

Term Information

Effective Term Autumn 2021
Previous Value Spring 2020

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

(1) We propose to REMOVE the lab from the class, dropping credits from 4 to 3. Paired with this proposal is GE approval for the existing EarthSc 1200 1-credit lab class so that students taking both ES 1121 and ES 1200 will receive the same credit they would have (Physical Science GE with lab) as in the existing format of the course.

(2) Add the option to offer the course as DL

What is the rationale for the proposed change(s)?

(1) (a) To add flexibility for students to enroll in lab in the same or subsequent semester; (b) to permit students with transfer credit for a lecture-based course to take the lab without the 3 credits of repeated content; (c) the lab and lecture portions of the course have been running more or less independently of one another, so this separation clarifies expectations for students.

(2) To permit teaching the course online.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

We will need to ensure that advisors are apprised of the changes so that students do not miss enrolling in the lab. (We also intend to schedule some 7W2 sections of ES1200 to catch students who miss this point before the start of the semester.) Otherwise, this only adds flexibility for students.

Is approval of the request contingent upon the approval of other course or curricular program request? Yes

Please identify the pending request and explain its relationship to the proposed changes(s) for this course (e.g. cross listed courses, new or revised program)

GE approval of EarthSc 1200. Otherwise, students will not have the GE credit they need for the lab, leaving them no way to earn the GE lab credit needed for graduation.

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Earth Sciences
Fiscal Unit/Academic Org	School of Earth Sciences - D0656
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	1121
Course Title	The Dynamic Earth
Transcript Abbreviation	Dynamic Earth
Course Description	This course introduces students to earth sciences. Topics include the structure and composition of the earth, plate tectonics, rock cycle, water cycle, energy and mineral resources, and climate change. Students will understand the processes that shape the earth and influence our daily lives.
<i>Previous Value</i>	<i>Plate tectonics; rock forming processes; climate change; energy resources.</i>
Semester Credit Hours/Units	Fixed: 3
<i>Previous Value</i>	<i>Fixed: 4</i>

Offering Information

Length Of Course	14 Week, 12 Week, 8 Week, 7 Week, 6 Week
Flexibly Scheduled Course	Sometimes
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance
<i>Previous Value</i>	<i>No</i>
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
<i>Previous Value</i>	<i>Laboratory, Lecture</i>
Grade Roster Component	Lecture
Credit Available by Exam	Yes
Exam Type	EM Tests via Office of Testing
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus, Lima, Mansfield, Marion, Newark

Prerequisites and Exclusions

Prerequisites/Corequisites	Prereq: Math 1075 or above, or ACT Mathematics Subscore of 22 or higher, or Math Placement Level R or better.
Exclusions	Not open to students with credit for 1100.
Electronically Enforced	Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	40.0601
Subsidy Level	General Studies Course
Intended Rank	Freshman
<i>Previous Value</i>	<i>Freshman, Sophomore, Junior, Senior</i>

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors
General Education course:
Physical Science; Natural Sciences
The course is an elective (for this or other units) or is a service course for other units

Previous Value

Required for this unit's degrees, majors, and/or minors
General Education course:
Physical Science
The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Students understand the fundamental processes and effects of plate tectonics, rock formation, climate change, and energy resource formation and development.

Content Topic List

- Plate tectonics
- Rock forming processes
- Earthquakes
- Volcanoes
- Oil, natural gas, coal
- Climate change
- Surficial processes

Sought Concurrence

No

Attachments

- ES 1121.docx: ASC DL approval
(Other Supporting Documentation. Owner: Panero,Wendy R)
- ES1121-P_no_lab.docx: syllabus -in person
(Syllabus. Owner: Panero,Wendy R)
- ES1121-DL_no lab.docx: syllabus - DL
(Syllabus. Owner: Panero,Wendy R)
- ES1121-P_with lab.docx: Prior syllabus (with lab)
(Syllabus. Owner: Panero,Wendy R)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Panero,Wendy R	01/15/2021 01:38 PM	Submitted for Approval
Approved	Panero,Wendy R	01/15/2021 01:59 PM	Unit Approval
Approved	Haddad,Deborah Moore	01/15/2021 05:29 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Hilty,Michael Vankeerbergen,Bernadette Chantal	01/15/2021 05:29 PM	ASCCAO Approval

ES 1121 Syllabus

The Dynamic Earth

[ES1121] [Autumn 2021]

Course Information

- **Course times and location:** MWF 9:00 a.m.-9:55 a.m. in Zoom
- **Credit hours:** 3
- **Mode of delivery:** Distance Learning

