

Course Syllabus

42010: Introduction to Earth System Science

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Department of Earth System Science

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Virtual Office: These will occur via Zoom and you can drop in at any of these times without prior notice.

Monday 10-11a.m. Zoom: <https://uci.zoom.us/j/96555794768> (<https://uci.zoom.us/j/96555794768>)

Wednesday 12-1p.m. Zoom: <https://uci.zoom.us/j/93461135952> (<https://uci.zoom.us/j/93461135952>)

Thursday 7-8p.m. Zoom: <https://uci.zoom.us/j/99077503518> (<https://uci.zoom.us/j/99077503518>)

In-person classes: Each Tuesday and Thursday, we will host live zoom sessions where you will work together with other students to apply your new knowledge and complete a worksheet. You have the choice of attending from 9-9.50a.m. OR 11-11.50a.m. and the zoom links are below:

Tues/Thurs 9-9.50a.m. Zoom: <https://uci.zoom.us/j/98744913198>
(<https://uci.zoom.us/j/98744913198>)

Tues/Thurs 11-11.50a.m. Zoom: <https://uci.zoom.us/j/94780602853>
(<https://uci.zoom.us/j/94780602853>)

I. Course Description

This course introduces you to Earth System Science, which, at its core, involves viewing Earth's environment in a holistic fashion. From this vantage point Earth's environment is primarily governed by interactions between its major components, namely the atmosphere, hydrosphere, biosphere, and geosphere. As such, Earth system science forms the modern foundation for understanding environmental processes, including the impact of humans on climate. We will cover the origin and evolution of Earth's atmosphere, oceans, and biosphere, with particular emphasis on how each interacts with the others.

will also examine the concepts of systems, cycles, and feedbacks, and cover Earth surface process water and ice, the dynamics of life, and global change.

II. Learning Objectives/Pedagogical goals

Upon successful completion of the course, students should be able to

- understand the fundamental science behind components of the Earth system and how they in create a habitable world.
- interpret scientific figures and solve simple equations to explain/analyze/predict how aspects c Earth function or change through time
- explain and evaluate the likely impacts of humans on the Earth system and how the Earth sys affects human populations locally and globally

III. Course Requirements

Computer and Internet Connection

You will need to have access to a computer or tablet with an Internet connection in order to study re this quarter. If your professor plans to host live online meetings and expects students to interact in t meeting, you will also need a laptop with a built-in webcam **or** a webcam **or** [earbud headphones v](https://www.amazon.com/Headphones-Microphone-Controller-Compatible-Blackberry/dp/B00E4LGVUO/ref=sr_1_23?dchild=1&keywords=apple%2Bmicrophone&qid=1584858162&s=musical-instruments&sr=1-23&th=1) [_\(https://www.amazon.com/Headphones-Microphone-Controller-Compatible-Blackberry/dp/B00E4LGVUO/ref=sr_1_23?dchild=1&keywords=apple%2Bmicrophone&qid=1584858162&s=musical-instruments&sr=1-23&th=1\)](https://www.amazon.com/Headphones-Microphone-Controller-Compatible-Blackberry/dp/B00E4LGVUO/ref=sr_1_23?dchild=1&keywords=apple%2Bmicrophone&qid=1584858162&s=musical-instruments&sr=1-23&th=1) to [participate in a voice chat](https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting) [_\(https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting\)](https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting) meeting. You can also join the meeting via a [zoom app](https://support.zoom.us/hc/en-us/sections/200305413-Mobile) [_\(https://support.zoom.us/hc/en-us/sections/200305413-Mobile\)](https://support.zoom.us/hc/en-us/sections/200305413-Mobile) installed on the smartphone.

Access to the EEE+ Canvas Course site

Students are expected to login to Canvas site every day. It is a student's responsibility to get familia the [Canvas features](https://community.canvaslms.com/community/answers/guides/canvas-guide-started/pages/student) [_\(https://community.canvaslms.com/community/answers/guides/canvas-guide-started/pages/student\)](https://community.canvaslms.com/community/answers/guides/canvas-guide-started/pages/student) as the course materials and assignments will be delivered via the [EEE+ Can](https://canvas.eee.uci.edu/) [_\(https://canvas.eee.uci.edu/\)](https://canvas.eee.uci.edu/) system. Please visit the [Canvas student support](https://community.canvaslms.com/docs/DOC-10554-how-do-i-get-help-with-canvas-as-a-student) [_\(https://community.canvaslms.com/docs/DOC-10554-how-do-i-get-help-with-canvas-as-a-student\)](https://community.canvaslms.com/docs/DOC-10554-how-do-i-get-help-with-canvas-as-a-student) page out how to reach for help. You can also contact the OIT Help Desk at oit@uci.edu [_\(mailto:oit@uci.edu\)](mailto:oit@uci.edu) call (949) 824-2222 for assistance.

