

Alias Course: GEOL271 | Semester Course: GEOL 2710

General Info

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Alias Course Info

Course ID: GEOL271

GenEd Code: 2NS (Tier II Natural Sciences)

Grade Eligibility Code: 01: A-F,WP,WF,FN,FS,AU,I

Course Short Name: EXTREME ANCIENT CLIMATES

Course Long Name: Extreme Ancient Climates

Credit Hours: 3.0

Course Description: Examination of Icehouse, Greenhouse, and Hothouse climates in Earth's past from an Earth System Science perspective.

Course Prerequisites: GEOL 101 OR 211 OR 215 OR GEOG 101 OR 202

Semester Course Info

Course ID: GEOL 2710

Course Prefix: GEOL

Course Number: 2710

Course Short Name: EXTREME ANCIENT CLIMATES

Course Long Name: Extreme Ancient Climates

Department/School: GEOL (Geological Sciences)

College: A&S (Arts and Sciences, College of)

Credit Hours: FIXED | 3.0 hours

Grade Eligibility: 01: A-F,WP,WF,FN,FS,AU,I

Repeat/Retake: NEITHER

Typical Offer Frequency: EVERY OTHER YEAR

Typical Terms Offered: Fall

Course Description: Examination of Icehouse, Greenhouse, and Hothouse climates in Earth's past from an Earth System Science perspective.

Additional Resources:

Outcome Goals:

1. Understand the fundamental workings of Icehouse, Greenhouse, and Hothouse planetary climate states, and when those states have occurred in the geologic past.
2. Grasp the evidence for and proposed origin of the intense global refrigeration episode known as Snowball Earth.
3. Know the leading ideas for why glaciers advance and retreat in an Icehouse climate.
4. Be conversant with the leading theories for forcing a Greenhouse climate to shift to an Icehouse climate, and understand the consequences of that change for life on Earth.
5. Be conversant with the leading theories for forcing a Greenhouse climate to shift to an Hothouse climate, and understand the consequences of that change for life on Earth.
6. Know how and why the building of major mountain ranges can influence global climate. Recognize when this has happened in the geologic past.
7. Know how and why significant shifts in land plant coverage of the land surface such as the origin of land plants, rise of the trees, and rise of the grasslands can influence global climate. Recognize when this is thought to have happened in the geologic past.
8. Understand the consequences to ocean circulation of switching among Icehouse, Greenhouse, and Hothouse planetary states.
9. Understand the importance of Large Igneous Provinces to genesis of intense warming. Know when this can be an effective climate forcing mechanism, and understand the conditions that can offset this influence on climate.
10. Be familiar with examples of rapid climate shifts such as Dansgaard/Oeschger events, Heinrich events, and other millennial scale changes in climate.

Prerequisites

Prerequisite Text: GEOL 1010 OR 2110 OR 2150 OR GEOG 1010 OR 2020

Prerequisites:

No Credit - Sequence: No credit for this course if taken after the following:

No Credit - Duplicate: No credit for both this course and the following (always deduct credit for first course taken):

No Credit - Limit: No credit for this course if the following is taken (keeps credit for the following course, as defined by department):

Course Content

Course ID: GEOL 2710

Course Components:	Type	Contact Hours Per Week	Number of Sections/Year	Default Section Size	Might Be Offered Online	Comments
Primary	Lecture	3.0	1.0	120.0	No	

Course Topics:

Course Topic Notes:

General Education Details

GenEd Code: 2NS (Tier II Natural Sciences)

Remove Code?: Do Not Remove

GenEd Outcome Goals:

1. Students will be able to use an equation or analytic model to predict physical behavior.
 2. Students will be able to provide a scientific explanation of natural phenomenon.
 3. Students will be able to describe (what, who, when and how) a historical scientific achievement that has led to an improvement in their life.
 4. Students will have the background to be able to solve problems related to the natural sciences.
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