Instructor

- **Name:** Audrey Sawyer
- **Email:** sawyer.143@osu.edu
- **Office location:** 202 Orton Hall
- **Office hours:** Tuesdays and Thursdays 10:20 a.m.-11:15 a.m. via Zoom
 - Use the Zoom link on Carmen
- **Preferred means of communication:**
 - My preferred method of communication for questions is **email**.
 - My class-wide communications will be sent through the Announcements tool in CarmenCanvas. Please check your [notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Teaching Assistant

- **Name:** TBD
- **Email:** TBD
- **Recitation times:** TBD

Course Prerequisites

None



Course Description

This course introduces students to earth sciences, also known as geological sciences. Topics include the structure and composition of the earth, plate tectonics, rock cycle, water cycle, energy and mineral resources, and climate change. Students will understand the processes that shape the earth and influence our daily lives (the availability of energy, water, and mineral resources that we depend on and the hazards of earthquakes, volcanoes, and water).

Learning Outcomes

By the end of this course, students should successfully be able to:

- Explain the concept of plate tectonics and understand hazards such as earthquakes and volcanoes and why they happen where they do.
- Understand the processes that form earth's energy and mineral resources, timescales, and how we can more sustainably produce these resources.
- Explain climate change to their friends and family and address common misconceptions about it.

General Education Expected Learning Outcomes

As part of the Natural Science category in the General Education curriculum, this course is designed to prepare students to be able to do the following:

- understand the basic facts, principles, theories and methods of modern science.
- understand key events in the development of science and recognize that science is an evolving body of knowledge.
- describe the inter-dependence of scientific and technological developments.
- recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

This is how this course fulfills these Learning Outcomes:

Earth sciences are now at the forefront of societies concerns. Global warming, how much oil is available, water resources, and natural hazards are just a few of these concerns. In this course, we will first learn the fundamentals and then use these to examine a number of these concerns. Fundamentals include plate tectonics, how rocks are formed, and geodynamics. These are then used to understand why earthquakes occur, the water and climate cycles, and natural resources.

To earn physical science GE credit with lab:

You must enroll in the separate, 1 credit, Earth Science 1200 course "Introduction to Earth Science Laboratory." You may complete the lab either during this term or during a subsequent term. All tested content of this class is based on material from this class and does not require

the laboratory. Completing the laboratory class during this semester will, however, strengthen and deepen your understanding of many of the concepts, and I therefore strongly recommend you enroll in Earth Science 1200 concurrently.

How This Online Course Works

Mode of delivery: This course is 100% online. Please keep your microphone muted to improve connection performance. I will monitor the chat box for questions and will also solicit questions or responses frequently.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a 3 credit-hour course. According to [Ohio State bylaws on instruction](https://go.osu.edu/credithours) (go.osu.edu/credithours), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and quiz preparation, for example) to receive a grade of C average.

Attendance and participation requirements: Live attendance for lectures is encouraged but not required, as I realize that many of our schedules are impacted by changes in childcare, work schedules, and factors beyond our control. I will record lectures on Zoom and post videos to Carmen by the end of the lecture day.

Course Materials, Fees and Technologies

Required Text

- An Introduction to Geology, freely available at: <https://opengeology.org/textbook/>

Recommended Text

- Earth: Portrait of a Planet, Steve Marshak

Required Equipment

- Computer or tablet with internet access
- A mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the [installing Office 365](http://go.osu.edu/office365help) (go.osu.edu/office365help) help article for full instructions.

CarmenCanvas Access

You will need to use [BuckeyePass](http://buckeyepass.osu.edu) (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](http://go.osu.edu/add-device) (go.osu.edu/add-device) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- [Install the Duo Mobile application](http://go.osu.edu/install-duo) (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at [614-688-4357 \(HELP\)](tel:614-688-4357) and IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Basic computer and web-browsing skills
- [Navigating CarmenCanvas](https://go.osu.edu/canvasstudent) (go.osu.edu/canvasstudent)
- [CarmenZoom virtual meetings](https://go.osu.edu/zoom-meetings) (go.osu.edu/zoom-meetings)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat:** go.osu.edu/it
- **Phone:** [614-688-4357 \(HELP\)](tel:614-688-4357)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated

Assignment Category	Points
Module Quizzes 14 total quizzes, dropping the two lowest scores	70%
Final Exam	30%

See [Course Schedule](#) for due dates.

Descriptions of Major Course Assignments

The lowest 2 lowest grades in the module quizzes will be dropped. This is intended to buffer your grade from unforeseen circumstances, including being sick or caring for an ill family member.

