General Information

Professor Information

Instructor: Rodolfo Rego  
Office: AHC5 384 (MMC)  
Phone: (305) 348-1478  
E-Mail: rrego@fiu.edu  
Website: FIU Earth and Environment

Office Hours: Wednesday 1:00 PM - 3:00 PM or by Appointment.  
Methods:  
- Zoom  
- Office Visit  
- Phone call

Course Description and Purpose

This lecture course provides a basic survey of Earth Science including Earth materials, surface and internal processes, earth history, oceanography and atmospheric science. This course with its lab (ESC1000 Lab) fulfills the Natural Science tier 1 UCC requirement.

Students should leave this course with a solid appreciation of the Earth sciences and their impact on such societal issues such as natural hazards and mineral and energy resources.

Course Objectives

After completing this course, students should be able to apply their knowledge of Earth science to:

- apply scientific principles and theories to problem solving;
- test scientific hypothesis by applying the scientific method;
- evaluate scientific statements and graphics;
- interpret new information within the context of existing knowledge.

Important Information
Please review the FIU's Policies and Netiquette webpage. The policies webpage contains essential information regarding guidelines relevant to all courses at FIU, as well as additional information about acceptable netiquette for online courses.

As a member of the FIU community you are expected to be knowledgeable about the behavioral expectations set forth in the FIU Student Code of Conduct.

Technical Requirements and Skills

One of the greatest barriers to taking an online course is a lack of basic computer literacy. By computer literacy we mean being able to manage and organize computer files efficiently, and learning to use your computer's operating system and software quickly and easily. Keep in mind that this is not a computer literacy course; but students enrolled in online courses are expected to have moderate proficiency using a computer. Please go to the "What's Required" webpage to find out more information on this subject.

Privacy Policy Statements for partners and Vendors

- Canvas
- Microsoft
- Adobe
- Google
- ProctorU
- HonorLock (PDF)
- Turnitin
- NBC Learn
- OpenStax
- Adobe Connect
- Respondus LockDown Browser
- Zoom

Please visit our Technical Requirements webpage for additional information.
The Disability Resource Center collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The DRC provides FIU students with disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact the Center at (305) 348-3532 or visit them at the Graham Center GC 190.

For additional assistance please contact FIU’s Disability Resource Center.

Web Accessibility Statements for Partners and Vendors

- Canvas
- Microsoft
- Adobe
- Google
- ProctorU
- HonorLock
- OpenStax
- Turnitin
- NBC Learn
- Adobe Connect
- Respondus LockDown Browser
- Zoom

Please visit our ADA Compliance webpage for additional information about accessibility involving the tools used in this course.

**Academic Misconduct Statement**

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

Academic Misconduct includes: **Cheating** – The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. **Plagiarism** – The use and appropriation of another’s work without any indication of the source and the representation of such work as the student’s own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is responsible for plagiarism.

Learn more about the [academic integrity policies and procedures](#) as well as [student resources](#) that can help you prepare for a successful semester.
If you are looking for help for yourself or a fellow classmate, Panthers Care encourages you to express any concerns you may come across as it relates to any personal behavior concerns or worries you have, for the classmate's well-being or yours; you are encouraged to share your concerns with FIU's Panthers Care website.

Counseling and Psychological Services (CAPS) offers free and confidential help for anxiety, depression, stress, and other concerns that life brings. Professional counselors are available for same-day appointments. Don't wait to call (305) 348-2277 to set up a time to talk or visit the online self-help portal.

Course Prerequisites

This course has a prerequisite(s). Review the Course Catalog, webpage for prerequisites information.

Proctored Exam Policy

Please note that the information contained in this section applies only if your course requires a proctored exam.

Through a careful examination of this syllabus, it is the student's responsibility to determine whether this online course requires proctored exams. Please visit our Student Proctored Exam Instructions, webpage for important information concerning proctored exams, proctoring centers, and important forms.

