DEPAUL | School of Continuing and Professional Studies

Exploring Earth's Physical Features

Spring Quarter 2021

SNC 209 – Exploring Earth's Physical Features (LSP)
SW- 292: *Exploring Earth's Physical Features (SCPS)*

Liberal Studies – Scientific Inquiry · (4 credits)
SCPS – Scientific World – (4 Credits; or 1 or 2 Competencies at 2 or 4 Credits)

Meets: Asynchronously

Location: Online

Dates: March 27th – June 6th 2021

Prerequisites: None.

Course Description

This course advances student exploration of earth's 4.5-billion-year geologic record in order to evaluate the planet's evolution and the interrelationships between humans and landforms. Through the application of scientific reasoning, mathematical inference, and prevailing technologies used by geologists, emphasis is on plate tectonics, geologic time, the rock cycle, weathering, earthquakes, fluvial features, rock structures, volcanoes, mountains, plateaus, plains, glacial features, deserts, caves, and coasts. Students also assess human reliance on landforms, the economics of landforms, and cases of earth pseudoscience. Learning is assessed through labs, fieldtrips, a scientifically-formatted research paper, and contributions to online discussions.

Learning Experience

This online course progresses through 5 geology-themed modules each with two units that employ a combination of readings (text and scholarly articles) and multimedia resources (archived online videos,

United States Geological Survey websites, and National Science Digital Library multimedia). Each unit is one week in duration. Corresponding laboratory exercises and virtual fieldtrips to websites with interactive multimedia alternate every other week with laboratory exercises employing rock specimen kits, field data collections, online geomorphology databases (USGS), as well as online interactive simulations of landform processes (volcanoes, earthquakes, and weathering). Students are required to participate in weekly online discussions that reinforce module concepts and student critical thinking through original contributions and collaborative responses to classmates. Students undertake a structured self-directed fieldtrip to a local landform to conduct an original study centering on a geological hypothesis concerning its origin. Students also complete an original inquiry research paper following a scientific format.

Contents

Instructor Information:

Kevin F. Downing, Professor – DePaul University

Greetings! I am a Professor at DePaul University's college for adult learners, the School for Continuing and Professional Studies. My doctorate degree is in the geological sciences and I have studied the geology and physical features of many interesting places on earth including Pakistan, East Africa, Indonesia, the Caribbean, as well as many parts of the Western U.S. My current research interests include the investigation of Miocene fossil mammals, Evaluating Ocean Acidification Events (OAE) From Fossil Coral Skeletons, and evaluating best practices in online science learning. I have authored numerous publications in geology, paleontology and science education including the co-authored of the book, *Online Science Learning: Best Practices and Technologies*. My academic pursuits resulted in B.S. degrees in Astronomy and Geology (University of Illinois-Champaign), an M.S.T. in Geology (University of Florida-Gainesville), and Ph.D. in Geosciences with a minor in Evolutionary Biology and Ecology (University of Arizona, Tucson). I very much look forward to working with you this quarter as you investigate the processes that have produced earth's remarkable features. Welcome!

Contact Information:

kdowning@depaul.edu
Zoom meetings upon request
Office Phone # 312-476-3618 (for quicker response, use e-mail)

Instructional Materials:

Required Textbook:

Geology: Earth in Perspective (MindTap Course List) 3rd Edition
Authors: Reed Wicander, James S. Monroe
Published: © 2021
ISBN-10 : 0357117336
ISBN-13 : 978-0357117330
Pages: 480 Various Paper and Digital Versions available
Publisher: Cengage Learning

Purpose and Connection of the Textbook:
The textbook is a good introduction to concepts in physical geology that form the basis of exploring the origin, character and distribution of earth's landforms. The textbook core readings parallel the module themes of the course.

Required Lab Resource:

Rock Kit with 15 Specimens, (3) Different Rock Types & Magnifier. Available for purchase through the through geology.com. http://geology.com/store/collections/rock-kit.shtml (approximately $15.99).

Purpose and Connection of the Rock Kit:
The rock kit is used in a course lab activity and will provide you with hands-on experience with the chief rock types of earth that comprise the features of earth.

Additional Resources:

Core Videos: (embedded in course, no purchase required):
How the Earth Was Made (History Channel) (2008)

Purpose and Connection of the Videos:
The How the Earth was Made videos provide a visual and conceptual examination of several of the key module themes. They will be used as a part of virtual fieldtrip activities.

