ESC1000 Introduction to Earth Science

Course Syllabus

Course Information

ESC1000 Introduction to Earth Science (Online). Fall 2025
Credit Hours: 3.00

General Education Designation: Natural Sciences - Physical Sciences (P) sub-designation

Click here for the state General Education Objectives https://undergrad.aa.ufl.edu/general-education/gen-ed-program/subject-area-objectives/

A minimum grade of C is required for general education credit

Instructor: Dr. James Vogl jvogl@ufl.edu 277 Williamson (352) 392-6987

Office hours: Mondays and Wednesdays 11:40 am to 12:40 pm in-person or via Zoom.

TAs: Paloma Olarte pmarina.olarteca@ufl.edu

Office hours: Tuesdays 5-6 via Zoom

Thursdays 10-11 am in-person Williamson 368

TAs: Gabriel Johnston orion1234@ufl.edu

Office hours: Tuesdays 9-10 am, Thursdays 1-2 pm (Zoom only)

*Please contact instructors and TAs through emails shown above, rather than through Canvas messages/email.

Textbook - There is no required book for the course this semester. If you like to build on lecture material through textbook reading on the same topics, I recommend the following: *Earth Science* by *Tarbuck & Lutgens*.Tarbuck, E. J., Lutgens, F. K., & Tasa, D. G. (2017). *Earth Science* (15th ed.).

Course Description & 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

Module 3A Plate tectonics

Module 3B Plate tectonics

Module 3B Plate tectonics

  Exam i

Module 4 Earthquakes

Module 5 Geologic time and dating

Module 6 Earth's resources

Module 7 Groundwater

  Exam ii

Module 8 The oceans

Module 9A The atmosphere

Module 9B The atmosphere

Module 10A The solar system

Module 10B The solar system

  Exam iii

Course Requirements

Textbook

There is no required book for the course this semester. If you like to build on lecture material through textbook reading on the same topics, I recommend the following: *Earth Science* by *Tarbuck & Lutgens.*Tarbuck, E. J., Lutgens, F. K., & Tasa, D. G. (2017). *Earth Science* (15th ed.).

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 Honorlock.

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 Zoom website.

Course Policies

Requirements for make-up exams, assignments, and other work in this course are consistent with university policies that can be found on UF's Attendance Policies website.

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.

Course Content and 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 provides links to more detailed objectives 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

Course 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 and through the Contact Instructor

link on the Home Page. Throughout the semester, I will provide information to you through Canvas announcements. Ensure 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.

Grading Policy

I will make every effort to have each assignment graded and posted within one week of the due date.

Course Grading Policy

Assignment	**Percentage**
Lecture-embedded (PlayPosit) questions	20%
Quizzes	20%
Assignments	10%
Exams (three non-cumulative)	50%

*There will also be an extra-credit opportunity available at the end of the semester

Policies for 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.

Grading Scale

Percent	Grade	Grade Points
90 - 100	A	4.00
88 - 90	A-	3.67
86 - 89	B+	3.33
80 - 86	B	3.00
78 - 80	B-	2.67
76 - 78	C+	2.33
70 - 76	C	2.00
68 - 70	C-	1.67
65 - 68	D+	1.33

Percent	Grade	Grade Points
62 - 65	D	1.00
60 - 62	D-	0.67
< 60	E	0.00

See the current UF grading policies for more information.

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

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

Lecture (PayPosit) 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.

Quizzes

Quizzes consist of ~10-25 multiple choice questions that cover the assigned material (generally from lectures). There will be one quiz approximately every week – these are typically due on Sunday evenings, although later in the semester I try to spread them out a bit more. The quizzes are timed, and you will have around one to two minutes per question. Thus, there is time to look up a couple of questions, but not enough to expect to look up all of the material, therefore you should study ahead of time. Quizzes are provided through Canvas. Be sure that you have a secure internet connection and enough time before beginning each quiz.

*Note: your lowest quiz grade is dropped.

Assignments

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. These assignments are designed to help reinforce the topics discussed in lecture, particularly those that emphasize the analysis of geologic features – questions similar to those on the assignments will be found on the exams. The assignments consist of set 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.Not every week/module has an assignment - there will be three or four throughout the semester.

Exams

These will be multiple choice exams delivered through Canvas. Exam 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.

Extra Credit

There will be extra-credit activities available near the end of the semester.

Suggested Approach for Success in ESC1000: Introduction to Earth Science

(1) Look at the activities for the upcoming week (e.g., number/length of lectures, other activities beyond quizzes) 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) Look through the study guides and be sure you have completed them

(5) Take the quiz with your completed study guides in hand

(6) Complete any assignments due for that material. Some of the assignments are due after the quizzes, but you may find it more effective to at least work through the assignment prior to taking the quiz. Recall that not every module/week will have an assignment.

(7) Add additional notes to your study guides to incorporate material from the assignments. Some material in the assignments may not be covered on the quizzes

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

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)
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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 Honorlock.