The quizzes and final exam are intended to reward your understanding and interpretation of earth processes. In order to maximize your grade in the class, I listening to lectures each week (don't wait til the exam). It especially helps to complete the quizzes on-time. **It is difficult to receive an "A" in the course with late or missing quiz submissions.**

Quizzes

- 10 questions on material we have just covered in the module lectures, due on Carmen 1 week after the module ends. This allows students who have missed the live lecture to watch the recording and take the quiz up to 1 week later.
- You have only 1 attempt to take quizzes, but they will remain open for 4 hours, and you can google or use any references you want. You may not confer with anyone else inside or outside the class.
- While Google is helpful, there is a lot of information on the internet, and not all of it is of equal quality, so the lectures are your best resource. If there is conflicting information between what you find on the internet and what I've said in lecture, the answer is what I've said in lecture.
- **There are no make-ups for quizzes.** You can miss 2 quizzes without penalty. Quizzes can be taken up to 5 days late, but Carmen will deduct 2 points out of 10 for each day late.
- If you have a technical problem with your Carmen quiz submission, email me right away. I will only discuss changes to quiz grades up to two business days after the quiz



deadline has passed. I will not discuss changes to quiz grades at the end of the semester.

Final Exam

- The final exam will be administered on Carmen and open for 48 hours.
- You may access any and all materials from lecture notes, textbooks, and Google searches, but you may NOT correspond with anyone (current or past students, family members, other professors) about the exam. Your answers must reflect your own analysis, research, and thinking, as in the quizzes.
- While Google is helpful, there is a lot of information on the internet, and not all of it is of equal quality, so the lectures are your best resource. If there is conflicting information between what you find on the internet and what I've said in lecture, the answer is what I've said in lecture.
- The exam will consist of a mix of old quiz questions (possibly with slight changes, so read carefully) and new questions.
- You may attempt the exam twice, and your final grade will be the greater of the two attempts. Note that, unlike the quizzes, you may not get the same questions on each attempt because questions will be randomized.
- Because of the online format and flexible exam window, the only acceptable excuses for missing the final exam are a conflict with an OSU ROTC or Athletic Program event, or a medical emergency. *In the case of a ROTC or athletic program event, you must notify me at least 2 weeks in advance and turn in a signed note from your coach.* In the case of a medical emergency, you must submit a note from your doctor with his/her contact information and contact me no less than 24 hours after the exam window ends to schedule an alternative time to take the exam.

Late Assignments

Please refer to Carmen for due dates. Due dates are set to help you stay on pace and to allow timely feedback that will help you complete subsequent assignments.

As noted above, your 2 lowest quiz scores will be dropped. There are no makeups for missed deadlines.

Instructor Feedback and Response Time

I am providing the following list to give you an idea of my intended availability throughout the course. Remember that you can call [614-688-4357 \(HELP\)](tel:614-688-4357) at any time if you have a technical problem.

- **Preferred contact method:** If you have a question, please contact me first through my Ohio State email address. I will reply to emails within **24 hours on days when class is in session at the university**.
- **Class announcements:** I will send all important class-wide messages through the Announcements tool in CarmenCanvas. Please check [your notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to ensure you receive these messages.



- **Discussion board:** I will check and reply to messages in the discussion boards once mid-week and once at the end of the week.
- **Grading and feedback:** For assignments submitted before the due date, I will try to provide feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.]

Grading Scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E

Other Course Policies

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- **Backing up your work:** Consider printing your quiz or exam answers to a pdf file before you submit so that there is a record of your answers in case something goes wrong.
- **Synchronous sessions:** During our Zoom sessions I ask you to use your real name and a clear photo of your face in your Carmen profile. During our full-group lecture time, you may turn your camera off if you choose. You are always welcome to use the [free, Ohio State-themed virtual backgrounds](https://go.osu.edu/zoom-backgrounds) (go.osu.edu/zoom-backgrounds). Remember that Zoom and the Zoom chat are our classroom space where respectful interactions are expected.

Academic Integrity Policy

Ohio State's Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [Code of Student Conduct](https://studentconduct.osu.edu) (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct,

so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Copyright for Instructional Materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university

employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, [on-demand mental health resources](https://go.osu.edu/ccsondemand) (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at [614- 292-5766](tel:614-292-5766). **24-hour emergency help** is available through the [National Suicide Prevention Lifeline website](https://www.suicidepreventionlifeline.org) (suicidepreventionlifeline.org) or by calling [1-800-273-8255\(TALK\)](tel:1-800-273-8255). [The Ohio State Wellness app](https://go.osu.edu/wellnessapp) (go.osu.edu/wellnessapp) is also a great resource.

