

Geology 105 – Earth “Our Habitable Planet”

Indiana University – Spring 2013

Class Meetings: 2:30–3:20 p.m., Monday and Wednesday, Geology 126

Instructor: Dr. Cody Kirkpatrick (codykirk@indiana.edu)

Office: MSB-II, Room 304

Office Hours: M & W, 10 a.m.–noon

Telephone: (812) 855-3481

*If these office hours are not convenient, **let me know** and we can make an appointment for another time.*

Associate Instructors

Agnieszka Furmann (afurmann@indiana.edu)

Allen Quaderer (aquadere@indiana.edu)

Required Materials

The Blue Planet: An Introduction to Earth System Science, Third Edition, by Skinner and Murck. Previous editions are not acceptable—I do not have an older copy, so use these at your own risk.

Lab exercises will be posted online each week by the Associate Instructors. You should download and print each exercise before coming to lab. (Copies will not be available at the lab meeting.)

Course Goal

Students who participate in the course fully will be able to describe the components of the Earth system and summarize the relationships between them, imparting an appreciation for the complexity of the Earth system and its impact on our lives.

In G105, students are introduced to the fundamental components of the Earth system and the principles by which it operates. By the end of the course, students will be able to list and describe the different spheres of the Earth system and their fundamental properties, phenomena, and processes. Students will also be able to apply this knowledge to demonstrate the critical thinking and problem-solving skills that are expected in an introductory course at IU.

Lab Sessions

The lab portion of the course meets weekly on Tuesday. Your Associate Instructor will provide you with additional information about the lab sessions. Here, I can say that seats in the lab room are very limited, so you are expected to attend the section in which you enrolled.

Sec. 42 10:10 a.m.–12:05 p.m. Tuesday, GY 220

Sec. 44 3:35–5:30 p.m. Tuesday, GY 220

Sec. 43 12:20–2:15 p.m. Tuesday, GY 220

Sec. 45 5:45–7:45 p.m. Tuesday, GY 220

Course Grades

Exam 1 (Monday, February 11 , at the usual class time)	20%
Exam 2 (Monday, March 25 , at the usual class time)	20%
Comprehensive Final Exam (Monday, April 29, 10:15 a.m.)	20%
Total lab grade	25%
Warm-up questions and occasional “quiz” questions	15%

Exams will be mostly multiple choice/matching/fill-in-the-blank, but there may be a few short answer and discussion questions.

The lab grade will be comprised of assignments, a semester project, and an exam. Your total lab grade will be reported to me by your Associate Instructor. **You must obtain a passing grade in the lab to obtain a passing grade in the course.**

All exams will be held in the usual classroom. “Scantron” forms will be provided. Make-up exams are permitted only after written documentation (note from the clinic, approved University absence, etc.) and may be substantially different from the exam given at the usual class time (one possibility: 50-minute oral exam standing in front of the whiteboard). Final exam absences will follow IU policy. The final exam is comprehensive.

Weekly reading assignments from the textbook are required for success in G105. Our class time will not be spent rehashing the reading—instead, our in-class discussions will build upon it. Prior to almost every class, I will ask you to complete (via the web) two or three **short warm-up questions** about the upcoming class discussion. These questions are designed to get you thinking about the day’s topic so that the in-class conversation will be a little more lively. Questions will be posted 24 hours prior to class, and you will have until 1 p.m. the day of class to complete them. Most every day, if you answer them—and write something beyond “I don’t know”—you will get credit. Because we will do this almost every class period, there are no “drops” or “make-ups” for missed questions. *These start on Wednesday, January 9.* Six (unannounced) times during the semester, I will also ask questions that will be graded for accuracy. We may also do some similar questions in class. Most of you would call that a “**quiz**,” so that’s the word I’ll use also.

Your grade for the warm-up/quiz part of the course will be simple: total points earned divided by total points possible. For example, completing all of each day’s warm-up questions will be worth 1 point. When graded for accuracy, that will be worth one additional point. Each quiz question would be worth one point. And so on, and so on.

Working Together

You are strongly encouraged to discuss course material with your classmates. Warm-up questions, lab exercises, and studying for exams are all fair game. Science is a collaborative subject—and working with other scientists is what I do every day! Sharing ideas and asking questions of one another is something I hope you will do, and will find helpful. But keep in mind, unless specifically told otherwise, **you must submit your own answers** to all assignments.

Reasonable Accommodation

It is the policy of Indiana University to provide reasonable accommodations or academic adjustments as needed. These accommodations and adjustments will be made in a timely manner and on an individualized and flexible basis. Please review the University's ADA Policy and/or come speak to me so we can make the necessary arrangements. I am happy to help.

Cancellations

If class is canceled by the University for any reason, all due dates—including exams—will be moved to the following class period.

Classroom Conduct

I have no problem with you bringing laptops, iPads, or whatever to class, as long as you are using them for a classroom purpose. Texting the girlfriend or watching football highlights on ESPN usually won't qualify. If I find students abusing this policy, I reserve the right to ask you to leave class for the day, to ban individuals from using these devices, to ban certain devices, or to ban them entirely. "Please use responsibly." Please do not answer your phone while sitting in class—I won't answer mine while standing at the front.

Also, let's please all use common sense about ringtones, headphones, and so on...

Academic Dishonesty

As members of the IU community, we are all directly affected by the "Indiana University Code of Student Rights, Responsibilities, and Conduct". The code is accessible at <http://www.iu.edu/~code/>. Cheating and plagiarism will not be tolerated under any circumstance. Don't do it.

Complaint Procedure

If you have difficulties or complaints related to this course, your first action usually should be to discuss them with me. If such a discussion would be uncomfortable for you or fails to resolve your difficulties, you should contact Professor Pratt, Chair of the Department of Geological Sciences. Professor Pratt's office is in the Geology Building, Room 125. If you still are unsatisfied, you should discuss the matter with Professor Singell, Dean of the College of Arts and Sciences. Professor Singell's office is in Kirkwood Hall, Room 104.

Disclaimer

In cases of *force majeure*, I reserve the right to deviate from this syllabus. I will notify you as soon as I realize this is necessary, and I will document all changes with both the department and the Dean's office.

Motivation

I will try to make sure that everything we do in G105 keeps the course goal in mind (it's on the first page of the syllabus). With that, this question frequently comes up:

What are some of the specific properties, phenomena, and processes I will learn about?

- What are the basic components of the Earth system, and why do I care
- How do scientists use data and observations to come to conclusions?
- The variety of ways that objects can exchange energy and heat
- Where the energy and heat we experience here on Earth comes from
- What are continents and tectonic plates, how do they move, and why do I care
- The causes, effects, outcomes, and prediction of earthquakes and volcanoes
- Where mountains come from, and why they eventually disappear
- How water, in all its phases, is critical for every aspect of life on earth
- The causes and effects of ocean waves, currents, tides, and tsunamis
- How our atmosphere promotes life on earth
- Why air moves, and where it (usually) moves and what it does when it gets there
- Earth's past, present, and possible future climate
- How "life" on earth arose and what is needed for a place to support living organisms
- Where on earth "life" is supported, what kinds of life are supported there, and why
- How we as humans interact with and can affect the components of the Earth system