Textbook and Course Materials

Title : Earth Science (The Earth, The Atmosphere, and Space)

Authors : Stephen Marshak and Robert Rauber

ISBN 13 : 9780393615463

Purchase/Rent at FIU Bookstore

Publish Date : Publish Date

The VitalSource e-Text is the most cost effective option.
Expectations of This Course

This is an online course, which means most (if not all) of the course work will be conducted online. Expectations for performance in an online course are the same for a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

Students are expected to:

- **review the getting started page** located in the course modules;
- **introduce yourself to the class** during the first week by posting a self-introduction in the appropriate discussion;
- **take the practice quiz** to ensure that your computer is compatible with the learning management system, Canvas;
- **interact** online with instructor and peers;
- **review** and follow the course calendar and weekly outlines;
- **log in** to the course 4 times per week;
- Check **Announcements** regularly;
- **respond** to discussions by the due date specified. No late work will be accepted;
- **respond** to messages within no more than 2 days;
- **submit** assignments by the corresponding deadline

The instructor will:

- log in to the course **at least 5 times** a week;
- respond to discussion postings within 2 days;
- respond to **emails** within 48 hours;
- grade assignments within **10 days** of the assignment deadline.

Course Detail

Course Communication

Communication in this course will take place via the Canvas Inbox. Check out the Canvas Conversations Tutorial or Canvas Guide to learn how to communicate with your instructor and peers using Announcements, Discussions, and the Inbox.

It is recommended that students check their inbox routinely to ensure up-to-date communication and adjust the notification settings accordingly.

**Announcements** will be posted throughout the semester discussing various topics relating the course. Announcements can also contain important reminders about due dates and/or discussion certain elements of topics covered during the course. It is extremely important that you check and read the announcements on a regular basis.
### Earth Science Project (Google Earth Tour)

This assignment will require Google Earth Pro Desktop

**Step 1:** Select two topics from the course that are of particular interest to you (e.g., volcanoes, coastlines, rivers, and glaciers). You must choose topics listed in the text or within the course.

**Step 2:** Find two locations in the U.S. that display the topics/features you selected in Google Earth. You may need to conduct some preliminary research on the Internet to discover the locations prior to searching in Google Earth. Example: If you picked volcanoes as your topic, then find a location in the U.S. using Google Earth where you can see volcanoes.

**Step 3:** Conduct some research to determine the specifics about the topic. For example, if you picked coastlines, then discuss the location and specifics about the processes that shaped the coastline in that area (e.g., weathering, erosion, currents, etc.). If you select volcanoes, then discuss the type of volcano, the composition as well as the plate boundary setting (e.g., shield volcano, mafic, divergent boundary, etc.).

**Step 4:** Complete a narrated Google Earth tour discussing the locations.

*Additional instructions will be provided in the appropriate module.*

### Geotour Discussions

This assignment will require Google Earth Pro Desktop version. Free to download on your desktop computer.

Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

Geotours are active-learning opportunities that take you on virtual field trips to see outstanding examples of geology at locations around the world.

Discussions and participation are required, just as if you were in a face to face class. Online does not mean silent or student guided. The grade will be dependent on thoughtful participation during the discussion forums. Responses such as 'I agree' or 'yea...what he said' will result in zero points of credit. You can earn your grade and exemplary participation will earn higher scores. Read the rubric below for more information.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Ideas</td>
<td>Well-developed ideas; introduces new ideas; and stimulates discussion.</td>
</tr>
<tr>
<td>Evidence of Critical Thinking</td>
<td>Clear evidence of critical thinking - application, analysis, synthesis and evaluation. Postings are characterized by clarity of argument, depth of insight into theoretical issues, originality of treatment, and relevance. Sometimes include unusual insights. Arguments are well supported.</td>
</tr>
<tr>
<td>Quantity of Postings</td>
<td>Interact at least twice with other students and/or the instructors.</td>
</tr>
<tr>
<td>Timeliness</td>
<td>Individual message and at least two responses posted before the deadline.</td>
</tr>
<tr>
<td></td>
<td>First submission and prompt questions are due by <strong>Thursday</strong> of the assigned week. And all responses (e.g., peer review) must be completed by the following <strong>Monday</strong>.</td>
</tr>
</tbody>
</table>

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**Quizzes and Exams**

In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your responsibility to make sure your computer meets the minimum **hardware requirements**.