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 Zoom 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**

  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.
-

- **General Guidelines**

  When communicating online:

  - Treat the instructor respectfully, even via email or other online communication.
  - Always use your professors' proper title: Dr. or Prof., or if you are unsure, use Mr. or Ms.
  - Don't refer to a professor by their first name unless specifically invited.
  - Use clear and concise language.
  - Remember that all college-level communication should have correct spelling and grammar.
  - Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you."
  - Use standard fonts such as Times New Roman and a size 12 or 14-point font.
  - Avoid using the caps lock feature, AS IT CAN BE INTERPRETED AS YELLING.
  - Limit and possibly avoid the use of emoticons like :).
  - Be cautious when using humor or sarcasm, as tone is sometimes lost in an email or discussion post, and your message might be taken seriously or be construed as offensive.
  - Be careful with personal information (both yours and others).
  - Do not send confidential information via email.

- **Email**

  When you send an email to your instructor, teaching assistant, or classmates:

  - Use a descriptive subject line.
  - Be brief.
  - Avoid attachments unless you are sure your recipients can open them.
  - Avoid HTML in favor of plain text.
  - Sign your message with your name and return email address.
  - Think before you send the email to more than one person. Does everyone really need to see your message?
  - Be sure you REALLY want everyone to receive your response when you click "Reply All."
  - Be sure that the message author intended for the information to be passed along before you click the "Forward" button.

- **Discussion Boards**

  When posting on the discussion board in your online class:

  - Check to see if anyone already asked your question and received a reply before posting to the discussion board.
  - Remember your manners and say please and thank you when asking something of your classmates or instructor.
  - Be open-minded.
  - If you ask a question and many people respond, summarize all posts for the benefit of the class.
  - When posting:
    - Make posts that are on-topic and within the scope of the course material.
    - Be sure to read all messages in a thread before replying.
    - Be as brief as possible while still making a thorough comment.
    - Don't repeat someone else's post without adding something of your own to it.
    - Take your posts seriously. Review and edit your posts before sending them.
    - Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point.
    - If you refer to something that was said in an earlier post, quote a few key lines so readers do not have to go back and figure out which post you are referring to.
    - Always give proper credit when referencing or quoting another source.
    - If you reply to a classmate's question, make sure your answer is correct; don't guess.
    - Always be respectful of others' opinions, even when they differ from your own.
    - When you disagree with someone, you should express your differing opinion in a respectful, non-critical way.
    - Do not make personal or insulting remarks.
    - Do not write anything sarcastic or angry; it always backfires.
    - Do not type in ALL CAPS; if you do, IT WILL LOOK LIKE YOU ARE YELLING.

- **Zoom**

  When attending a Zoom class or meeting:

  - Do not share your Zoom classroom link or password with others.
  - Even though you may be alone at home, your professor and classmates can see you! While attending class in your pajamas is tempting, remember that clothing is not optional. Dress appropriately.

- Your professor and classmates can also see what is behind you, so be aware of your surroundings.
- Ensure the background is not distracting or something you would not want your classmates to see.
    - When in doubt, use a virtual background. If you choose to use one, you should test the background first to ensure your device can support it.
    - Your background can express your personality, but avoid using backgrounds that may contain offensive images and language.
- Mute is your friend, especially when you are in a location that can be noisy. Don't leave your microphone open if you don't have to.
- If you want to speak, you can raise your hand (click the "raise hand" button at the center bottom of your screen) and wait to be called upon.
-

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:

- helpdesk.ufl.edu
- 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 (PDF), and go to Honorlock Support 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 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 Policy
  - Adobe Accessibility
- Honorlock
  - Honorlock Privacy Policy
  - Honorlock Accessibility
- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Microsoft
  - Microsoft Privacy Policy
  - Microsoft Accessibility
- PlayPosit
  - PlayPosit Privacy Policy
  - PlayPosit Accessibility
- YouTube (Google)
  - YouTube (Google) Privacy Policy
  - YouTube (Google) Accessibility

- Zoom
    - Zoom Privacy Policy
    - Zoom Accessibility

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
Module 1 Quiz
All Due: Aug 31

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
Module 2A Quiz
All Due: Aug 31

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
Module 2B Quiz
Assignment 1 (Mastering Geology)
All Due: Sep 7

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
Module 3A Quiz
All Due: Sep 14

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
Module 3A Quiz
Assignment 2
All Due: Sep 21

Exam I - September 25th (Modules 1-3)

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
Module 4 Quiz
Assignment 3
All Due: Oct 5

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
Module 5 Quiz
Assignment 4
All Due: Oct 12

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
Module 6 Quiz
All Due: Oct 19

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
Module 7 Quiz
All Due: Oct 26

Exam ii – October 30th

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
Module 8 Quiz
All Due: Nov 6

Module 9A

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

Lecture 9.1 47 minutes
Lecture 9.2 70 minutes
Module 9A Quiz
Assignment 5 (Mastering Geology)
All Due: Nov 14

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
Module 9B Quiz
Assignment 6 (Mastering Geology)
All Due: Nov 23

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
Module 10 Quiz
Assignment 7 (Mastering Geology)
All Due: Dec 3

Exam iii – Tuesday December 9th Modules 8-10