Accessibility Accommodations for Students with Disabilities

Requesting Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with [Student Life Disability Services \(SLDS\)](#). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

Disability Services Contact Information

- Phone: [614-292-3307](tel:614-292-3307)
- Website: slds.osu.edu
- Email: slds@osu.edu
- In person: [Baker Hall 098, 113 W. 12th Avenue](#)

Student Services and Student Academic Support

- Student academic services offered on the OSU main campus. <http://advising.osu.edu>
- Student services offered on the OSU main campus. <https://contactbuckeyelink.osu.edu/>

Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- [CarmenCanvas accessibility](https://go.osu.edu/canvas-accessibility) (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- [CarmenZoom accessibility](https://go.osu.edu/zoom-accessibility) (go.osu.edu/zoom-accessibility)

Course Schedule

Refer to the CarmenCanvas course for up-to-date due dates.

Module	Topic
1 Aug 24	What's Inside Earth? (Ch2)
2 Aug 30	Plate Tectonics (Ch2)
3 Sept 7	Earthquakes & Seismology (Ch9)
4 Sept 13	Minerals and Rocks (Ch3)
5 Sept 20	Igneous Rocks & Volcanoes (Ch4)
6 Sept 27	Sedimentary Rocks & Soil (Ch5)
7 Oct 4	Metamorphism & Mountain Building (Ch6)
8 Oct 11 & 18	Energy Resources (Ch16)
9 Oct 25	Mineral Resources (Ch16)
10 Nov 1	Groundwater (Ch11)
11 Nov 8	Surface Water (Ch11)
12 Nov 15	Weather & Atmosphere (Ch15)
13 Nov 22 & 29	Climate & Global Change (Ch15)
14 Dec 6	Oceans (Ch12)

Frequently Asked Questions

What is the textbook for this class?

There is a required free textbook available online. If you would like an additional paperback book that compliments and reinforces the lecture slides, I recommend *Earth: Portrait of a Planet* by Stephen Marshak, W. W. Norton & Company. I have the 5th edition, but there is a more recent 6th edition—there may be slight differences between editions, but the learning concepts are the same. There are copies available on reserve in the Geology Library (Orton Hall) or the Thompson Library.

Do I need to connect to live lectures?

I highly recommend connecting live to stay on top of the course. There are questions we will work on together for each module that serve as good practice for the quizzes. We will also talk about current events and other topics that, I hope, will make the concepts more understandable and practical and that will give you a chance to engage with me as your professor.

Because of another commitment, I'll miss part of each class or several classes. Is that okay? Connecting to lectures “live” is strongly encouraged so you can ask questions about and stay on top of material, but I recognize that many life circumstances make it difficult to connect live. For that reason, all live lectures will be recorded and posted under modules on Carmen. If you miss a lecture, watch the recorded lecture and make sure you stay up on quiz deadlines.

I feel sick. Can I reschedule my exam?

See the exam make-up policy information under “Exam.”

I have a family emergency/funeral/etc., what should I do?

Unforeseeable events like these are a good reason to stay connected with lectures when you're otherwise able. You can miss 2 quizzes without excuse. If your emergency causes you to miss the exam, please email or see me as soon as possible.

Will class be cancelled due to inclement weather/emergency/power failure/etc? The decision to cancel classes is made by the University, not the instructors. You can sign up for automated phone/text notifications at <http://buckyealert.osu.edu/>. I will not answer emails asking whether class is cancelled or not.

The Dynamic Earth (ES 1121)

Instructor: Professor A. Sawyer

Office: 202 Orton Hall, 614-292-8383

Email: sawyer.143@osu.edu

Head TA: TBD

Office: TBD

Email: TBD

Log on to carmen.osu.edu for course materials and announcements.

Text: An Introduction to Geology, freely available at: <https://opengeology.org/textbook>

Lectures: TTH 11:10a-12:30p, ML 100

Office Hours: TTH 12:30-1:30p, 202 Orton Hall

Description

This course introduces students to earth sciences, also known as geological sciences. Topics include the structure and composition of the earth, plate tectonics, rock cycle, water cycle, energy and mineral resources, and climate change. Students will understand the processes that shape the earth and influence our daily lives (the availability of energy, water, and mineral resources that we depend on and the hazards of earthquakes, volcanoes, and water).

Grading: (All grades use standard OSU scheme)

In-class quizzes 30%

Midterm 1 20%

Midterm 2 20%

Final Exam 30%

The lowest 3 quizzes are dropped, no make-ups.

Exams are difficult by design. I want to know who has an average grasp of the material and who has mastered it. Historically, only a small fraction of the class masters the content and receives “A”s on exams (~5% in 2017, see histogram below). However, it is possible to receive an “A” overall without mastering the exam material by maintaining high quiz scores. The key to high quiz is regular attendance at lectures. It is difficult to receive an “A” in the course with irregular attendance.

