frank**

**Office: ZHS 103**

**Office Hours: Mo 8:30-9:30AM/We 1-2PM**

**Contact Info:** If you have in-depth questions related to class content, you will probably find it most effective to ask me in person, either immediately after lecture or lab or during office hours held by me or one of our TAs. If you are systematically unavailable during office hours due to a scheduling conflict, I am also available by appointment. When all else fails, my e-mail is [wbf Frank@usc.edu](mailto:wbf Frank@usc.edu); please include GEOL105 in the subject.

**TAs:**

Name	Emily Tibbett	Mathilde Wimez	Bruce Zhou	Kiersten Formoso	Nathan Carroll
E-mail (@usc.edu)	tibbett	wimez	zhou226	formoso	nrcarrol

### Course Description

Welcome to GEOL105, "Planet Earth." This course provides an introduction for non-geologists and non-scientists to the inner workings, origin, and history of our dynamic planet. We will learn how the Earth's internal heat drives the engine that builds mountains, moves the continents, creates the ocean basins, and produces earthquakes and volcanoes. We examine the way the circulation of the atmosphere and hydrosphere are driven by solar energy, and interact with the solid Earth to produce landscapes, erode and deposit sediment, and create environments for life and evolution. We investigate the techniques by which we can image the Earth's interior, track plate motion, and infer how the planet has evolved through time. Each step of the way we ask ourselves how we know what we know, what we don't know, and how we use the scientific method to test and validate hypotheses. This syllabus outlines the contacts, requirements, and schedule for the course. Additional information will be posted on Blackboard as needed.

### Learning Objectives

After taking this course, a student will be able to:

- understand the scientific process from observation to theory in the Earth sciences
- see that individual Earth systems are not isolated and an impact on one, impacts all other Earth systems
- evaluate topical current events in light of our Earth system

### Recommended Reading

Course will roughly follow the material in *Understanding Earth*, by John Grotzinger and Tom Jordan (W.H. Freeman and Company), ISBN: 978-1-4292-1951-8. Any recent edition (>6e) should contain the material we will cover. The chapters in *Understanding Earth* that cover the material presented during each lecture are listed in the weekly schedule.

### Grades

Student grades are based on the cumulative score across five grade elements: laboratory work, in-class quizzes, two mid-term exams, and a final exam. The breakdown of the total number of points that can be earned are shown in the table to the right.

### Lab

Lab will start the second week of class. Your TA will provide you the lab syllabus on your first day of lab.

Grade element	Max points
Laboratory work	220
In-class quizzes	100
Midterm exam 1	80
Midterm exam 2	80
Final exam	120
<b>Total</b>	<b>600</b>

## Quiz questions (via TopHat)

We will be using the Top Hat ([www.tophat.com](http://www.tophat.com)) classroom response system in lecture, *starting week 2*. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website: <https://app.tophat.com/e/906205> (NB: our course join code is **906205**). **You must use your USC e-mail to register!**

We will be using *TopHat Classroom* ([www.tophat.com/pricing](http://www.tophat.com/pricing)), which is \$26 for one semester and covers all of your classes that use TopHat during this semester (i.e. if you already have a class that is using TopHat, there is no need to make a second account). TopHat can be purchased online (<https://app.tophat.com/register/>), but you can also purchase it at the USC Bookstore. Note that it will only be available at the USC Bookstore towards the end of week 1.

Any financial aid that covers regular textbooks also covers TopHat. To purchase TopHat with financial aid, please go to the USC Bookstore on campus.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email ([support@tophat.com](mailto:support@tophat.com)), the in app support button, or by calling 1 (888) 663-5491.

During every Tuesday lecture there will be several questions that cover material from previous lectures. As noted in the grade breakdown above, these quiz questions will represent 100 points (1/6<sup>th</sup>) of your total grade. You will receive 40% credit of each question by participating; you will receive the other 60% if you answer the question correctly. The questions will be similar in style to the questions that will be asked on the midterm and final exams, and are intended to help prepare you for the mid-term and final exams.

Due to the nature of TopHat, there is no way to make-up missed quiz questions. To account for this, everyone's quiz grade will be graded with a 10% leeway. This means that your quiz grade will be graded out of 90% of the total points; any extra points are yours to keep as extra credit.

## Exams

The three examinations will evaluate student comprehension of material covered in lectures. When each exam will take place and what material it will cover is as follows:

- Midterm exam 1 will be given in class on Sep 20<sup>th</sup>; it will cover the material presented in lectures from the start of the class through Sep 18<sup>th</sup>.
- Midterm exam 2 will be given in class on Oct 25<sup>th</sup>; it will cover the lectures from Sep 25<sup>th</sup> through Oct 23<sup>rd</sup>.
- Final exam will be given on Dec 6<sup>th</sup> at 11AM-1PM; it will principally cover lectures from Oct 30<sup>th</sup> to the end of the class, but there will also be a section that covers material from previous mid-term exams.

## Doing well in the class

Quizzes and lab make up an important part of your grade. If you want to do well on the exams, you are encouraged to attend class faithfully, take notes in class, and review the lectures slides. Pdf versions of the lecture slides will be posted on Blackboard. All exams will be a combination of true/false and multiple choice questions, and grading will be done using Scantrons.