All assessments will auto-submit when (1) the timer runs out OR (2) the closing date/time is reached, **whichever happens first**. For example, if a quiz has a closing time of 5:00 pm but the student begins the exam at 4:55 pm, the student will only have 5 minutes to complete the quiz.

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a tablet. If you need further assistance please contact [FIU Online Support Services](mailto:).

There will be five (5) quizzes over the course of the term. Typically, each quiz will focus on the chapters for that given period. However, given the nature of science, many concepts are interconnected with each other and therefore all content may be found within a quiz. Quizzes will be multiple choices format.

There is one exam for this course. The final exam is cumulative and will be given at the scheduled exam time during final exams week. The exam will be multiple choices format. No make-ups will be allowed for exams without a written excuse from a doctor, parent, or legal guardian. For more information contact me.
Zoom is a video conference tool that you can use to interact with your professor and fellow students by sharing screens, chatting, broadcasting live video/audio, and taking part in other interactive online activities. We will be utilizing this tool to conduct office hours, and questions about the course and assignments. Zoom Meetings will be held on the following dates/time:

**Meetings will be available on Wednesdays from 1pm - 3pm**

**Zoom Test Meeting Room**
Use this link to access the Zoom Test Meeting Room. This meeting room is available to test out the software before joining an actual session.

Reference the provided links to access Zoom student tutorials to learn about the tool, how to access your meeting room, and share your screen.

- [Download Zoom](#).
- [Login to Zoom through Desktop Application](#).
- [Enable and Test Audio & Webcam](#).
- [Schedule a meeting](#) or [Join a Zoom meeting](#).
- [Invite others to join meeting](#).
- [Chat (Professors) - Students look at attendees section for instructions](#).
- [Share My Screen](#).
- [Record a Local Zoom meeting](#).
- [Host Control in Meetings](#).
- [Getting Started with iOS](#).
- [Getting Started with Android](#).

### Course Late Assignment Policy

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<thead>
<tr>
<th>Number of Days Late</th>
<th>Deduction</th>
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<tbody>
<tr>
<td>1</td>
<td>5% per day</td>
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<tr>
<td>&gt;7</td>
<td>Cannot be submitted</td>
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You must contact your instructor before attempting late assignments.
## Course Requirements

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<tr>
<th>Course Requirement</th>
<th>Number of Items</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Introduce Yourself Video Blog</td>
<td>1</td>
<td>3%</td>
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<tr>
<td>Quizzes</td>
<td>5</td>
<td>30%</td>
</tr>
<tr>
<td>Geotour Discussions</td>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>Cumulative Final Exam</td>
<td>1</td>
<td>15%</td>
</tr>
<tr>
<td>Earth Science Narrated Tours</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Extra Credit</td>
<td>1</td>
<td>up to 5%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>100%</strong></td>
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## Grading Scheme

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<thead>
<tr>
<th>Letter</th>
<th>Range (%)</th>
<th>Letter</th>
<th>Range (%)</th>
<th>Letter</th>
<th>Range (%)</th>
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<tbody>
<tr>
<td>A</td>
<td>95 or above</td>
<td>B</td>
<td>83 - 86</td>
<td>C</td>
<td>70 - 76</td>
</tr>
<tr>
<td>A-</td>
<td>90 - 94</td>
<td>B-</td>
<td>80 - 82</td>
<td>D</td>
<td>60 - 69</td>
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<tr>
<td>B+</td>
<td>87-89</td>
<td>C+</td>
<td>77 - 79</td>
<td>F</td>
<td>59 or less</td>
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## Course Calendar
### Assignments

<table>
<thead>
<tr>
<th>Component</th>
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<tr>
<td>Introduce Yourself</td>
<td>3%</td>
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<tr>
<td>Geotour Discussions</td>
<td>30%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>30%</td>
</tr>
<tr>
<td>Exams</td>
<td>15%</td>
</tr>
</tbody>
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#### Introduce Yourself
- **Introduce Yourself**
  - Due: Jan 13, 2020 at 11:59 pm | 3 pts

