New Jersey Institute of Technology
College of Science and Liberal Arts
Department of Physics
The Earth in Space, Section 101
Phys 203-101
Fall 2025
Wednesdays, 06:00 p.m. to 08:50 p.m. ECEC # 100

Instructor

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Office Hours: Fridays: 11 AM – 1 PM

Textbook

David McConnell and David Steer. ***The Good Earth: Introduction to Earth Science*****, Fifth Edition. McGraw-Hill Education, United States of America, 2020.**

Grade

Your final grade will be based on **Attendance (10%), two examinations (25% each)** and **Presentation & Report (40%).** The examinations will be administered on the following dates:

First Examination Wednesday, October 08, 2025
Second Examination Wednesday, November 19, 2025
Final Examination by Group Project & Report*

September 24 Wednesday - Wednesday, December 17, 2025
Each Group will have 3 students – 14 Groups (of 3 to be finalized on September 18th along with the Topics for Project); Report* = Power Point Presentation

Examples of Topics: Climate Change; Supply Chain; Renewable Energy Sources; Greenhouse Gases, Energy Storage, Grid, Recycling

If you miss an examination, you will receive a grade of zero that will be calculated into your final grade. There are no make-up examinations. Although the following table will be used to determine your final grade, all examinations must be taken to earn a satisfactory final grade in the course.

85% to 100%	A
80% to 84%	B+
70% to 79%	B
65% to 69%	C+
50% to 64%	C
40% to 49%	D
0% to 39%	F

The examination grades will not be curved, nor will the final grades be curved. Each examination, including the Final Examination, will consist of multiple-choice and/or true-false questions, all of which will come directly from topics discussed in class and topics discussed in the textbook. Each examination, including the Final Examination, will be closed book and closed notes. No formula sheet or cheat sheet will be provided, nor will either be permitted for any of the examinations.

The Earth in Space (Phys 203) and The Earth in Space Laboratory (Phys 203A) are two separate courses for which you will receive two separate and independently-determined grades. Moreover, you are free to be registered for either one of these courses without being registered for the other course. If you are registered for both courses, withdrawal from one course does not mean you must withdraw from the other course.

Academic Conduct

All students who are disruptive in the classroom are in violation of the Academic Honor Code. All such students will be dismissed from the classroom and will be reported to the Dean of Student Services. Forms of disruptive conduct include, but are not limited to, talking, whispering, creating any noise, or performing any behavior that interferes with the instructor's ability to conduct class.

All students who cheat during an examination are in violation of the Academic Honor Code. All such students will automatically fail the course and will be reported to the Dean of Student Services so that further action may be taken. Examples of cheating include, but are not limited to, talking with another student, copying work from another student's examination, allowing another student to copy work from your own examination, or use of any materials besides the examination.

The Course Outline is recommended but may be modified depending on the general interest.

Syllabus

Wednesday	September 03, 2025, **Chapter 1** introduction to Earth Science the geographic coordinate system, cartography, and physical geography
Wednesday	September 10, 2025, **Chapter 7** atoms, chemical bonding, and states of matter mineralogy, petrology
Wednesday	September 17, 2025, **Chapter 2** The structure and the composition of the geosphere **Chapter 4** the Theory of Plate Tectonics
Wednesday	September 24, 2025 **Chapter 6**, Orology **Chapter 5**, seismology, Project Presentation
Wednesday	October 01, 2025 vulcanology, **Chapter 6** Paleogeology, **Chapter 8,** Project Presentation
Wednesday	October 08, 2025 **First Examination**
Wednesday	October 15, 2025 **Chapter 13**, introduction to oceanology/oceanography, geological oceanology/oceanography, Project Presentation
Wednesday	October 22, 2025 **Chapter 13** chemical oceanology/oceanography and thermodynamic oceanology/oceanography biological oceanology/oceanography, Project Presentation
Wednesday	October 29, 2025 **Chapter 13** physical oceanology/oceanography: ocean currents Chapter Thirteen physical oceanology/oceanography: ocean waves, Chapter Thirteen, coasts and shores, Project Presentation
Wednesday	November 05, 2025 **Chapter 14** introduction to the atmosphere local (small-scale) meteorological dynamics, Project Presentation
Wednesday	November 12, 2025 **Chapter 15**, global (large-scale) meteorological dynamics, the Bjørgvin Theory of Meteorology Chapter 16, climatology, Project Presentation