## Assignment of Final Grades

Each student will receive a final grade (including third letter grades, like A- or C+) based on their scores out of the total number of points possible (600 points). The grading curve will have an approximate distribution as follows:

Grade	A	B	C	D
Percentage of total enrollment	20%	40%	30%	10%

***The curve will only ever increase your grade.*** For example: an 80% will never be anything less than a B-; depending on the curve, a 77% C+ could be bumped up to a B-. This curve will be determined once all exams, quizzes, and lab work has been completed.

Pass/No Pass: the cut-off for Pass/No Pass is anything greater or equal to a C- letter grade. Additionally, more than three lab absences will result in an automatic no pass.

## Extra Credit

Students can earn extra credit for participation in JEP (Joint Educational Project). JEP will be presented by one of their representatives during the first or second week of the semester. There is limited space and the sign-up deadline is relatively early in the semester. The credit will be added to your grade after the class grades are curved, and the increase in grade will be one-third of a grade step (i.e. from a B+ to an A-).

The only other opportunity for extra credit is a 2-page essay. This opportunity will be made available to all students during the last third of the class (after the second mid-term but before the final exam). The subject of the essay and its format will be announced in lecture and posted on blackboard. The essay will be graded on a credit/no-credit basis. If the essay is satisfactory, this will provide a one-third letter grade boost after the curve (i.e. from a B+ to an A-).

No other extra credit opportunities will be available.

## Make-ups

If you have to miss an exam or quiz because of illness or an academic conflict, you must inform the instructor by email as soon as possible, and provide documentation. Make-ups of examinations will, in general, NOT be permitted except for extraordinary circumstances (e.g., documentable conflicts with other USC-related commitments).

## Disability Services

Students requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to an instructor as early in the semester as possible. DSP is located in Grace Ford Salvatori Hall, 120, and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number is (213) 740-0776; email is [ability@usc.edu](mailto:ability@usc.edu). The website is [dsp.usc.edu](http://dsp.usc.edu).

## Weekly Course Schedule

	Tuesday	Thursday	Related Chapter in Understanding
Week 1	Aug 21: Intro to GEOL105 and the scientific method	Aug 23: The Earth system	Ch. 1
Week 2	Aug 28: Plate tectonics (QUIZ)	Aug 30: Plate tectonics	Ch. 2
Week 3	Sep 4: Earth Materials (QUIZ)	Sep 6: Igneous/ meta-morphic rocks	Ch. 3, 4, 6
Week 4	Sep 11: Sedimentary rocks (QUIZ)	Sep 13: Deforming rocks	Ch. 5, 7
Week 5	Sep 18: Geologic time (QUIZ)	<b>Sep 20: Midterm exam 1</b>	Ch. 8, 9
Week 6	Sep 25: Evolution of the continents (QUIZ)	Sep 27: Origin of Earth and the solar system	Ch. 10
Week 7	Oct 2: Biosphere and the Earth system (QUIZ)	Oct 4: History of life	Ch. 11
Week 8	Oct 9: Volcanoes (QUIZ)	Oct 11: Volcanic hazard	Ch. 12
Week 9	Oct 16: Earthquakes (QUIZ)	Oct 18: Earthquake hazard	Ch. 13
Week 10	Oct 23: Exploring the Earth's interior (QUIZ)	<b>Oct 25: Midterm exam 2</b>	Ch. 14, 16
Week 11	Oct 30: Weathering, mass wasting (QUIZ)	Nov 1: Climate system and wind transport	Ch. 16
Week 12	Nov 6: Hydrologic cycle (QUIZ)	Nov 8: Streams, rivers and glaciers	Ch. 15, 18
Week 13	Nov 13: Coastlines and oceans (QUIZ)	Nov 15: Continental margins and landscaping	Ch. 17, 19
Week 14	Nov 20: Natural resources (QUIZ)	<b>Thanksgiving</b>	Ch. 20, 21
Week 15	Nov 27: Human impact on the Earth system (QUIZ)	Nov 29: Review session	Ch. 23
Final	<b>Dec 6: Final exam 11AM–1PM</b>		

## **Academic Conduct:**

Plagiarism - presenting someone else's ideas as your own, either verbatim or recast in your own words - is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

## **Support Systems:**

*Student Counseling Services (SCS) - (213) 740-7711 - 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. [engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

*National Suicide Prevention Lifeline - 1 (800) 273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [engemannshc.usc.edu/rsvp](http://engemannshc.usc.edu/rsvp)

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: [sarc.usc.edu](http://sarc.usc.edu)

*Office of Equity and Diversity (OED)/Title IX Compliance - (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. [equity.usc.edu](http://equity.usc.edu)

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. [studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. [dsp.usc.edu](http://dsp.usc.edu)

*Student Support and Advocacy - (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. [studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. [diversity.usc.edu](http://diversity.usc.edu)

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. [emergency.usc.edu](http://emergency.usc.edu)

*USC Department of Public Safety - UPC: (213) 740-4321 - HSC: (323) 442-1000 - 24-hour emergency or to report a crime.*

Provides overall safety to USC community. [dps.usc.edu](http://dps.usc.edu)