Course Website. The complete course learning materials, discussion forums, and additional resource links including supplementary videos are available through the course management system used by DePaul, D2L™.

Writing Resources. DePaul offers a comprehensive suite of services for students to assist in their writing activities through the University Center for Writing-based Learning (UCWbL) at: http://condor.depaul.edu/writing/index.html . In particular, students may request an appointment with Writing Tutors to get detailed feedback regarding an assignment such as their research paper.

Liberal Studies Program Learning Objectives:

This course will enable students to achieve the Liberal Studies Program learning outcomes for the Scientific Inquiry Domain (SI-elective courses). The table below summarizes these outcomes.

Category	***Learning Outcomes for Scientific Inquiry-Elective (SI-Elective) courses***
Scientific Inquiry Domain (SID-1)	***1. Students will be able to apply appropriate concepts, tools, and techniques of scientific inquiry.***
Scientific Inquiry Domain (SID-2)	***2. Students will be able to describe how natural scientific, mathematical, and/or computational methodologies function as mechanisms for inquiry.***
Scientific Inquiry Domain (SID-3)	***3. Students will be able to explain the interaction between the content of their SI-Elective course and other scientific disciplines or the broader society.***

The following table describes how Liberal Studies Learning outcomes will be fostered and demonstrated by students in *Exploring Earth's Physical Features.*

Learning Outcome	***Demonstration***
(SID-1)	You will gain an understanding of the major principles guiding modern scientific thought and inquiry. You will be introduced to the principles of scientific inquiry in course readings as well as engage in making observations, developing hypotheses, formulating predictions and undertaking procedures (i.e., experimentation) to verify or falsify predictions about earth's physical features in course activities such as labs, research papers and a fieldtrip. You are required to develop proficiency in content areas and apply the concepts, tools and/or techniques of: the general physical characteristics of earth, plate tectonic theory, geologic time, rock types and the rock cycle, chemical and mechanical weathering, gravity flows and earthquakes, hydrodynamics and river features, rock structures, volcanoes, mountains, plateaus, plains, glacial features, coasts, shorelines, ocean physiography, deserts, caves, biogeography, geographic information systems, human dependence on landforms, and the economics of landforms.
(SID-2)	The Exploring Earth's Physical Features self-directed fieldtrip requires you to identify a plausible research question/hypothesis through examination of current scholarly literature. You will determine and apply an appropriate methodology to address the question, collect data at the selected natural area or museum, analyze your results with regard to falsification or support of your hypothesis and indicate your study's caveats and conclusions. The research paper assignment parallels this strategy but you are required to obtain your data via the literature (i.e., versus field data). You communicate your research and experimentation following a science journal format that includes the sections: abstract, introduction, literature review/statement of problem, methods, results, discussion, conclusion and references. The format of these learning activities necessitates that you make the crucial distinction between your results and your subsequent interpretation and conclusions drawn from results. The conveyance of geological theories and content in labs also centers on testing hypotheses, including multiple working hypotheses. In this way, you experience how natural science methodologies support human inquiry. The conveyance of geological theories and content in labs also centers on testing hypotheses. For example, in the plate tectonics lab, you must develop your own hypothetical world that functions according to plate tectonic principles. In the weathering and erosion lab, you make field observations and measurements of local chemical and physical

