

**GEOL 1055: Earth Through Time**  
**Fall 2023 Syllabus**  
*3 credits*

**Lecture meeting times:** Tuesdays & Thursdays 10:05–11:20

**Location:** Votey 105

**Instructors:**

- Professor Laura Webb, PhD, (she/her)
  - **Email:** [lewebb@uvm.edu](mailto:lewebb@uvm.edu) = [Laura.Webb@uvm.edu](mailto:Laura.Webb@uvm.edu)
  - **Office:** Delehanty Hall, Room 217
  - **Office hours:** Mondays 3:00–4:00 & Wednesdays 10:00–11:00.
- Professor Keith Klepeis, PhD (he/him)
  - **Email:** [kklepeis@uvm.edu](mailto:kklepeis@uvm.edu) = [Keith.Klepeis@uvm.edu](mailto:Keith.Klepeis@uvm.edu)
  - **Office:** Delehanty Hall, Room 309
  - **Office hours:** Mondays & Wednesdays 9:00–10:00.

**Teaching Assistants: Office hours (TBA) will be posted in Brightspace**

- Emma Myrick (she/her) [<emyrick@uvm.edu>](mailto:emyrick@uvm.edu), Graduate TA
- Genevieve Foran (she/her) [<Genevieve.Foran@uvm.edu>](mailto:Genevieve.Foran@uvm.edu), Undergraduate TA
- Serena Veilleux (she/they) [<Serena.Veilleux@uvm.edu>](mailto:Serena.Veilleux@uvm.edu), Undergraduate TA

**Pre-requisites:** none

**Modality:** This class is an in-person class; regular attendance and participation at lectures is expected.

**Course description:** Planet Earth records over 4.5 billion years of fascinating and sometimes catastrophic events, from the birth of continents, oceans, and the atmosphere, to the formation of life and mass extinctions. This class will explore these topics, from how they link to the formation of natural resources we depend on today to our changing climate. We decode the record of Earth's stories as preserved by rocks and fossils and discover how probing the deep Earth using technology gives us a deeper understanding of our dynamic planet. Weekly readings and homework questions will allow you to explore topics in detail and assess your learning as the semester progresses. Case studies, virtual field trips and data sets will allow you to explore the reconstruction of Earth's history using a variety of materials and techniques.

**Course learning objectives:** After successfully completing this course, you will be able to:

- Identify and explain the scientific method and give examples of how geoscience research is conducted.
- Describe basic Earth systems and cycles.
- Conceptualize geologic time and how the absolute and relative timing of events is determined.
- Describe the history of and relationships between the evolution of continents, oceans, climate, environment, and organisms.
- Predict, based on the record of Earth's history, how changes in one sphere of the Earth system can affect changes in other spheres.

**Readings:** The primary text for this course is Historical Geology, a free online textbook available at <https://opengeology.org/historicalgeology/>. Other reading assignments will be posted as files or links in Brightspace.

**Required platforms and software:**

- **iClicker student app on a smartphone, tablet or laptop (with geolocation turned on):** Please see detailed information at the end of the syllabus.
- **Brightspace:** Brightspace will be used to post the syllabus, lecture notes, assignments, readings, and exams.
- **Teams:** In the case that classes need to be held remotely, Microsoft Teams will be used for online lectures.
- **Technical support for students:** Please see this technology check list to make sure you are ready for classes: <https://www.uvm.edu/it/kb/student-technology-resources/>
  - Students should contact the Helpline (802-656-2604) for support with technical issues.

**Grading:**

- **Your final grade in this course will be based on:**

	<u>NUMERICAL</u> <u>EQUIVALENT</u>
A+	98-100
A	93-97
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	Failing

  - Attendance and participation (20%): Attendance, and active participation in lecture are expected. This portion of your grade will relate to your use of the **iClicker student app** to answer poll questions. **Geolocation needs to be turned on for your connected device.**
  - Weekly assignments (40%): Weekly homework assignments consist of readings and questions (“quizzes”) related to content covered in both readings and lectures.
  - Exams (40%): This course will have one midterm exam (20%) and a final exam (20%). Exams are online (Brightspace), and open book and open note. Students have one week to complete and submit exams. No group effort allowed.
  - Final letter grades are assigned based on the total percentage points earned, as shown to the right:
- **Assignments are due by the start of the class period indicated.** Late assignments must be turned in within one week of the due date, and grades will be reduced by one letter grade per day. For information on grading and GPA calculation, go to <https://www.uvm.edu/registrar/grades>. If you would like to contest a grade, please follow the procedures outlined in this policy: <https://www.uvm.edu/policies/student/gradeappeals.pdf>.
- **Attendance/participation/illness.** If a student will not be able to attend in-person classes for qualifying health reasons, Student Health Services (SHS) will send a notification to the appropriate student services office or designated staff member informing them of this along with the dates the student is unable to attend. The SHS notification will specify whether the request for flexibility is only around in-person class attendance or includes additional flexibility for assignments and tests because the student is too ill to participate. Students are responsible for working with their faculty to make up class content and work they miss due to a documented illness.

