ESC1000 Introduction to Earth Science (Online)

Spring 2026

General Education Designation: Natural Sciences - Physical Sciences (P) sub-designation
Click here for the state General Education Objectives https://curriculum.aa.ufl.edu/general-education/general-education-subject-area-objectives/

A minimum grade of C is required for general education credit

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Office hours: Mondays & Wednesdays 1:40 – 12:40

TAs: TBA
Office hours: TBA

Textbook: *Earth Science* (eText) by *Tarbuck & Lutgens.* The cost is ~$87and includes *Mastering Geology*, which will be used for some graded activities. This book is part of the UF *All Access* program, so you will have access as soon as you register for the course. However, you will lose access after two weeks if you do not pay for it through your student accounts.

Course goals Earth is dynamic planet that is continually being reshaped by forces generated within the solid earth, as well as by processes operating in the oceans, atmosphere, and biosphere (i.e. the Earth system). Using the scientific method, critical thinking skills, and data analysis, this course will examine the fundamental processes of the Earth system, composed of an atmosphere, hydrosphere, lithosphere, biosphere, and exosphere, through time. The course will also explore interactions between these spheres, including critical analysis of scientific theories and emphasize Earth's connections with humans.

Student Learning Outcomes:

1. Students will use critical thinking to recognize the rigorous standards of scientific theories
2. Students will analyze and synthesize Earth science data to draw scientifically valid conclusions
3. Students will recognize the different time scales associated with different Earth processes
4. Students will effectively describe interactions between humans and the Earth Spheres
5. Students will apply their understanding of Earth science principles to complex global and local issues

Content - Outcomes 1-5 assessed through all assessment types on a weekly to monthly/bi-monthly assignments and exams quizzes
Critical thinking – Outcomes 1-5 assessed through monthly/bi-monthly assignments and exams
Communication – Outcomes 1-5 assessed through monthly/bi-monthly assignments and exams

Specifics of course content & objectives
By clicking on the link for each module listed below you will find the following:
(1) an *overview* that provides a short description of what to expect regarding the content of the module
(2) A list of *objectives* for the module (the objectives are often quite broad)
(3) A *study guide* for the module that provides links to more detailed objectives that are organized by topics covered within each module. You will want to refer to the study guide to prepare for quizzes and exams.
(4) Links to all of the recorded *lectures.*
(5) Links to *quizzes* and any *assignments* included in the module.
(6) A list of readings from the textbook that go along with the content covered in the lectures, as well as supplemental resources that you may find interesting

Modules
Each module listed below is one week of class material
(See details of schedule and topics at the end of the syllabus)

Module 1 Introductory concepts
Module 2A Earth materials
Module 2B Earth materials

Quiz i

Module 3A Plate tectonics
Module 3B Plate tectonics
Module 4 Earthquakes

Quiz ii

Module 5 Geologic time and dating
Module 6 Earth's resources
Module 7 Groundwater
Module 8 The oceans

Quiz iii

Module 9A The atmosphere
Module 9B The atmosphere
Module 10A The solar system
Module 10B The solar system

Quiz iv

Communications Please contact instructors and TAs through regular email (NOT Canvas message/email please) as it is much easier to keep track of our conversations as threads can be continued. Emails are shown at the top of the syllabus. Throughout the semester, I will provide information to you through Canvas announcements. Be sure that you check announcements regularly and set up Canvas to have announcements delivered to you as emails as well.

Delivery of content
Content for the course will be delivered asynchronously mainly through recorded lectures that are available in Canvas. Additional material will be assigned as reading from the eText and interactive activities associated with the eText.

Graded activities

15% Lecture-embedded (PlayPosit) questions
25% MasteringGeology Activities
50% Quizzes (4)
10% Summary Project

There will be an extra credit opportunity worth 2% points published near the end of the semester

Course policies and late and missed work The following is a list of penalties for late submissions. Exceptions to these policies will only be provided with fully documented excuses.
Quizzes: 25% for each day late (no submissions accepted after 48 hours past due date/time)
Assignments: 50% for each day late (no submissions accepted after 24 hours past due date/time)
Exams require approved documentation submitted to the instructor ahead of time

Any requests for make-ups (assignments, exams, etc.) due to technical issues should be accompanied by the ticket number received from the UF Computing Help Desk when the problem was reported. The ticket number will document the time and date of the problem. You should email your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Contact information for help with technology is shown below.

This course complies with all UF academic policies. For information on those polices and for resources for students, please see this link."

As this is an online class, you are responsible for observing all posted due dates and are encouraged to be self-directed and take responsibility for your learning.