	weathering and deduce the processes involved. The survey of North American landforms has You compare and contrast expert interpretations for the origin of some of the most significant landforms. Lastly, in the landforms and natural resources lab, you summarize regional resources based landform distribution and estimate the supply and value.
(SID-3)	You will understand and appreciate the interrelationships among the course content, other disciplines, and societal issues. Geology is a science that draws technologies and tools from a variety of other sciences and engineering fields to address research questions. Through labs and online fieldtrips that emphasize interactive media, you will be introduced to and gain an applied appreciation for technologies that contribute to solving problems involving earth's chronology (radiometric dating), the internal structures of earth (seismographs and geo-modeling), formation of representative landforms (simulations), and geological and resource mapping (global information systems). These learning activities will also demonstrate how our knowledge of earth's physical development has been improved by iterative waves of technology (e.g., advancement of seismology) and as a product of human exigency for improved knowledge to prevent disaster. You will understand and appreciate the role of science in society and in your life. In readings, course multimedia and assignments, you will regularly consider how the field of geology contributes broadly to human concern and understanding such as geologic hazards (earthquakes, volcanoes, landslides, tsunamis), natural resource reserves (energy, water, soils, minerals), the evolution of earth and the context of the human species as well as biogeography (habitability of landforms for humans and other species). This course makes detailed use of multimedia and articles from approachable and enduring online resources such as Geology.com and the National Science Digital Library (NSDL). Likewise, interesting weekly stories ("earth science current events") are linked on the D2L site under 'news' so you can read popular reports about the latest earth science findings. This learning strategy of incorporating popular resources to compliment the course texts and other course materials fosters an ongoing and lifelong appreciation of the natural sciences. You will understand the nature of science, technology, and mathematics. Interpretation of geological phenomena and the geological record constantly advance as geologists make new discoveries and emerging technologies are applied to gather and analyze information. Exploring Earth's Physical Features will regularly review cases of how scientific knowledge of earth has evolved. For example, you will observe how plate tectonic theory began as a controversial idea, but was gradually substantiated by mounting evidence from a variety of fields (e.g., geophysics and paleontology), and can now be confirmed directly by measurements of plate shifts from satellites. Likewise, you will observe that quantitative aspects of geology involving measurements (e.g., age of rocks, seismic activity, geochemical analyses,

	thermal measurements of volcanoes, subsurface extrapolations of geologic features, geologic maps) involve uncertainty (i.e., error, probability and inference). Therefore, they will gain an appreciation for why some phenomena cannot be predicted precisely (e.g., the timing of a major earthquake, landslide or volcanic eruption).

Other Learning Outcomes:

In addition to Scientific Inquiry (SI) outcomes, this course also promotes competence in reflectiveness as well as critical and creative thinking.

Meta-Outcomes	
Reflectiveness:	Student investigation of the physical features of earth in this course will encourage student reflection on important issues addressed by scientists and of interest to humankind. You will tackle questions including: How and when did the earth originate? What forces and processes have acted to shape the planet since its origin? What are the history of the present features of earth and the processes that generated them? What are the interconnections of the physical features of earth to natural resources, societal survival, and human prosperity? Are the processes and features of earth unique in the solar system? In the discussion forums and in the course of written assignments You are guided to consider how the geological perspective of earth's formation and evolution has been produced and how it is (or is not) reshaping your own view of the planet. The desired outcome of this reflection is for You to gain a keener appreciation for your own existence in the context of geologic time.
Critical and creative thinking:	The Exploring Earth's Physical Features course advances the development of critical thinking skills and explores methods of formal inquiry as preparation for lifelong independent research. The course research paper is a key activity to foster critical and creative thinking with its emphasis on generating and evaluating a novel hypothesis based on the review of up-to-date scholarly literature. You must find a 'gap' in our current knowledge of a subject and find a creative means (e.g., methodology) to contribute to closing the gap. In this way, Exploring Earth's Physical Features promotes a broader perspective of research and innovation to solve problems.

SCPS Program - Course Learning Outcomes

FOR CREDIT-HOUR BASED DEGREE PROGRAMS (BAPS-Business Admin; BAPS-Computing; BA-Healthcare Admin; DCM etc.)

Students will accomplish the general learning outcomes for the course as well as the LSP and outcomes described above.

FOR SCPS STUDENTS IN COMPETENCE-BASED DEGREE PROGRAMS ONLY

The following SCPS competencies are offered through the Prehistoric Life course:

S1A
S2B
S2C
S4
S5

The above competencies will be developed as outlined in Table I at the end of this document.

Assessment and Measurement Approaches

Students will be assessed and measured through a variety of approaches in *Exploring Earth's Physical Features* including online discussions, lab reports, a research paper, video summaries, a geologic time exercise, and a fieldtrip report.

Discussions. (200 points). Each unit of the course has its own discussion forum for a total of 10. Discussion forum questions are formulated by the instructor to motivate student interaction and reflection around that week's topics. An excellent response is considered 1) accurate, 2) original, 3) relevant, 4) teaches classmates something, 5) clearly incorporates information from the readings and/or other learning materials, and 6) is well written. Excellent responses add substantial teaching/learning presence to a course and stimulate additional thought about the topic under discussion. Students are required to provide one original discussion contribution for each discussion forum and must include references for any outside sources used. Likewise, students must respond to at least one classmate's contribution for each forum to receive full credit. Failing to respond to a classmate before a discussion is closed may result in a 25% reduction of points.