**Course evaluation:** All students are expected to complete an evaluation of the course at its conclusion. Evaluations will be anonymous and confidential, and the information gained, including

constructive criticisms, will be used to improve the course. Use this link for [student instructions on how to access Blue course evaluations](#).

**Codes of conduct:** Codes of conduct outline student rights, policies, and the procedures the University will follow if a student is allegedly involved in a policy violation:

- **Code of Student Rights and Responsibilities:** <http://www.uvm.edu/~uvmppg/ppg/student/studentcode.pdf>
- **Code of Academic Integrity:** The policy addresses plagiarism, fabrication, collusion, and cheating. <http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf>

**General statement regarding potential changes during the semester:** The University of Vermont reserves the right to make changes in the course offerings, mode of delivery, degree requirements, charges, regulations, and procedures contained herein as educational, financial, and health, safety, and welfare considerations require, or as necessary to be compliant with governmental, accreditation, or public health directives. <http://catalogue.uvm.edu/>

**Intellectual Property Statement/Prohibition on Sharing Academic Materials:** Students are prohibited from publicly sharing or selling academic materials that they did not author (for example: class syllabus, outlines or class presentations authored by the professor, practice questions, text from the textbook or other copyrighted class materials, etc.); and students are prohibited from sharing assessments (for example homework or a take-home examination). Violations will be handled under UVM's Intellectual Property policy and Code of Academic Integrity.

**Lived Name and Pronoun Information:** The UVM Directory includes fields for indicating your lived name and your pronouns. Lived names (preferred names, names in use) are names that an individual wants to be known by in the University community. Entering your pronouns is strongly encouraged to help create a more inclusive and respectful campus community. To update your information, login to the UVM Directory. A preview box will allow you to see how this information will appear in other systems used on campus such as Microsoft Teams and Brightspace. More information about how to make changes to your lived name and pronouns is available in the [Knowledge Base](#).

**Resources for students:** UVM has many helpful resources available to students. See for example:

- Information on **FREE tutoring** to all undergraduate students: [https://www.uvm.edu/academicsuccess/tutoring\\_center](https://www.uvm.edu/academicsuccess/tutoring_center)
- **Help with writing** for UVM undergraduates: <https://www.uvm.edu/undergradwriting>
- For more information on **resources for academic success**, please see <https://www.uvm.edu/academicsuccess>

**Student Learning Accommodations:** In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact SAS, the office of Disability Services on campus. SAS works with students and faculty in an interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter. All students are strongly encouraged to meet with their faculty to discuss the accommodations they plan to use in each course. A student's accommodation letter lists those accommodations that will not be implemented until the student meets with their faculty to create a plan. Contact info for SAS: A170 Living/Learning Center; 802-656-7753; [access@uvm.edu](mailto:access@uvm.edu) [www.uvm.edu/access](http://www.uvm.edu/access)

**UVM's policy on disability certification and student support:**

<https://www.uvm.edu/policies/student/disability.pdf>

**Religious Holidays:** Students have the right to practice the religion of their choice. Each semester students should submit in writing to their instructors by the end of the second full week of classes their documented religious holiday schedule for the semester.

**Promoting Health & Safety:** The University of Vermont's number one priority is to support a healthy and safe community:

- Center for Health and Wellbeing: <https://www.uvm.edu/health>
- Counseling & Psychiatry Services (CAPS) Phone: (802) 656-3340
- C.A.R.E. If you are concerned about a UVM community member or are concerned about a specific event, we encourage you to contact the Dean of Students Office at (802-656-3380). If you would like to remain anonymous, you can report your concerns online by visiting the Dean of Students website at <https://www.uvm.edu/studentaffairs>

**FERPA Rights Disclosure:**

<http://catalogue.uvm.edu/undergraduate/academicinfo/ferparightsdisclosure/>

**Class Schedule:** Please note that this schedule is subject to change. Copies of lectures slides will be uploaded to Brightspace. Readings listed below are from an open-source text available at <https://opengeology.org/historicalgeology/> (links to materials will be posted in Brightspace). Abbreviations related to this online material are in the schedule below as follows: Ch=Online chapter; CS=Case study; TOTT=Tools of the Trade; VSS=Virtual sample set; VFE=Virtual field experience. **Reading questions (“quizzes”) are posted in Brightspace weekly and are due by 10:00 a.m. on the following Tuesday.**