Description of graded activities (Goals and logistics of each of the activities are discussed below)

Lecture (PlayPosit) questions Within each lecture you will find several multiple-choice questions that are embedded in, and interspersed with recorded lectures. These are simple questions that are either (1) review of material covered immediately before the question or (2) forward-looking questions where you are asked to make a basic observation regarding a figure, table, etc. The forward-looking questions (referred to in the lectures as "Make an observation") are a prelude to material that will subsequently be covered in that lecture.

These questions are generally very simple and designed to keep you engaged throughout the lecture and to better remember the lecture material. You will not be able to proceed with viewing of the lecture until the question is answered. However, you may rewind to review the material before answering the question. These are simple questions and, given that you can review the material before answering, it is expected that you receive close to 100% for this portion of your course grade.

MasteringGeology (MG)Activities These are self-guided activitiess done through Mastering Geology platform associated with the Pearson textbook. You will be asked to answer questions or do things like sort/label after viewing short animations, very brief lectures, and viewing charts and other figures.

Quizzes These will be multiple choice quizzes (or exams) delivered through Canvas. Quiz content will focus on a specific subset of material to be specified in the clear lists of objectives from the study guides provided in Canvas. Thus, it will be helpful to be looking through the objectives and study guides while watching the lectures. The exams will be proctored through Honorlock and you will be given a time window during which you can take it anytime within that window (typically 8 am to 11 pm). Any additional information will be given through Canvas announcements. *Practice quizzes* will be available in advance of the exams and are provided for individual modules. Quizzes will be closed book.

Summary assignment – The objective of this assignment is to solidify your knowledge of, and apply some of the concepts you learned throughout the semester. In contrast to the quizzes and lecture-embedded questions, which emphasis basic recall and understanding, the assignments will require you to apply the concepts, analyze data, and/or perform calculations. Thus, these require more advanced thinking than the quizzes and lecture questions. Therefore, the points from the assignments are not as easily earned as in those activities. This assignment is designed to help reinforce the topics discussed in lecture, particularly those that emphasize the analysis of geologic features. The assignment consists of sets of questions commonly tied to figures distributed as a pdf. Questions are framed as multiple-choice questions so that your answers are input via untimed Canvas quizzes. Additional details will be provided in the assignment, which will be available in the second half of the semester.

Suggested approach for success in the course

(1) Look at the activities for the upcoming week (e.g., number/length of lectures and other activities) so you can plan your week

(2) Read through objectives and study guides to get a sense of the focus of the material in the lectures

(3) Watch lectures and make notes in the study guides while watching the lectures.

(4) Comple the MasteringGeology activities

(5) Look through the study guides and be sure you have completed them

(6) Take the practices quizzes. You should try to do these without your notes. After completion you will be able to view the answers, and you can look through your study guides to address the questions you missed.

(7) Add/edit notes to your study guides to address the questions you missed on the practice quizzes and incorporate any other material.

(8) Review your study guides and practice quizzes prior to the exam. If your study guides are completed as you progress through the material, then the last couple days before the quizzes can be spent reinforcing the material, rather than learning it for the first time. All material on the exams is covered in the study guides.

Grading scale

A	90 - 100%
A-	88 - 90
B+	86 - 89
B	80 - 86
B-	78 - 80
C+	76 - 78
C	70 - 76
C-	68 - 70
D+	65 - 68

NOTE: If you fall on a boundary (e.g., 80%), you will receive the higher grade (e.g., 80% = B)

Prerequisites

There are no prerequisites for this course.

Minimum Technology Requirements

The University of Florida expects students entering an online program to acquire computer hardware and software appropriate to their degree program. Most computers are capable of meeting the following general requirements. A student's computer configuration should include:

- Webcam
- Microphone
- Broadband connection to the internet and related equipment (cable/DSL modem)
- Microsoft Office Suite installed (provided by the university)

Individual colleges may have additional requirements or recommendations that students should review before starting their program.

Minimum Technical Skills

To complete your tasks in this course, you will need a basic understanding of operating a computer and using word processing software.

Materials/Supply Fees

There is no supply fee for this course.

Honorlock

Honorlock is an online proctoring service that allows students to take exams 24/7. There are no scheduling requirements or fees.

You will need a laptop or desktop computer with a webcam, a microphone, and a photo ID. The webcam and microphone can be either integrated or external USB devices.

Honorlock requires you to use the Google Chrome browser and add the Honorlock extension to Chrome.

For further information, FAQs, and technical support, please visit HonorlockLinks to an external site..