Lab Reports. (200 points). In alternating units of the course, students undertake lab activities structured to reinforce geology principles and scientific reasoning. The first lab on Earth's Major Topographic Features, Plate Tectonics, and The Rock Cycle has students analyze specimens from a uniform rock specimen kit to sharpen observation and categorization skills. Students also evaluate the plate tectonic model by examining various lines of evidence and generate their own innovative world conforming to the tenets of plate tectonics. In Lab 2 on Weathering and Erosion, students identify measure, evaluate, and discuss features formed by chemical weathering, physical weathering, gravity movements, and erosion near where they live. In Lab 3, students research and

evaluate data for representative regional physical features of North America including the characteristics of their distribution and geologic origin. In Lab 4 on The Relationship between Landforms and Natural Resource Distribution, students investigate the geological origin of natural resources as they relate to landforms, calculate the statistical occurrence of natural resources within a region in order to determine reserves and their valuation, and discuss the relationship of the resources to the quality of life in nearby communities.

Research Paper Topics, References, and Final Draft. (250 points). Students are provided detailed guidelines for writing a scientifically formatted research paper. Early in the course they are required to submit their research question and approach whereas their final draft is due near the end of the course. An excellent research paper has the following qualities: 1) the research question is original and relevant; 2) paper adheres to the required scientific format; 3) resources are scholarly and relevant; 4) scholarly information is integrated and synthesized; 5) citations are of proper format and used consistently; 6) information is evaluated reasonably and critically; 7) corresponding conclusions are consistent with preceding information and arguments.

Virtual Fieldtrip Reports. (100 points). Students are required to work through exercises, review, evaluate, and reflect on interactive online multimedia that reinforces module topics. An excellent virtual fieldtrip summary has the following qualities: 1) a summary of the key concepts presented, 2) specific examples such as determination of seismic wave arrival, virtual volcano formation, landform simulation results, etc., 3) a reflective statement about how the learning helped the student gain a better understanding of the module, and 4) the summary is well written.

Landform Field Trip Report. (250 points). Students will undertake a direct scientific investigation to test a hypothesis about the origin and subsequent evolution of a landform of their choice in the region where they live. An excellent report has the following qualities: 1) statement of research question and observations, 2) specific examples of what was observed, 3) detailed results and conclusions, 4) reflection on the results of the learning activity, and 5) information is accurately communicated and report is well written.

Summary of Assignments, Point Values, and Percentages

Grading Category:	Number of Assignments	Point Value Each	Total Point Value	% of Final Grade
Discussions	10	20	200	20%
Lab Reports	4	50	200	20%
Research Paper (Topics and References)	1	50	50	5%
Research Paper (Final)	1	200	200	20%
Virtual Fieldtrip Reports	4	25	100	10%

Landform Field Trip Report	1	250	250	25%
Total			**1000 Points**	100%

Writing Expectations

To assess student learning, the *Exploring Earth's Physical Features* course incorporates several forms of writing assignments including laboratory reports, a research paper following a scientific journal format, virtual fieldtrip reports, weekly online discussion responses, and a self-directed fieldtrip report. There are 4 laboratory reports on the topics of Plate Tectonics, Weathering and Erosion, North American Landforms and Landforms and Natural Resources each of which incorporate worksheets that serve as the template to collect and analyze data, develop summaries and conclusions, and present them in an essay format. The required research paper follows a science journal format and has an expected length of about 2500 words. Four virtual fieldtrip reports of 250 words each are submitted on a standardized form centering on interactive multimedia examples of concepts and student reflection. Students are also required to submit a self-directed fieldtrip report that is structured in a scientific format involving testing a hypothesis through observations and data collection via a local landform of their choice. Lastly, students' weekly discussions conducted online require original written contributions based upon course materials as well as collegial responses to classmate submissions.

Each writing assignment type above has a detailed set of instructions and assessment rubric which is provided to students in the *Exploring Earth's Physical Features* course guide. All writing assignments are expected to conform to basic college-level standards of mechanics and presentation.

Grading Policies and Practices including Late Work

To complete the course, students must fulfill each of the assignments as described in the course and submit them to the instructor by the assigned '**due'** date. In addition, students must participate in the course discussion forum by responding to all instructor requests and by interacting with fellow classmates as necessary. Late assignments will not be accepted beyond the published '**end**' date and points will be deducted for late work that has not been exempted with the instructor (i.e., for medical or significant personal reasons).