#### Geotour Discussions
- **GEOTOUR Discussion #1**
  - Due: Jan 20, 2020 at 11:59 pm | 10 pts
- **GEOTOUR Discussion #2**
  - Due: Feb 03, 2020 at 11:59 pm | 10 pts
- **GEOTOUR Discussion #3**
  - Due: Feb 24, 2020 at 11:59 pm | 10 pts
- **GEOTOUR Discussion #4**
  - Due: Mar 16, 2020 at 11:59 pm | 10 pts
- **GEOTOUR Discussion #5**
  - Due: Apr 06, 2020 at 11:59 pm | 10 pts
- **GEOTOUR Discussion #6**
  - Due: Apr 20, 2020 at 11:59 pm | 10 pts

#### Quizzes
- **Quiz #1**
  - Due: Jan 27, 2020 at 11:59 pm | 100 pts
- **Quiz #2**
  - Due: Feb 17, 2020 at 11:59 pm | 100 pts
- **Quiz #3**
  - Due: Mar 09, 2020 at 11:59 pm | 100 pts
- **Quiz #4**
  - Due: Mar 30, 2020 at 11:59 pm | 100 pts
- **Quiz #5**
  - Due: Apr 13, 2020 at 11:59 pm | 100 pts

#### Exams
- **Due**
  - Jan 13, 2020 at 11:59 pm | 3 pts
  - Jan 20, 2020 at 11:59 pm | 10 pts
  - Feb 03, 2020 at 11:59 pm | 10 pts
  - Feb 24, 2020 at 11:59 pm | 10 pts
  - Mar 16, 2020 at 11:59 pm | 10 pts
  - Apr 06, 2020 at 11:59 pm | 10 pts
  - Apr 20, 2020 at 11:59 pm | 10 pts
  - Jan 27, 2020 at 11:59 pm | 100 pts
  - Feb 17, 2020 at 11:59 pm | 100 pts
  - Mar 09, 2020 at 11:59 pm | 100 pts
  - Mar 30, 2020 at 11:59 pm | 100 pts
  - Apr 13, 2020 at 11:59 pm | 100 pts
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<tr>
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<th>Due Date</th>
<th>Points</th>
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<tr>
<td><strong>Final Exam</strong></td>
<td>Apr 25 2020 at 11:59 pm</td>
<td>100 pts</td>
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<tr>
<td><strong>Earth Science Projects</strong></td>
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<td>22% of Total</td>
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<tr>
<td><strong>Rivers-Narrated Google Earth Tour Dropbox</strong></td>
<td>Mar 23 2020 at 11:59 pm</td>
<td>10 pts</td>
</tr>
<tr>
<td><strong>Volcanoes - Narrated Google Earth Tour Dropbox</strong></td>
<td>Feb 10 2020 at 11:59 pm</td>
<td>10 pts</td>
</tr>
<tr>
<td><strong>Extra Credit</strong></td>
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<td>5% of Total</td>
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<tr>
<td><strong>extra credit</strong></td>
<td>Apr 20 2020 at 11:59 pm</td>
<td>5 pts</td>
</tr>
<tr>
<td><strong>UCC Requirement</strong></td>
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<td>0% of Total</td>
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<tr>
<td><strong>Mid-Semester Grade</strong></td>
<td></td>
<td>100 pts</td>
</tr>
</tbody>
</table>
## WEEK 1 | PART I. OUR DYNAMIC PLANET (CHAPTER 1)

### GETTING STARTED

- **Websites: How to Avoid Plagiarism**
- **Video: 13 Study Tips**
- **Video: How to Get the Most Out of Studying Video Series**
- **Video: The Feynman Technique - 3 Steps to Learning Something New**
- **GEOTOURS**
  - **Video: The Scientific Process (GeoScience Videos)**
  - **Video: Why Earth Science?**

### CHAPTER 1. FROM THE BIG BANG TO THE BLUE MARBLE

- **Chapter 1 Learning Objectives**
Narrative

- Video: Formation of the Solar System
- Video: Formation of the Earth

Real World Videos

- Video: Researchers discover the Earth's inner-inner core
- Video: The Faint Young Star Paradox: Solar Storms May Have Been Key to Life on Earth
- Video: How Planets Are Born