Update the Canvas Setting and Notification (Required!)

UCI students are given a [UCI gmail account](http://mail.google.com/a/uci.edu) [_\(http://mail.google.com/a/uci.edu\)](http://mail.google.com/a/uci.edu), but it may not be accessible in certain counties. Thus, it is very important you update the Canvas [settings](https://community.canvaslms.com/docs/DOC-10614-4212710341) [_\(https://community.canvaslms.com/docs/DOC-10614-4212710341\)](https://community.canvaslms.com/docs/DOC-10614-4212710341) and [notifications](https://community.canvaslms.com/docs/DOC-10624-4212710344) [_\(https://community.canvaslms.com/docs/DOC-10624-4212710344\)](https://community.canvaslms.com/docs/DOC-10624-4212710344) to ensure you receive the important

messages and announcements from your professor. Click on "[setting](https://canvas.eee.uci.edu/profile/settings) (<https://canvas.eee.uci.edu/profile/settings>)" to add another email address and/or a cell phone number to receive notifications. Click on "[notification](https://canvas.eee.uci.edu/profile/communication) (<https://canvas.eee.uci.edu/profile/communication>)" to configure how you receive Canvas notifications.

IV. Required Readings and Textbook

Skinner, B. & Murck, B. (2011). *The Blue Planet: An Introduction to Earth System Science* (3rd edition). Wiley. The lecture videos will contain all of the information you need for class worksheets, quizzes, and exams so the textbook is **NOT required**, although it may help you if you prefer to have another resource to learn from in addition to lectures. The e-book option tends to be the cheapest. You may also be able to find cheaper second-hand copies, rental copies, and ebook formats from online bookstores such as Amazon. Make sure that you obtain the 3rd edition because the 2nd edition was published in 1999 and is quite outdated.

V. Assignment Description

Lecture Videos

Lectures will be pre-recorded and organized in the "Modules" section on the Canvas course site. These lectures will have questions to help you assess your knowledge but these do not count towards your grade so it does not matter if you get these right or wrong! This will help guide you through the materials at a pace that is appropriate for you. You will need to move through these modules in sequence. Additional materials will become available at 12a.m. on Mondays each week throughout the summer session. Please ensure that you have watched the lectures ahead of the Tuesday or Thursday in-class activities so that you have the necessary knowledge to complete the activity and help out your group!

Participation and Worksheet (20%)

Live zoom sessions will be held on Tuesdays and Thursdays each week. You have the option of attending EITHER from 9-9.50a.m. OR 11-11.50a.m. using the zoom links that are posted above. You will be working in groups of 4-5 students and these groups will stay consistent over the 5 weeks. **Please go to "People" and select the "In-class student groups" to sign up for either a 9a.m. or 11a.m. group.** If you have not signed up by noon on Monday, June 21st, you will be automatically assigned to a group.

We will take the top 6 scores of the 9 worksheets over the quarter. You can earn full points in the discussion by participating fully in the online session and accurately completing the relevant individual and group activities. You cannot earn credit by just submitting the worksheet - **you must attend the online zoom session to earn credit.**

Zoom activities are NOT intended to simply repeat material from the lecture videos. We will instead use these activities to fulfill GE requirements and practice APPLYING the concepts that are particularly

challenging. This will be particularly helpful for your exams and I strongly encourage you to attend as many sessions as possible. Worksheets can be found in "Files" and will expand on lecture topics by:

- 1) using mathematics to quantitatively analyze and predict earth system processes (to fulfill the GE requirements)
- 2) developing more practical scientific skills such as making observations, carrying out simple experiments, using maps and graphs
- 3) applying and synthesizing the topics taught in the lecture, especially the most challenging concepts

Quizzes (20%)

There will be weekly online quizzes in Canvas to help you review and practice using the material we cover each week. Quizzes will be available from 12a.m. on Monday (with the rest of the module) and remain open until 11.59p.m. on the following Saturday. Each quiz may be taken up to 3 times before the deadline and your best score will count. Only your 6 best scores will count towards your final grade but you are encouraged to complete all the quizzes in order to assist you in learning the material. Because your lowest 3 quiz scores will be dropped, no early or make-up quizzes are permitted, even if you add the class late. Quiz answers will be available after the close date by viewing your submissions again. Commonly wrong answers will be reviewed in a recording in the following week.