Week	Date	Day	Topic	Reading	Homework
1	29-Aug	Tues	Introduction & overview	Syllabus; Ch: What is Historical Geology?	
1	31-Aug	Thurs	The Birth of Earth	Ch: A Brief History of Earth; CS: Nebular theory and the formation of the solar system	Reading/lecture questions
1	1-Sep	Fri	<i>Last Day to Add Classes without Instructor Permission</i>		
2	5-Sep	Tues	Earth Systems	Ch: Earth as a System, parts 1-4	
2	7-Sep	Thurs	Earth Systems	Ch: Earth as a System, parts 5-9	Reading/lecture questions
3	11-Sep	Mon	<i>Add/Drop, Pass/No Pass, Audit Deadline</i>		
3	12-Sep	Tues	Earth Materials: Minerals	Ch: Earth Materials – The Rock Forming Minerals	VSS: 3D Mineral Samples
3	14-Sep	Thurs	Earth Materials: Minerals	TOTT: Earth Materials – Mineral identification	Reading/lecture questions
4	19-Sep	Tues	Earth Materials: Rocks	Ch: Earth Materials – Rocks	VSS: 3D rock samples, set 1
4	21-Sep	Thurs	Earth Materials: Rocks	VSS: 3D Rock Samples	Reading/lecture questions
5	26-Sep	Tues	Plate Tectonics	Ch: Plate Tectonics	Rocks around campus
5	28-Sep	Thurs	Geologic Structures	TOTT: Geologic structures	Reading/lecture questions
6	3-Oct	Tues	Geologic Time	Ch: Geologic Time	VSS: Relative Dating
6	5-Oct	Thurs	Geologic Maps	TOTT: Geologic maps	Reading/lecture questions
7	10-Oct	Tues	Records of Earth Processes Through Time	CS: Earth's oldest rocks	VSS: Tectonic structures
7	12-Oct	Thurs	Records of Earth Processes Through Time	CS: Discovering plate tectonics	Reading/lecture questions
8	17-Oct	Tues	<b><i>MIDTERM assigned. Submission of midterm exam answers is due by the start of lecture on Tuesday, October 24. Midterm is online (Brightspace), and open book and open note. No group work/discussion allowed.</i></b>		

Week	Date	Day	Topic	Reading	Homework
8	19-Oct	Thurs	Records of Life Through Time	Ch: Taphonomy: The Science of Death and Decay	
9	24-Oct	Tues	The Fossil Record	Ch: Innovations of Life Through Time: Life Finds a Way	
9	26-Oct	Thurs	Mass Extinctions	Ch: Mass Extinctions	Reading/lecture questions
10	30-Oct	Mon	<i>Last Day to Withdraw</i>		
10	31-Oct	Tues	Interpreting Histories of Earth and Life	Ch: Stratigraphy – The Pages of Earth’s Past; TOTT: Sequence stratigraphy	VFE: Siccar Point, Scotland
10	2-Nov	Thurs	Interpreting Histories of Earth and Life	Ch: Using sedimentary structures to interpret ancient environments	Reading/lecture questions
11	7-Nov	Tues	Interpreting Histories of Earth and Life	CS: Diversity in the marine fossil record	VFE: Fossil Correlation
11	9-Nov	Thurs	Records of Climate Through Time	Ch: Paleoclimatology	Reading/lecture questions
12	14-Nov	Tues	Records of Climate Through Time	CS: Snowball Earth glaciations	VFE: Glaciers, glaciated landscapes, and glacial sediments
12	16-Nov	Thurs	Records of Climate Through Time	CS: The Channeled Scablands of Eastern Washington	Reading/lecture questions
13	21-Nov	Tues	<i>Thanksgiving Recess</i>		
13	23-Nov	Thurs	<i>Thanksgiving Recess</i>		
14	28-Nov	Tues	Records of Climate Through Time	CS: The interplay of carbon & oxygen cycles in Earth history	VFE: The Geodetic Hills Fossil Forests: Unraveling a Paleoclimate Puzzle
14	30-Nov	Thurs	Anthropocene	CS: Quaternary Quandaries: defining the geologic “now” and explorations of the Anthropocene	Reading/lecture questions
15	5-Dec	Tues	Earth's Future	Review for exam	
15	7-Dec	Thurs	<i>FINAL EXAM assigned. Submission of final exam answers is due by 13:15 on Thursday, December 14. Final is online (Brightspace), and open book and open note. No group work/discussion allowed.</i>		

## Detailed information on iClicker

We will be using iClicker to make our class time more engaging. This will help me understand what you know, give everyone a chance to participate, and increase how much you learn in class. This will also provide you with feedback on how well you are comprehending course concepts, help you master challenging concepts.