CH 01 FLASHCARDS

WEEKLY ACTIVITIES

- Introduce Yourself
  Jan 13 | 3 pts
- Practice Quiz
  3 pts
- CH 01 Practice Quiz (Optional)
  25 pts

GEOTOURS Instructions and Files

- INSTRUCTIONS TO DOWNLOAD GOOGLE EARTH AND KMZ FILE

WEEK 2 | PART I. OUR DYNAMIC PLANET (CHAPTER 2)

CHAPTER 2. THE WAY THE EARTH WORKS: PLATE TECTONICS

- Chapter 2 Learning Objectives
- EarthSci_LecturePPT_Ch02_final.pptx
Animation: Plate Boundaries

Narrative

Video: Breakup of Pangea

Real World Videos

Video: Deep Ocean Volcano

Video: Hologlobe?

CH 02 FLASHCARDS

Website: This Dynamic Earth: the Story of Plate Tectonics (USGS)

Website: Tectonic Plates, Earthquakes, and Volcanoes (PBS LearningMedia)

Website: Plate Tectonics [Plate Tectonics Articles, Theory, Plate Diagrams, Maps, Teaching] (Geology.com)

Video: Earth Layers & Isostasy (Earth Rocks!)

Video: Big Idea 4: Earth Continually Changes (AGI Education)

Video: Tectonic Plates (GeoScience Videos)

Video: Rates of Plate Motions (GeoScience Videos)

Video: Transform Plate Boundaries (GeoScience Videos)

Video: Convergent Plate Boundaries (GeoScience Videos)

Video: Divergent Plate Boundaries (or How do you make an ocean?) (GeoScience Videos)

WEEKLY ASSIGNMENTS

CH 02 Practice Quiz (Optional) 25 pts

GEOTOUR Discussion #1  Jan 20 | 10 pts
Chapter 4 Learning Objectives

Animations: Lava Groups
Animations: Volcanoes
Animations: Hot Spot Formation
Animations: Plate Boundaries

Narrative

Video: Partial Melting

Real World Video

Video: Lava Flowing Into a Seemingly Bottomless Crack
Video: Lava Spattering from a Persistent Vent
Video: Monitoring Volcanoes Using ASTER Satellite Imagery
Video: Volcano Web Shorts 3: Seismology
Video: Seismologists Discover Deeper Yellowstone Magma
Video: Draining in Lava pond within Halema'uma'u Vent
Video: Inflation of a Pahoehoe Lava Flow
Video: Lava Destroys House

CH 04 FLASHCARDS

Website: Volcanic Hazards Program (USGS)
Website: Volcanoes and Volcanic Eruptions (Geology.com)
WEEKLY ASSIGNMENTS

- CH 04 Practice Quiz (Optional) 24 pts
- GEO TOUR Discussion #2 Feb 03 | 10 pts

CHAPTER 5. A SURFACE VENEER: SEDIMENTS AND SEDIMENTARY ROCK

- Chapter 5 Learning Objectives
- Volcanoes-Narrated Google Earth Tour Instructions
- EarthSci_LecturePPT_Ch05_final.pptx

Narrative

- Video: Forming Soil
- Video: Transgression and Regression

Real World Video

- Video: Artic Soil is Key to Future Climate

CH 05 FLASHCARDS

Website: What is weathering? (AGI)
Website: What is chemical weathering? (AGI)

Website: What is physical weathering? (AGI)

Website: What are the biological processes of weathering? (AGI)

Website: What’s the difference between weathering and erosion? (USGS)

Web page: Sedimentary Rocks (Geology.com)

Video: Sedimentary Rocks (Geoscience Videos)

Video: Weathering (Iken Edu)

Video: How To Differentiate and Identify Soil Horizons In The Field (NRCS NSSC)