In-Class Quizzes

- A few questions on material we have just covered, administered through TopHat using personal devices.
- The 3 lowest quiz scores will be dropped from the final grade.
- **There are no make-ups for pop quizzes.** You can miss 3 quizzes (24 questions) without penalty.
- Our class link is: <https://app.tophat.com/e/543796>
- If you are texting your answers into TopHat, it is your responsibility to connect your number to your account. I cannot see your answers or your score otherwise.
- If you have a technical problem during class that affects your TopHat submission, talk with me in person as soon as the lecture ends.

Midterm and Final Exams

- The exams will be administered on Carmen and open for 48 hours.

- You may access any and all materials from lecture notes, textbooks, and Google searches, but you may NOT correspond with anyone (current or past students, family members, other professors) about the exam. Your answers must reflect your own analysis, research, and thinking, as in the quizzes.
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- You may attempt the exam twice, and your exam grade will be the greater of the two attempts. Note that, unlike the quizzes, you may not get the same questions on each attempt because questions will be randomized.
- Because of the online format and flexible exam window, the only acceptable excuses for missing an exam are a conflict with an OSU ROTC or Athletic Program event, or a medical emergency. *In the case of a ROTC or athletic program event, you must notify me at least 2 weeks in advance and turn in a signed note from your coach.* In the case of a medical emergency, you must submit a note from your doctor with his/her contact information and contact me no less than 24 hours after the exam window ends to schedule an alternative time to take the exam.

GE Expected Learning Outcomes (Category 2. Breadth: A. Natural Science)

ES1121 is part of the Natural Science category in the General Education requirements. The goal of these courses is that “Students understand the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.” Within the Natural Science group, the expected Learning Outcomes for the Physical Sciences are:

Students understand the basic facts, principles, theories and methods of modern science.

Students understand key events in the development of science and recognize that science is an evolving body of knowledge.

Students describe the inter-dependence of scientific and technological developments.

Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

This is How ES1121 fulfills these Learning Outcomes:

Earth sciences are now at the forefront of societies concerns. Global warming, how much oil is available, water resources, and natural hazards are just a few of these concerns. In ES1121 we will learn the fundamentals and use them to examine a number of societal issues. Fundamentals include plate tectonics, how rocks are formed, and geodynamics. These are then used to understand why earthquakes occur, the water and climate cycles, and natural resources.

Academic Misconduct

The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students will complete all academic and scholarly assignments with fairness and honesty. Failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute “Academic Misconduct”.

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic

misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process”. Examples of academic misconduct include but are not limited to: plagiarism (using ideas or words from another person or source without referencing the person or source), collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. All suspected cases of academic misconduct will be reported to the University Committee on Academic Misconduct. If academic misconduct has been committed, possible sanctions could include a failing grade in this course and suspension or dismissal from the University.

Disability Services

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

Lecture& Reading Schedule

Week	Date	Lecture Topic	Chapter
1	8/21, 8/23	Introduction, history of the universe	1
2	8/28, 8/30	Earth’s composition (journey to the center of the earth)	2
3	9/4, 9/6	Continental drift & plate tectonics	3, 4
4	9/11, 9/13	Earthquakes	10
5	9/18, 9/20	Minerals, Review	5
6	9/25, 9/27	Magma, igneous rocks	6
7	10/2, 10/4	Volcanoes; no class 10/4 (Midterm 1)	9
8	10/9	Sedimentation, sedimentary rocks	7, Interlude B
9	10/16, 10/18	Metamorphism	8, 11, Interlude C
10	10/23, 10/25	Mountain building	14, 15
11	10/30, 11/1	Mineral Resources; no class 11/1 (Midterm 2)	
12	11/6, 11/8	Surface water	17
13	11/13, 11/15	Groundwater	19
14	11/20	Atmospheric processes	20
15	11/27, 11/29	Glaciers & ice ages	22
16	12/4	Global change	23

Exam Schedule

Midterm 1	NO CLASS open 12:01 am 10/4 through 11:59 pm 10/5
Midterm 2	NO CLASS open 12:01 am 11/1 through 11:59 pm 11/2
Final Exam	Exam open 12:01 am 12/10 through 11:59 pm 12/11

EARTHSCI 1121: Frequently Asked Questions

What are the textbooks for this class?

There is a lecture textbook. It's free online (no cost to you): An Introduction to Geology, freely available at: <https://opengeology.org/textbook>. If you want a paper textbook, I recommend any edition of: Earth: Portrait of a Planet by Stephen Marshak, W. W. Norton & Company. ISBN: 978-0-393-93750-3.

The optional paper textbook is expensive. Do I need to buy it?

No. You have access to the online textbook for free. If you want a paper textbook, as alternatives to buying the book new, you can: buy a used copy, share with a friend, photocopy a friend's (beware color figures), use the copies on reserve in the Geology Library (Orton Hall) or the Thompson Library.

Can I use an older edition of the optional paper textbook?