### **Participating in my iClicker sessions will be counted towards your final grade.**

Attendance/polls/quizzes/assignments will be worth 20% of your final grade (attendance and participation). You will earn points for both attendance and each iClicker polling question you answer during lecture. In some cases, such as lecture quiz questions, correct answers will be worth more than incorrect answers. Your final iClicker grade will be calculated as  $(\text{points earned})/(\text{total possible points for the class}) \times 100$  and then normalized to 20% of your total grade in the course.

**You are required to participate with the iClicker student app on a smartphone, tablet or laptop.** UVM has an institutional site-license, so the **iClicker Student App is a no-cost option** for students (for iOS, Android, and laptops via a web browser). It is your responsibility to follow the steps below to properly get added to the iClicker course in a timely fashion. It is also your responsibility to regularly check your iClicker records for any discrepancies and bring them to our attention within 48 hours.

I have set up an iClicker integration with our campus Learning Management System, Brightspace, which will pull your name directly into my iClicker roster.

### **1. If you have an existing iClicker student account that uses our official university email address ([netid@uvm.edu](mailto:netid@uvm.edu)), you will automatically be added to our iClicker course.**

- If the iClicker system does not find a matching iClicker student account, you will receive an email from iClicker Support with instructions to [update your existing account's profile](#) or [create a new account](#).
- Please note that this email may appear in your Spam or Junk folders.

### **2. If you receive an email prompting you to create or update your iClicker student account, make sure you include the correct account information.**

- If you already have an iClicker account, do **not** create a new account. Instead, log in and edit your existing account's profile to avoid confusion and potential loss of points due to multiple accounts.
- Ensure that your iClicker profile includes the following information:
  - Your UVM email address ([netid@uvm.edu](mailto:netid@uvm.edu))

### **3. You should be added directly into this course, Fall2023 – GEOL1055 Earth Through Time.**

- If you don't see this course in your account, use the + sign to search for my course:
  - In the "Find Your Institution" field, enter The University of Vermont
  - In the "Find Your Course" field, enter "Fall2023 – GEOL1055 Earth Through Time"



- Select “Add This Course” and it will be added to the main Courses screen of your iClicker account.

#### **4. Set up the device(s) you’ll use to participate in our class sessions.**

- You can download the iClicker student mobile app via the App Store or Google Play, or you can use the iClicker web app by signing in as a student at [iclicker.com](http://iclicker.com).
  - Connect to our classroom’s Wi-Fi: Please see <https://www.uvm.edu/it/kb/article/connect-to-uvm-wireless/>

#### **5. Now the fun part! Participate in iClicker class activities.**

- We have turned on a GPS location requirement for iClicker in our class. If you are not physically in class when you try to join with iClicker, you will not be counted as present and will not be able to respond to my polling/quizzing questions.
  - You will need to allow the device you are using to reveal your location in order to successfully check in.
  - If you have any issues with your device’s location settings, refer to the [Attendance Geolocation Troubleshooting Guide](#).
- When it’s time for class, make sure you have selected my course from the main screen of iClicker.
  - Select the **Join** button that appears on your screen, then answer each question I ask in iClicker.
  - For short answer, numeric, and target questions, make sure you select **Send**.

#### **6. You can review your attendance and participation record in iClicker, making it easy for you to manage your course attendance.**

- Note that iClicker syncs with the gradebook in Brightspace.

#### **Academic Integrity Information**

iClicker activities fall under the provisions of our campus [Academic Integrity policy](#). Students must not engage in academic dishonesty while participating in iClicker activities. This includes but is not limited to:

- Checking in while not physically in class
- Having another student check you into class
- Answering polling questions while not physically in class
- Looking at other students’ devices while answering live questions
- Using more than one iClicker remote or account at a time

#### **Need help with iClicker?**

- See <https://www.uvm.edu/it/kb/article/iclicker-resources-for-students/>
- If you are having trouble with your iClicker access code, check out this [guide to access code errors](#).
- If you are having issues connecting to the iClicker student app, check out these [iClicker connectivity tips](#).
- If you are having issues seeing your iClicker points, check out this [troubleshooting guide](#).
- Find answers to other questions and contact the iClicker Tech Support Team by visiting <http://iclicker.com/support> at any time.