WEEKLY ASSIGNMENTS

CH 05 Practice Quiz (Optional)
25 pts

Volcanoes - Narrated Google Earth Tour Dropbox
Feb 10 | 10 pts

WEEK 6 | PART I. OUR DYNAMIC PLANET (CHAPTER 6)

Prerequisites: WEEK 5 | PART I. OUR DYNAMIC PLANET (CHAPTER 5) Complete One Item

CHAPTER 6. A PROCESS OF CHANGE: METAMORPHISM AND THE ROCK CYCLE

Chapter 6 Learning Objectives

EarthSci_LecturePPT_Ch06_final.pptx

Animation

Animation: Metamorphic Change

Narrative

Video: Rock Cycle
CHAPTER 7. CRAGS, CRACKS, AND CRUMPLES—MOUNTAIN BUILDING AND GEOLOGIC STRUCTURES

- Chapter 7 Learning Objectives
- EarthSci_LecturePPT_Ch07_final.pptx
- Animation: Rock Deformation
- Animation: Faults- Normal, Reverse, Strike-slip
- Animation: Folds
- Animation: Isostasy

Real World Video
- Video: Digging into the Alpine Fault
- Drilling into New Zealand's Most Dangerous Fault
- Using LiDAR Imagery to Reveal the Tahoe-Sierra Frontal Fault Zone
WEEKLY ASSIGNMENTS

- **CH 07 Reading Quiz (Optional)**
  25 pts

- **GEOTOUR Discussion #3**
  Feb 24 | 10 pts

WEEK 8 | PART I. OUR DYNAMIC PLANET (CHAPTER 8)

CHAPTER 8. A VIOLENT PULSE: EARTHQUAKES

- **Chapter 8 Learning Objectives**

  - **EarthSci_LecturePPT_Ch08_final.pptx**

  - **Animation: Earthquake Waves and Epicenter Location**

  - **Animation: Tsunami Initiation and Arrival**

  - **Narrative**

  - **Video: Continental Collision**

**Real World Video**

- **Tsunami Awareness**

- **Shaking in the Atwood Building in Anchorage, Alaska**
WEEKLY ASSIGNMENTS

- CH 08 Practice Quiz (Optional)
  23 pts

WEEK 9 | PART I. OUR DYNAMIC PLANET (CHAPTER 9)

CHAPTER 9. DEEP TIME: HOW OLD IS OLD?

- Chapter 9 Learning Objectives

- EarthSci_LecturePPT_Ch09_final.pptx

- Animation: Fossils

- Animation: Relative Age Dating

- Animation: Uncomformities

- Animation: Biostratigraphy

Real World Video

- Video: Petrified Forest

- Video: Reptiles and Shark's Teeth

- CH 09 FLASHCARDS

- Webpage: Fossils, Rocks, and Time (USGS)

- Webpage: Geologic Time Scale - A Time Line for the Geological Sciences (Geology.com)
WEEKLY ASSIGNMENTS

- **CH 09 Practice Quiz (Optional)**
  25 pts

- **Quiz #3**
  Mar 09 | 100 pts

WEEK 10 | PART II. EVER-CHANGING LANDSCAPES (CHAPTERS 12 & 13)

Prerequisites: WEEK 9 | PART I. OUR DYNAMIC PLANET (CHAPTER 9)

Complete One Item

CHAPTER 12. AGENTS OF CHANGE: THE HYDROLOGIC CYCLE AND MASS WASTING

- **Chapter 12 Learning Objectives**

- **EarthSci_LecturePPT_Ch12_final.pptx**

- **Animation: Landslide**

**Narrative**

- **Video: Developing and Detecting Slumps**

**Real World Video**

- **Video: Earth's Water Cycle**

- **Video: Evapotranspiration from Landsat Satellites**

- **CH 12 FLASHCARDS**

- **Web Page: Landslide Overview Map of the Conterminous United States (USGS)**

- **Web page: Landslides 101 (USGS)**

- **Web page: Landslide Monitoring (USGS)**

- **USGS Film - RIDING THE STORM - Landslide Danger in the San Francisco Bay Area**
CHAPTER 13. FRESH WATER: STREAMS, LAKES, AND GROUNDWATER