I am not aware of every difference between current and older versions of the textbook. If you use an older version, don't be surprised if there is missing information and the order and content of chapters are different.

Do I need to come to class?

Yes. We have quizzes nearly every day. I also provide materials in class, such as real-world examples, movies, etc., that, I hope, make the concepts much more understandable than reading from the textbook or slides on Carmen. There will be material in quizzes and exams that appear in my lecture that are not in the book.

Because of another commitment, I'll miss part of each class or several classes. Is that okay?

Since class is a key part of the experience of this course, I strongly recommend taking the course a different semester when you can attend in full. Any missed quizzes due to course schedule conflicts or transportation issues count as one of your 3 allowed missed quizzes.

I feel sick. Should I come to class/exam?

You can miss 3 in-class quizzes without penalty. Count these as your "sick days." You do NOT need to notify me. For exams, see the exam make-up policy information on Page 1 of this syllabus under "Exams."

I have a family emergency/funeral/etc., what should I do?

Unforeseeable events like these are a good reason to come to class when you're otherwise able. You can miss 3 in-class pop quizzes without any excuse. If your emergency causes you to miss an exam, please email or see me as soon as possible.

Will class be cancelled due to inclement weather/emergency/power failure/etc? The decision to cancel classes is made by the University, not the instructors. You can sign up for automated phone/text notifications at <http://buckeyealert.osu.edu/>. I will not answer emails asking whether class is cancelled or not.

Why didn't you respond to my email?

Since there are so many of you and so few of me, I will not respond to emails that are answered explicitly in the FAQ's above or in the syllabus. Please read this information carefully. It's always better to talk to me in person, either after class or in my office. Valid reasons to email me:

1. To set up an appointment. 2. If you have an emergency that will cause you to miss an exam. 3. To comment on class, ask a science question or to point me to some material you find interesting/helpful for class.

The Dynamic Earth (ES 1121)

Instructor: Professor A. Sawyer

Office: 202 Orton Hall, 614-292-8383

Email: sawyer.143@osu.edu

Head TA: Christopher Conwell

Office: 359 Mendenhall Lab

Email: conwell.30@osu.edu

Log on to *carmen.osu.edu* for course materials and announcements.

Text: Earth: Portrait of a Planet 5th Edition, Steve Marshak (recommended)

Lab Manual: Laboratory Manual in Physical Geology (Custom edition for Ohio State), Pearson, ISBN: 978-1-323-75712-3 (required)

Lectures: TTH 11:10a-12:30p, ML 100

Office Hours: TTH 12:30-1:30p, 202 Orton Hall

Labs: All labs are in ML 149

<u>Section</u>	<u>Day</u>	<u>Time</u>	<u>TA</u>
14692	W	8:00-9:50a	Nicole Wahlstrom (wahlstrom.7@buckeyemail.osu.edu)
14693	W	10:20-12:10p	Adolfo Calero (calero.4@buckeyemail.osu.edu)
14694	W	12:40-2:30p	Jonathan Bell (bell.1278@buckeyemail.osu.edu)
14695	W	3:00-4:50p	Kira Eaton (eaton.175@buckeyemail.osu.edu)
14696	W	5:20p-7:10p	Adolfo Calero (calero.4@buckeyemail.osu.edu)
14697	TH	2:20-4:10p	Erica Maletic (maletic.2@buckeyemail.osu.edu)
14698	TH	4:20-6:10p	Adolfo Calero (calero.4@buckeyemail.osu.edu)

Description

This course introduces students to earth sciences, also known as geological sciences. Topics include the structure and composition of the earth, plate tectonics, rock cycle, water cycle, energy and mineral resources, and climate change. Students will understand the processes that shape the earth and influence our daily lives (the availability of energy, water, and mineral resources that we depend on and the hazards of earthquakes, volcanoes, and water).

Grading: (All grades use standard OSU scheme)

Pop Quizzes (in lecture) 20%

Midterm 1 15%

Midterm 2 15%

Final Exam 20%

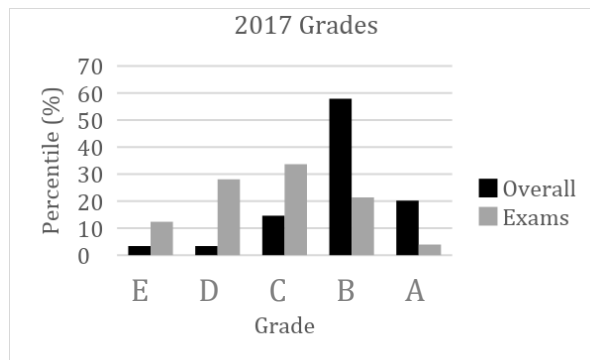
Lab 30%

The lowest 2 lab grades and 3 quizzes are dropped, no make-ups.