Note - I deliberately do NOT show you what questions you got right or wrong in these quizzes. This is because I am trying to develop your metacognitive skills (being able to identify what you do/don't understand so you need to study more and think critically about how you are learning). Research shows students with greater metacognitive skills are much more successful.

Examinations - Mid-term (25%, on Tues 6th July) and Finals (35% on Tues 27th July)

Exams will consist of short answers and multiple-choice questions within a Canvas quiz. You will have 2 hours to complete the midterm and 3 hours to complete the final and the exams will be available on the days listed between 8-12.30p.m. You will be allowed to use unlimited paper notes during exams. However, no calculators, cell phones, and other electronic devices are allowed. You are also not allowed to communicate with other students in any way during the exam. Photo I.D. is required and must be provided upon request. If you miss an exam for any reason you must **contact your instructor within 24 hours and request a make-up exam**. A make-up exam will only be permitted a) within 1 week following the missed exam, and b) in the case of genuine emergency excusing you from the exam.

NOTE - No early exams will be given. If you cannot attend the exams then please find another way to fulfill your GE requirements.

VI. Grading Methods

20 %	In-class worksheets (Top 6 scores of 9 worksheets)
20 %	Quizzes (Top 6 scores of 9 quizzes)

25 % Midterm examination

35 % Final examination

Total: 100% (view [UCI Grading System](#)
(<http://catalogue.uci.edu/informationforadmittedstudents/academicregulationsandprocedures/#Grading>
)

VII. Course Policies

Netiquette for Remote Learning

“[Netiquette](#) (<http://www.albion.com/netiquette/>)” is network etiquette, the do's and don'ts of online communication. Netiquette covers both common courtesy online and the informal “rules of the road” cyberspace. The students are expected to follow the [Netiquette Guidelines for Remote Learning](#) (https://docs.google.com/document/d/1GPLJiT66rnKSsElo2kMi-_8ZPBibCGIxWitZbaTtWKg/edit?usp=s

Virtual Office Hours

Talk to your instructor online during office hours from Monday to Wednesday, using zoom links as p above.

Communication

The course e-mail list will be used to make announcements and communicate with you so please e that you check your UCI e-mail address at least once every day. When sending e-mails to me pleas ESS 1 in the subject line and please make sure to include your name. I will answer e-mails within 24 hours.

Class Withdrawal Policy

It is the student's responsibility to officially drop/withdraw from any courses before the deadline post the university's registrar's office. Please refer to UCI's academic calendar <http://www.reg.uci.edu/enrollment/withdrawals/> (<http://www.reg.uci.edu/enrollment/withdrawals> withdrawal policy, procedure, and refunded schedule.

Pay for Only 8 (Summer session 2021)

UCI Summer session are offering a full-time fee incentive program for all current and incoming UC s Students will need to pay for up to only 8 units in per unit course fees. For example, a current UCI undergraduate student enrolling on time in 12 units of coursework will pay \$2,232 in course fees (\$2 x 8 units), a \$184 campus fee, plus any applicable course materials fees. For more information abo definition of UC students, please visit the [UCI Summer session Pay for Only 8](#) (<https://summer.uci.edu/services/pay8/>).

Academic Integrity

UCI is an institution of learning, research, and scholarship that is strengthened by the existence of an environment of integrity. As members of the academic community, students are responsible for maintaining this environment, and subscribe to the practice of academic integrity and accept individual responsibility for their work and actions. Violations of academic integrity are unacceptable and will not be tolerated, because they devalue the teaching and learning experience for the entire community. Observing basic honesty about one's work, words, ideas, and actions is a principle to which all members of the community are required to subscribe. For more information, please visit <https://aisc.uci.edu/students/academic-integrity/index.php>.