Chapter 13 Learning Objectives

EarthSci_LecturePPT_Ch13_final.pptx

Narrative

Video: River Meanders

Video: Groundwater Removal

Real World Videos

Video: Diatom Algae Populations Tell a Story about Climate Change in Greenland

Video: Flash Floods: USGS Against the Water

Video: Groundwater, a Source to Streams in the Ozark Plateaus

Video: Growing Plains

Video: GSNI Karst Aquifers

Video: Post-fire Flash Flood in Coronado National Memorial

Video: Post-wildfire Flood and Debris Flow: 2014 Silverado Fire

Video: Water-level Change in the High Plains Aquifer System

Video: Geyser Eruption

Video: California Drought

CH 13 FLASHCARDS

Website: What is river and stream erosion? (AGI)
<table>
<thead>
<tr>
<th>WEEKLY ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CH 12 Practice Quiz (Optional)</strong> 25 pts</td>
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<tr>
<td><strong>CH 13 Practice Quiz (Optional)</strong> 25 pts</td>
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<tr>
<td><strong>GEOTOUR Discussion #4</strong> Mar 16</td>
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**WEEK 11 | PART II. EVER-CHANGING LANDSCAPES (CHAPTER 14)**

**CHAPTER 14. LAND OF EXTREMES: DESERTS AND GLACIERS**

- **Chapter 14 Learning Objectives**

- **Rivers-Narrated Google Earth Tour Instructions**

- **EarthSci_LecturePPT_Ch14_final.pptx**

- **Animation: Glacial Dynamics Advance and Retreat**
Narrative

- Video: Evolution of Deserts

Real World Videos

- Video: Mathematician Uses Skills to Study Greenland’s Retreating Glaciers
- Video: Satellite Tracks Saharan Dust to Amazon
- Video: Snow Leads Sea Ice Follows
- Video: Greenland’s Glaciers as Seen by RadarSat
- Video: Rapid Glacier Change
- Video: Drumlin Hunting in Iceland

CH 14 FLASHCARDS

- Web page: Glaciers and icecaps: Storehouses of freshwater (USGS)
- Video: How do glaciers shape the landscape? Animation from geog.1 Kerboodle (Oxford Education)
- Video: Erin Pettit: Glaciers on the Run | Nat Geo Live (National Geographic)
- Video: Yosemite Nature Notes - 12 - Glaciers (yosemitenationalpark)

WEEKLY ASSIGNMENTS

- CH 14 Practice Quiz (Optional) 25 pts

Rivers-Narrated Google Earth Tour Dropbox
Mar 23 | 10 pts
### Chapter 15 Learning Objectives

- **EarthSci_LecturePPT_Ch15_final.pptx**

#### Real World Video

- [Video: Dead Zones of the Pacific Northwest](#)
- [Video: How El Nino Impacts Marine Plant Life](#)
- [Video: Harnessing Wave Energy to Light Up Coastal Communities](#)
- [Video: The Ocean a Driving Force for Weather and Climate](#)
- [Video: The Ocean a Driving Force for Weather and Climate](#)

#### CH 15 FLASHCARDS

- [Web page: Ocean Currents (NOAA)](#)
- [Web Page: Waves (NOAA)](#)
- [Web page: Currents, Waves, and Tides: The Ocean in Motion (Smithsonian)](#)
- [Video: Tides: Crash Course Astronomy #8 (CrashCourse)](#)
- [Video: Ocean Currents (NOAA Ocean Explorer)](#)

### Chapter 16. Ocean Basins and Coasts

- **Chapter 16 Learning Objectives**

#### Animation: Living With the Coast

#### Real World Video

- [Video: Fly Over the Seafloor: Central California](#)
WEEK 13 | PART IV. A BLANKET OF GAS: EARTH'S ATMOSPHERE (CHAPTER 17)

Prerequisites: WEEK 12 | PART III. RESTLESS SEAS (CHAPTERS 15 & 16)