Exams are difficult by design. I want to know who has an average grasp of the material and who has mastered it. Historically, only a small fraction of the class masters the content and receives “A”s on exams (~5% in 2017, see histogram below). However, it is possible to receive an “A” overall without mastering the exam material by maintaining high quiz and lab scores. The key to high quiz and lab scores is regular attendance at lectures and labs. It is difficult to receive an “A” in the course with irregular attendance.

Pop Quizzes (in lecture)

- A few questions on material we have just covered, administered through TopHat using personal devices.
- The 3 lowest quiz scores (or equivalent 24 questions) will be dropped from the final grade.
- **There are no make-ups for pop quizzes.** You can miss 3 quizzes (24 questions) without penalty.
- Our class link is:
<https://app.tophat.com/e/543796>
- If you are texting your answers into TopHat, it is your responsibility to connect your number to your account. I cannot see your answers or your score otherwise.
- If you have a technical problem during class that affects your TopHat submission, talk with me in person as soon as the lecture ends.



Exams

- Both midterms are held during the regularly scheduled lecture period (see Exam Schedule, page 4).
- Each exam will consist of approximately 60 multiple-choice questions.
- In-class quizzes are good examples of test questions. Your lecture notes and quiz questions are your study guide.
- Everyone must bring a #2 pencil to the exam. They will not be provided.
- Bring your student ID or know your ID number so you can enter it on the scantron.
- You may not leave the exam room and return. Use the bathroom ahead of time.
- Exam make-up policy: The only acceptable excuses for missing exams are conflicts with an OSU ROTC or Athletic Program event, or a medical emergency. *In the case of a ROTC or athletic program event, you must notify me at least 2 weeks in advance and turn in a signed note from your coach.* In the case of a medical emergency, you must submit a note from your doctor with his/her contact information and contact me as soon as possible to schedule an alternative time to take the exam.

Labs

- Lab worksheets must be turned in to your TA at the end of the lab.
- You cannot bring completed lab sheets to lab. They must be completed by you, during lab session. Pre-marked lab answer sheets will not be accepted.
- You may either turn in your work on the tear-out sheets from your lab book or photocopies of the sheets (to keep your book in good condition). No hand drawn lab sheets will be accepted. Note that at least one of the labs requires color if you plan on photocopying.
- Your 2 lowest lab grades will be dropped from the total. This means that you can miss 2 labs without penalty. These are your sick days. There are no make-ups for missed labs.

GEC Expected Learning Outcomes (Category 2. Breadth: A. Natural Science)

ES1121 is part of the Natural Science category in the General Education requirements. The goal of these courses is that “Students understand the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.” Within the Natural Science group, the expected Learning Outcomes for the Physical Sciences are:

Students understand the basic facts, principles, theories and methods of modern science.
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 Students describe the inter-dependence of scientific and technological developments.
 Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

This is How ES1121 fulfills these Learning Outcomes:

Earth sciences are now at the forefront of societies concerns. Global warming, how much oil is available, water resources, and natural hazards are just a few of these concerns. In ES1121 we will learn the fundamentals and use them to examine a number of societal issues. Fundamentals include plate tectonics, how rocks are formed, and geodynamics. These are then used to understand why earthquakes occur, the water and climate cycles, and natural resources.

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Disability Services

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue (telephone 292-3307, TDD 292-0901, (<http://www.ods.ohio-state.edu/>)).

Lecture-Lab-Reading Schedule

Week	Date	Lecture Topic	Chapter	Lab Topic	Chapter

1	8/21, 8/23	Introduction, history of the universe	1	No Labs	
2	8/28, 8/30	Earth's composition (journey to the center of the earth)	2	Density and isostasy	1
3	9/4, 9/6	Continental drift & plate tectonics	3, 4	No Labs	
4	9/11, 9/13	Earthquakes	10	Plate tectonics	2
5	9/18, 9/20	Minerals, Review	5	Minerals	3
6	9/25, 9/27	Midterm 1 (9/25)		Igneous rocks	4
7	10/2, 10/4	Magma, igneous rocks, volcanoes	6, 9	Sedimentary rocks	5
8	10/9	Sedimentation, sedimentary rocks	7, Interlude B	No Labs	
9	10/16, 10/18	Metamorphism & mountain building	8, 11, Interlude C	Metamorphic rocks	6
10	10/23, 10/25	Petroleum & Mineral Resources	14, 15	Dating of rocks, fossils, & geologic events	7
11	10/30, 11/1	Review, Midterm 2 (11/1)		Earthquake hazards	12
12	11/6, 11/8	Surface water	17	Geologic structures	9
13	11/13, 11/15	Groundwater	19	No Labs	
14	11/20	Atmospheric processes	20	No Labs	
15	11/27, 11/29	Glaciers & ice ages	22	Topographic maps	8
16	12/4	Global change	23	No Labs	

Exam Schedule

Midterm 1	T September 25	In-Class	ML 100
Midterm 2	Th November 1	In-Class	ML 100
Final Exam	M December 10	12:00pm-1:45pm	ML 100

EARTHSCI 1121: Frequently Asked Questions

What are the textbooks for this class?