Wednesday November 19, 2025 Second Examination

Nov	10	Last Day to Withdraw from Classes
Nov	25	Thursday Classes Meet
Nov	26	Friday Classes Meet
Nov	27	Thanksgiving Recess Begins. No Classes
Nov	30	Thanksgiving Recess Ends
Dec	11	Last Day of Classes
Dec	12	Reading Day
Dec	13	Saturday Classes Meet
Dec	14	Final Exams Begin
Dec	20	Final Exams End
Dec	22	Final Grades Due

Wednesday December 03, 2025 **Chapter 9**, introduction to geomorphology, soil science, **Chapter 10** mass wasting, Project Presentation

Wednesday, December 10, 2025 fluvial processes **Chapter 11**
groundwater processes **Chapter 12**
aeolian processes **Chapter 16**
glaciology **Chapter 16,** Project Presentation

All the Examinations will be held via Canvas

You will need to register in Canvas.

Learning Objectives and Outcomes

understand that the Earth is a geological, oceanographic, atmospheric, and biological system
recall the geographic coordinate system
understand different types of map projections
comprehend atomic theory, including subatomic particles
comprehend molecular theory, including different types of chemical bonding
describe states of matter and phase changes
discuss the properties of minerals
understand different mineral groups, with strong emphasis on the silicate minerals
analyze the different types of rocks and how they form
comprehend the interior structure of the geosphere
understand the Theory of Plate Tectonics
discuss the observational evidence for the Theory of Plate Tectonics
use the Theory of Plate Tectonics to study orology, seismology, and vulcanology
calculate the age of the Earth from radioactive dating
discuss the geological processes on the ocean floor
analyze the chemistry and the thermodynamics of the oceans using salinity, temperature, and pressure
understand the biological processes in the oceans
describe the currents and waves in the oceans
discuss landforms of coasts and shores
summarize the basics of the atmosphere, including its composition and its layers
analyze the thermodynamics of the atmosphere using pressure, temperature, and relative humidity
understand the Bjørgvin Theory of Meteorology
apply the Bjørgvin Theory of Meteorology to meteorological processes using air masses and fronts
comprehend climatological processes that cause ice ages, glacial periods, and interglacial periods
predict the terrestrial landscapes/environments we find on continents
understand the continuous weathering and erosion of terrestrial landforms
analyze different types of soil and determine which are best and which are worst for agriculture
compare and contrast different types of mass wasting processes
explain how fluvial processes operate in river valleys and floodplains
understand how groundwater processes sculpt karst topographies
explain how aeolian processes affect deserts
summarize how glacial processes shape mountains and valleys

Fall 2025 Academic Calendar

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Sept	1	Labor Day. University Closed
Sept	2	First Day of Classes
Sept	8	Last Day to Add/Drop a Class
Sept	8	Last Day for 100% Refund, Full or Partial Withdrawal
Sept	9	W Grades Posted for Course Withdrawals
Sept	15	Last Day for 90% Refund, Full or Partial Withdrawal - No Refund for Partial Withdrawal after this date
Sept	29	Last Day for 50% Refund, Full Withdrawal
Oct	2	Wellness Day
Oct	20	Last Day for 25% Refund, Full Withdrawal
Nov	10	Last Day to Withdraw from Classes
Nov	25	Thursday Classes Meet
Nov	26	Friday Classes Meet
Nov	27	Thanksgiving Recess Begins. No Classes
Nov	30	Thanksgiving Recess Ends
Dec	11	Last Day of Classes
Dec	12	Reading Day
Dec	13	Saturday Classes Meet
Dec	14	Final Exams Begin
Dec	20	Final Exams End
Dec	22	Final Grades Due