Zoom

Zoom is an easy-to-use video conferencing service available to all UF students, faculty, and staff that allows for meetings of up to 100 participants.

You can find resources and help using Zoom at the University of Florida's ZoomLinks to an external site. website.

Netiquette and Communication Courtesy

It is important to recognize that the online classroom is, in fact, a classroom, and certain behaviors are expected when you communicate with both your peers and your instructors. These guidelines for online behavior and interaction are known as netiquette.

Security
• General Guidelines • Email • Discussion Boards • Zoom

Remember that your password is the only thing protecting you from pranks or more serious harm.

- Don't share your password with anyone.
- Change your password if you think someone else might know it.
- Always log out when you are finished using the system.

Getting Help

Technical Difficulties

For help with technical issues or difficulties with Canvas, please contact the UF Computing Help Desk at:

- http://helpdesk.ufl.eduLinks to an external site.
- 352-392-HELP (4357)
- Walk-in: HUB 132

Any requests for make-ups (assignments, exams, etc.) due to technical issues should be accompanied by the ticket number received from the UF Computing Help Desk when the problem was reported. The ticket number will document the time and date of the problem. You should email your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Tips for Success

Taking a course online can be a lot of fun! Here are some tips that will help you get the most of this course while taking full advantage of the online format:

General Tips for Success in an Online Course

- Schedule "class times" for yourself. It is important to do the coursework on time each week. You will receive a reduction in points for work that is turned in late!
- Read ALL of the material contained on this site. A lot of helpful information can save you time and help you meet the course's objectives.
- Print out the Course Summary in the Course Syllabus and check things off as you go.
- Take full advantage of the online discussion boards. Ask for help or clarification of the material if you need it.
- Do not wait to ask questions! Waiting to ask a question might cause you to miss a due date.
- Do your work well before the due dates. Sometimes things happen. If your computer goes down when you are trying to submit an assignment, you'll need time to troubleshoot the problem.
- To be extra safe, back up your work to an external hard drive, thumb drive, or through a cloud service.

Honorlock Online Proctoring

Course exams will be proctored to maintain a high academic integrity and assure that the value of your University of Florida degree is not compromised. Some students will take their exams online and will be proctored by Honorlock. You will take your exam electronically using the course website. You **do not** need to register for your exam. However, you will need to have installed and enabled the Google Chrome Honorlock extension before taking your exams. You will need a webcam, speakers, microphone, laptop or desktop computer, and a reliable internet connection to take your exams. Wireless internet is not recommended. You may also need a mirror or other reflective surface. Google Chrome is the only supported browser for taking exams in Canvas.

Before Your Exam

Before each exam and in the same environment you plan to take the exam, review the Honorlock Guidelines (Links to an external site.) (PDF), and go to Honorlock Support (Links to an external site.) to run a system check. This process takes just a few minutes and is completely free. If your course offers an Honorlock Practice Quiz, it is strongly recommended that you take it to practice using Honorlock before your exams.

Important: If you cannot take an exam because of a technical glitch on your end, that is your responsibility. However, if you experience technical difficulties during the exam, Honorlock's support menu will be visible on-screen so you can contact a support agent.

Getting Help

Honorlock offers 24/7/365 technical support to assist students before, during, and after exams. If you experience trouble with Honorlock, begin a live chat on the Honorlock Support (Links to an external site.) page, call 844-243-2500, or email Support@Honorlock.com.

Privacy and Accessibility Policies

For information about the privacy policies of the tools used in this course, see the links below:

- Adobe
  - Adobe Privacy PolicyLinks to an external site.
  - Adobe AccessibilityLinks to an external site.
- Honorlock
  - Honorlock Privacy PolicyLinks to an external site.
  - Honorlock AccessibilityLinks to an external site.
- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Microsoft
  - Microsoft Privacy PolicyLinks to an external site.
  - Microsoft AccessibilityLinks to an external site.
- PlayPosit
  - PlayPosit Privacy PolicyLinks to an external site.
  - PlayPosit AccessibilityLinks to an external site.
- YouTube (Google)
  - YouTube (Google) Privacy PolicyLinks to an external site.
  - YouTube (Google) AccessibilityLinks to an external site.
- Zoom
  - Zoom Privacy PolicyLinks to an external site.
  - Zoom AccessibilityLinks to an external site.