Course Grading Scale for *Exploring Earth's Physical Features*

Grading Scale	Percentage	Verbal Descriptor
A	100-93%	Excellent
A-	92-90%	
B+ -> B-	89-80%	Very Good
C+ -> C-	79-69%	Satisfactory
D+ -> D-	68-60%	Poor
F	< 60%	Unacceptable

DePaul University Rubric for Letter Grades

A The instructor judged the student to have accomplished the stated objectives of the course in an EXCELLENT manner.
B The instructor judged the student to have accomplished the stated objectives of the course in a VERY GOOD manner.
C The instructor judged the student to have accomplished the stated objectives of the course in a SATISFACTORY manner.
D The instructor judged the student to have accomplished the stated objectives of the course in a POOR manner.
F The instructor judged the student NOT to have accomplished the stated objectives of the course.
IN Temporary grade indicating that, following a request by the Student, the Assistant Dean for Student Affairs and the Instructor have given permission for the student to receive an incomplete grade. In order to qualify, the student must have:

1. satisfactory record in the work already completed in the course;
2. encountered unusual or unforeseeable circumstances, which prevent him/her from completing the course requirements before the end of the term; and
3. applied to the instructor and to the Assistant Dean for permission to receive the IN. The incomplete will expire within 2 quarters per policy. If the work is not complete, the student will receive a failing grade.

Please note: Grades lower than a C- do not earn credit or competence in the School for Continuing and Professional Studies.

Pass/Fail Grade Policy

Students interested in taking a course on a Pass/Fail grade basis need to contact their academic advisor to request the option by the end of the second week of the course. SCPS students can email their requests to their advisors and include the course number, quarter, and student ID number. Non-SCPS students need to contact their home college for instructions on submitting these requests. Please review the P/F guidelines, course restrictions and GPA implications in the University catalog before making your request. A grade of Pass represents a D or better standard and therefore will not meet requirements that have a minimum standard of C- or better. For further clarification of the P/F option for SCPS students beyond the university guidelines, please refer to the SCPS catalog.

Incomplete (IN) Grade

This process follows university policy.

A student who encounters an unusual or unforeseeable circumstance that prevents her/him from completing the course requirements by the end of the term may request a time extension to complete the work.

- The student must formally initiate the request by submitting the Contract for Issuance of Incomplete Grade form (via email, word doc), no later than week 10 (or prior to the final week

of a shorter-term course).

- The instructor has discretion to approve or not approve the student's request for an IN grade.
- The instructor has discretion to set the deadline for completion of the work, which may be earlier but no later than two quarters (not counting Summer term).
- The instructor may not enter an IN grade on behalf of a student without a completed and agreed upon contract.
- The student is alerted that IN grades are not considered by Financial Aid as evidence of satisfactory academic progress.

Rubrics

Discussion Forum Rubric

The instructor expects that students will contribute to discussions each week. For online discussions, the instructor uses the rubrics described below (modeled after Pelz, 2004). Take this into consideration as you prepare and participate in class discussions.

Level	Interpretation	Character of the Contribution
4	Excellent	The comment is 1) accurate, 2) original, 3) relevant, 4) teaches us something, and 5) is well written (where posted online). Four-point comments add substantial teaching presence to a course and stimulate additional thought about the issue under discussion. Likewise, a response to another student's postings should also have these qualities.
3	Above Average	The comment lacks at least one of the above qualities, but is above average in quality. A level 3 comment makes a significant contribution to our understanding of the issue being discussed.
2	Average	The comment lacks two or three of the required qualities. Comments which are based on personal opinion or personal experience are often within this category.
1	Minimal	The comment presents little or no new information. However, level 1 comment may provide important social presence and contribute to a collegial atmosphere.
0	Unacceptable	The comment adds no value to the discussion.

Lab and Fieldtrip Report Rubric

Level	Interpretation	Character of the Contribution
4	Excellent	The report summarizes addresses and/or has the following qualities: 1) Your observations (what you observed and/or read about during your learning activity). 2) Specific examples of what you observed (e.g., species, habitats etc.) 3) How this learning helped you to gain a better understanding of the course topic. 4) The theories, principles and information reviewed. 5) and information is accurately communicated and report is well written.

3	Above Average	The report lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The report lacks two or three of the required qualities. A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The report presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The report does not demonstrate understanding of the fieldtrip topics.