[_ \(https://aisc.uci.edu/students/academic-integrity/index.php\)](https://aisc.uci.edu/students/academic-integrity/index.php)

ACADEMIC HONESTY IS A REQUIREMENT FOR PASSING THIS CLASS.

Cheating and disruptive behavior in any form are never allowed. In addition to the UCI academic-integrity site, you have a responsibility to refrain from any form of academic dishonesty and to treat your fellow students, teaching assistants, and instructors with courtesy, civility, and respect.

Academic honesty is a requirement for passing this class. Any student who compromises the academic integrity of this course is subject to a failing grade. I encourage students to work together so that you can understand the topics. However, the work you submit must be your own. Academic dishonesty includes, but is not limited to, **taking a quiz or exam on behalf of another student, participating in discussion sections, submitting discussion worksheets on behalf of another student, copying answers from another student, allowing another student to copy your answers, communicating exam answers to other students during an exam, attempting to use disallowed notes or technology during an exam.** If you do so, you will be in violation of the UCI Policies on Academic Honesty <see <https://aisc.uci.edu/> >. It is your responsibility to read and understand these policies. **Note that any instance of academic dishonesty will be reported to the Academic Integrity Administrative Office and will result in disciplinary action and is cause for a failing grade in the course.**

Consulting on assignments is acceptable and encouraged as a potentially valuable learning practice. You can work together, discuss methods, and check your answers against each other. You must do the work yourself. You must write your answers in your own words. It is your responsibility to make it clear to the grader that you worked through the entire problem yourself.

Types of Academic Dishonesty include:

Cheating

Copying from other students (or staring inappropriately at their work) during an exam.

Telling answers to another student during an exam.

Taking an exam for another student or having another student take an exam for you.

Making changes to a corrected exam and then returning it for more credit.

Using disallowed materials or technology in exams.

Dishonest conduct (e.g., stealing an exam from an instructor)

Plagiarism

Collusion

Students have a responsibility to:

Refrain from cheating and plagiarism.

Refuse to aid or abet any form of academic dishonesty.

Notify professors and/or appropriate administrative officials about observed incidents of academic misconduct. The anonymity of a student reporting an incident of academic dishonesty will be protected.

Diversity Statement

The University of California, Irvine, in accordance with applicable Federal and State law and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, pregnancy, physical or mental disability, medical condition (cancer-related or genetic characteristics), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services. The University also prohibits sexual harassment. This nondiscrimination policy covers admission, access, and treatment in University programs and activities.

Disability Statement

The University of California, Irvine, is committed to providing a barrier-free environment for learning and an electronic environment that is accessible to everyone, including individuals with disabilities. If you have a disability and feel you need accommodations in this program or a course, please contact the [Disability Services Center](https://dsc.uci.edu/) (<https://dsc.uci.edu/>) (DSC). DSC-approved accommodations will be provided for students who present a Faculty Notification Letter from the DSC.

Inclusive Excellence

Student Services and Resources and Campus Ally and Awareness Resources

[\(https://inclusion.uci.edu/ally-awareness-resources/\)](https://inclusion.uci.edu/ally-awareness-resources/) are provided by the [Office of Inclusive Excellence](https://inclusion.uci.edu/) (<https://inclusion.uci.edu/>). UCI has taken a university-wide approach to equity, diversity and inclusion. Our charge is about dismantling the systemic barriers of racism and discrimination that have too long been the norm in higher learning and our broader communities. The Office of Inclusive Excellence serves the campus priorities and is committed to a transformative, whole university effort grounded in our values. We expect equity, support diversity, practice inclusion, and honor free speech. (Ref from UCI Office of Inclusive Excellence)

Third-Party Tools

Please click [here](https://docs.google.com/spreadsheets/d/1MYn-yZujUMCitVRX47zRlleBsldZfIH1R7GXaHNmZ0U/edit?usp=sharing) [_ \(https://docs.google.com/spreadsheets/d/1MYn-yZujUMCitVRX47zRlleBsldZfIH1R7GXaHNmZ0U/edit?usp=sharing\)](https://docs.google.com/spreadsheets/d/1MYn-yZujUMCitVRX47zRlleBsldZfIH1R7GXaHNmZ0U/edit?usp=sharing) for information regarding the access statements and the privacy statements.

Copyrights

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