TOPICS AND DUE DATES

Module 1

Topics Covered in This Module: The Earth as a system; The nature of scientific inquiry (scientific method); Matter and density; Temperature and thermal energy; Maps and latitude/longitude; Layering within the Earth; and The Earth's crust, surface elevations, and the concept of isostasy

Lecture 1.1 79 minutes

Dues dates: *Jan 18 PlayPosits*

Jan 19 MasteringGeology

Module 2A

Topics Covered in This Module: Minerals; Igneous rocks; Volcanoes, volcanic eruptions, and other igneous features

Lecture 2.1 65 minutes

Lecture 2.2 77 minutes

Dues dates: *Jan 25 PlayPosits*

Jan 26 MasteringGeology

Module 2B

Topics Covered in This Module: Weathering and sedimentary rocks; Metamorphic rocks; The rock cycle

Lecture 2.3 62 minutes

Lecture 2.4 31 minutes

Dues dates: *Feb 1 PlayPosits*

Feb 2 MasteringGeology

Quiz i February 5th

Module 3A

Topics Covered in This Module: Introductory topics such as defining the plates and basics of plate motion; Earth's magnetic field and how paleomagnetism records past plate motions; Divergent boundaries

Lecture 3.1 20 minutes

Lecture 3.2 13 minutes

Lecture 3.2 35 minutes

Dues dates: *Feb 8 PlayPosits*

Feb 9 MasteringGeology

Module 3B

Topics Covered in This Module: Convergent boundaries; Transform boundaries; Hotspots; Driving forces of plate tectonics

Lecture 3.4 46 minutes

Lecture 3.5 44 minutes

Dues dates: *Feb 15 PlayPosits*

Feb 16 MasteringGeology

Module 4

Topics Covered in This Module: The cause of earthquakes; Seismic waves; Locating earthquakes; Earthquake magnitude scales; Destructive aspects of earthquakes; Where earthquakes occur; Earthquake prediction and mitigation; Using seismic waves to characterize the layers within the Earth

Lecture 4.1 50 minutes

Lecture 4.2 61 minutes

Dues dates: *Feb 22* *PlayPosits*

Feb 23 *MasteringGeology*

Quiz ii March 2nd

Module 5

Topics Covered in This Module: Basic principles that scientists use to assemble the relative ages of events; Isotopic/radiometric dating, Overview of Earth's history since its formation, focusing on important changes and periods of time with significant events or processes. in the evolution of the atmosphere, oceans, and life forms, including extinction events.

Lecture 5.1 27 minutes

Lecture 5.2 44 minutes

Lecture 5.2 47 minutes

Dues dates: Mar 8 *PlayPosits*

Mar 9 *MasteringGeology*

Module 6

Topics Covered in This Module: Fossil fuels, Conventional: coal, oil, & natural gas, Unconventional development & resources: fracking, oil shales, oil sands, gas hydrates; Nuclear energy; Mineral resources: Metallic resources, Lithium, Phosphate in Florida

Lecture 6.1 39 minutes

Lecture 6.2 22 minutes

Lecture 6.2 32 minutes

Dues dates: Mar 15 *PlayPosits*

Mar 16 *MasteringGeology*

Module 7

Topics Covered in This Module: Basic principles of groundwater, including the nature, movement, and other processes associated with groundwater as they pertain to both freshwater resources and hazards; groundwater and springs in Florida, sinkholes and cavern formation.

Lecture 7.1 49 minutes

Lecture 7.2 33 minutes

Dues dates: Mar 25 *PlayPosits*

Mar 26 *MasteringGeology*

Module 8

Topics Covered in This Module: Basic principles of groundwater, including the nature, movement, and other processes associated with groundwater as they pertain to both freshwater resources and hazards; groundwater and springs in Florida, sinkholes and cavern formation.

Lecture 8.1 54 minutes

Lecture 8.2 70 minutes

Lecture 8.2 38 minutes

Dues dates: April 1 *PlayPosits*

April 2 *MasteringGeology*

Quiz iii April 6th

Module 9A

Topics Covered in This Module: Basic principles of Earth's atmosphere, including.

Lecture 9.1 47 minutes

Lecture 9.2 70 minutes

Dues dates: April 8 *PlayPosits*

April 9 *MasteringGeology*

Module 9B

Topics Covered in This Module: Basic principles of Earth's atmosphere, including.

Lecture 9.3 42 minutes

Lecture 9.4 46 minutes

Lecture 9.5 53 minutes

Dues dates: April 15 *PlayPosits*

April 16 *MasteringGeology*

Module 10

Topics Covered in This Module: Basic principles of Earth's atmosphere, including.

Lecture 10.1 41 minutes

Lecture 10.2 46 minutes

Lecture 10.3 59 minutes

Dues dates: April 22 *PlayPosits*

April 23 *MasteringGeology*

Quiz iv April 28th