CHAPTER 17. THE AIR WE BREATHE: INTRODUCING EARTH'S ATMOSPHERE

- Chapter 17 Learning Objectives
- EarthSci_LecturePPT_Ch17_final.pptx

Real World Video
- Video: Ozone Minimum Concentrations, 1979-2013
- Video: Black Carbon: Asia's Plain of Air Pollution

CH 17 FLASHCARDS

Video: The Atmosphere (Bozeman Science)

Web page: Weather & atmosphere education resources (NOAA)
WEEKLY ASSIGNMENTS

- **CH 17 Practice Quiz (Optional)**
  24 pts

- **GEOTOUR Discussion #5**
  Apr 06 | 10 pts

WEEK 14 | PART IV. A BLANKET OF GAS: EARTH’S ATMOSPHERE (CHAPTERS 18 & 19)

CHAPTER 18. WINDS OF THE WORLD: EARTH’S MAJOR WEATHER SYSTEMS

- **Chapter 18 Learning Objectives**
- **EarthSci_LecturePPT_Ch18_final.pptx**

Real World Video

- **Video: CASA Radar Tracks Tornadoes Up to the Minute**
- **Video: El Niño and La Niña Explained**
- **Video: Hurricane Katrina Hot Towers**
- **Video: Monsoons: Wet, Dry, Repeat**
- **Video: Tracking A Superstorm**

- **CH 18 FLASHCARDS**
- **Web page: Wind (Met Office)**
- **Web page: ENSO (El Nino Southern Oscillation) (NOAA)**
- **Video: Global Atmospheric Circulation (Keith Meldahl)**
- **Web page: What Happens in the Atmosphere During ENSO? (NOAA)**
CHAPTER 19. THUNDERSTORMS, TORNADOES, AND LOCAL WEATHER SYSTEMS

Chapter 19 Learning Objectives

Real World Video

Video: Storm Watchers
Video: Stormy Coasts

CH 19 FLASHCARDS

Web page: JetStream - An Online School for Weather (National Weather Service)
Web page: Severe Weather 101 (NSSL)
Video: NSSL in the Field (NOAAWP)
Video: NOAA National Severe Storms Lab's Radar Research (NOAAWP)

WEEKLY ASSIGNMENTS

CH 18 Practice Quiz (Optional)
25 pts

CH 19 Practice Quiz (Optional)
23 pts

Quiz #5
Apr 13 | 100 pts

WEEK 15 | PART IV. A BLANKET OF GAS: EARTH'S ATMOSPHERE (CHAPTER 20)
**CHAPTER 20. CLIMATE AND CLIMATE CHANGE**

### Chapter 20 Learning Objectives

- **EarthSci_LecturePPT_Ch20_final.pptx**

### Real World Video

- **Video: Eastern U.S. Biological Carbon Storage Potential Assessment**
- **Video: Greenland Ice Sheet Stratigraphy**
- **Video: Rising CO2 Levels Greening Earth**
- **Video: A Year In The Life Of Earth's CO2**
- **Video: NASA's Global Tour of Precipitation**
- **Video: Five-Year Global Temperature Anomalies**
- **Video: Deforestation of Rondonia, Brazil**

### CH 20 FLASHCARDS

- **Web page: Climate.gov (NOAA)**
- **Web page: Sea Level and Climate (USGS)**
- **Web page: Climate zones (Met Office)**
- **Web page: Basic Geography/Climate/Global Climate (WikiBooks)**
- **Video: Climate Zones, Climate Change and Permaculture (Oregon State University Ecampus)**
- **Video: The Ocean: A Driving Force for Weather and Climate (NASA)**
- **Video: Ocean Currents & Circulation | Climate Change, Dr. Ralph Rayner, Chair, GOOS (World Ocean Observatory)**
### WEEKLY ASSIGNMENTS

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<td>CH 20 Practice Quiz (Optional)</td>
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<tr>
<td>GEOTOUR Discussion #6</td>
<td>10 pts</td>
<td>Apr 20</td>
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### Extra Credit

- **Complete All Items**
- **Extra Credit Assignment Instructions**
- **extra credit**
  - Apr 20 | 5 pts

### WEEK 16 | FINAL EXAM

- **Final Exam**
  - Apr 25 | 100 pts