There is a lecture textbook and lab workbook. The textbook is: Earth: Portrait of a Planet (5th Edition) by Stephen Marshak, W. W. Norton & Company. ISBN: 978-0-393-93750-3.

The lab workbook is: Custom Edition for The Ohio State University Laboratory Manual in Physical Geology by The American Geosciences Institute – The National Association of Geoscience Teachers, Pearson, ISBN: 9781323757123, available through Student Book Exchange.

The textbook is expensive. Do I really need to buy it?

Only material presented in class will appear on quizzes and exams. However, reading the assigned chapters in the text before each lecture will better prepare you to follow along. The text also provides a reference for your studying (there will be no study guide). Therefore, you should read it. As alternatives to buying the book new, you can: buy a used copy, share with a friend, photocopy a friend's (beware color figures), use the copies on reserve in the Geology Library (Orton Hall) or the Thompson Library.

Can I use an older edition of the textbook?

I am not aware of every difference between current and older versions of the textbook. If you use an older version, don't be surprised if there is missing information and the order and content of chapters are different.

Do I need to come to class?

Yes. Besides the fact that there are frequent pop quizzes, I provide materials in class, such as real -world

examples, movies, etc., that, I hope, make the concepts much more understandable than reading from the textbook or slides on Carmen. There will be material in quizzes and exams that appear in my lecture that are not in the book.

Because of another commitment, I'll miss part of each class or several classes. Is that okay?

Since class is a key part of the experience of this course, I strongly recommend taking the course a different semester when you can attend in full. Due to the large number of students, I can't schedule when I give pop quizzes based on individual schedules. Any missed quizzes due to course schedule conflicts or transportation issues count as one of your 3 allowed missed quizzes.

I feel sick. Should I come to class/exam/lab?

You can miss 3 in-class quizzes and 2 labs without penalty. Count these as your "sick days." You do NOT need to notify me. For exams, see the exam make-up policy information on Page 1 of this syllabus under "Exams."

I have a family emergency/funeral/etc., what should I do?

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I am already enrolled in a lab section but would like to move to a different section that is full.

Can I do this? The registrar is responsible for approving a permanent switch to a new lab section. If you would like to switch sections temporarily due to travel or other reasonable conflicts, the TAs are responsible for approval. Look up the name and email of the TA for the section you would like to participate in, and send them a request for accommodation. Keep in mind that the labs can only handle so many, so please respect the TA's decision.

Why didn't you respond to my email?

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Arts and Sciences Distance Learning Course Component Technical Review Checklist

Course: ES 1121

Instructor: Audrey Sawyer

Summary: ?

Standard - Course Technology	Yes	Yes with Revisions	No	Feedback/ Recomm.
6.1 The tools used in the course support the learning objectives and competencies.	X			<ul style="list-style-type: none"> • Office 365 • Carmen
6.2 Course tools promote learner engagement and active learning.	X			<ul style="list-style-type: none"> • Synchronous lectures (made available for asynchronous consumption.) • Zoom
6.3 Technologies required in the course are readily obtainable.	X			All are available free via OSU agreements.
6.4 The course technologies are current.	X			All are web based and updated regularly.
6.5 Links are provided to privacy policies for all external tools required in the course.	X			No external tools are used.
Standard - Learner Support				
7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.	X			Links to 8HELP are present.
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	X			a
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.		X		Please add statement b
7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.		X		Please add statement c
Standard – Accessibility and Usability				
8.1 Course navigation facilitates ease of use.	X			Recommend using the Carmen Distance Learning "Master Course" template developed by ASC, ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content.
8.2 Information is provided about the accessibility of all technologies required in the course.	X			No 3 rd party tools are used.
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	X			Recommend that resources be developed to address any requests for alternative means of access to course materials.
8.4 The course design facilitates readability	X			Recommend using the Carmen Distance Learning "Master Course" template developed by ASC, ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content.

8.5 Course multimedia facilitate ease of use.	X		All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser.
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Reviewer Information

- Date reviewed: 1/13/21
- Reviewed by: Ian Anderson

Notes: Course title missing from header. Add dates to the weekly breakdown.

^aThe following statement about disability services (recommended 16 point font):
 The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

^bAdd to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus. <http://advising.osu.edu>

^cAdd to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. <https://contactbuckeyelink.osu.edu/>