Research Paper Rubric

Level	Interpretation	Character of the Contribution
4	Excellent	Research question is original and relevant Research question addresses competence(ies) sought in course Paper adheres to the required scientific format Resources are scholarly and relevant Scholarly information is integrated and synthesized Citations are of proper format and used consistently Information is evaluated reasonably and critically Corresponding conclusions are consistent with preceding information and arguments Report is well written (grammar, flow and spelling)
3	Above Average	The paper lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The paper lacks two or three of the required qualities. . A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The paper presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The paper does not demonstrate understanding of the topic.

General Assessment Criteria for All Writing Assignments

All writing assignments are expected to conform to basic college-level standards of mechanics and presentation.

Consider visiting the Writing Center to discuss your assignments for this course or any others. You may schedule appointments (30 or 50 minutes) on an as–needed or weekly basis, scheduling up to 3 hours' worth of appointments per week. Online services include Feedback–by–Email and IM conferencing (with or without a webcam). All writing center services are *free*.

Writing Center tutors are specially selected and trained graduate and undergraduate students who can help you at almost any stage of your writing. They will not do your work for you, but they can help you focus and develop your ideas, review your drafts, and polish your writing. They can answer questions about grammar, mechanics, different kinds of writing styles, and documentation formats. They also can

answer questions and provide feedback online, through IM/webcam chats and email. Obviously, the tutors will not necessarily be familiar with every class or subject, but they are able to provide valuable help from the perspective of an interested and careful reader as well as a serious and experienced student-writer.

Schedule your appointments with enough time to think about and use the feedback you will receive. To schedule a Face-to-Face, Written Feedback by Email, or Online Appointment, visit www.depaul.edu/writing.

News Items and Discussion Forums

Discussion Forums are an important component of your online experience. This course contains discussion forums related to the topics you are studying each week. For requirements on your participation in the Discussion Forums, please see "Discussion Forum" and the "Discussion Rubric" in this syllabus.

A Course Q & A discussion forum has also been established to manage necessary, ongoing social and administrative activities. This is where the management and administrative tasks of the course are conducted, and where you can ask 'process' questions and receive answers throughout the course from the instructor or other students.

Information Area Title	Appropriate Activities
News	Periodically, the instructor may make general postings and updates to course materials (beyond regular updates).
Forum Title	Appropriate Activities
Introductions	A place to tell us a little about yourself and your connection to the course subject matter.
Course Question and Answers	A place for students to ask process questions about the course activities.
Module Discussion Forums	The place to exchange observations and ideas about course topics. Answers and Responses to these forms are assessed and factor into your grade.

Course and Workload Expectations

Workload, Time Management, and Attendance
This online course is not self-paced and requires a regular time commitment each week throughout the quarter. Students are required to log in to the course at least four times a week so that they can participate in the ongoing course discussions. Online courses are no less time consuming than onsite courses. Students will have to dedicate some time every day or at least every second day to their studies. A typical four credit hour onsite course with a lab component at DePaul involves 6 hours of onsite learning. In addition, students can expect to spend at least three to six hours of study and homework per week. Therefore, to work towards an excellent grade in *Exploring Earth's Physical Features*, students should expect to commit at least 10 hours of time spread out through each week of the quarter.

Discussion Forums
Discussion Forums are an important component of a student's online experience. This course contains discussion forums related to the topics students are studying each week. A Course Q & A discussion forum has also been established to manage necessary, ongoing social and administrative activities. This is where the management and administrative tasks of the course are conducted, and where students can ask 'process' questions and receive answers throughout the course.

Online Participation Guidelines
All the discussion that would ordinarily take place in a classroom takes place in the Discussion Boards in your online course. Just as you are expected to attend a course scheduled to take place in a classroom, you must attend to your online course, at least three times a week. This is done by going to the Discussion Board area to read what is written there and to contribute to the ongoing discussion. Note: The D2L system permits the instructor to evaluate the participation level of students.

Course Netiquette
Online discussions are an important part of the course experience. To ensure a positive learning environment, students should follow the guidelines below:

- Be polite
- Respect other participants' views or opinions
- Think before you write, and ask yourself if you would say the same thing in person
- Use positive phrases (i.e., "Good idea!" or "Thanks for the suggestions," etc.)
- Be sensitive to cultural differences
- Avoid hostile, curt or sarcastic comments
- No objectionable, sexist, or racist language will be tolerated
- Create a positive online community by offering assistance and support to other participants.
- Use correct grammar and syntax

Instructor's Role

The instructor's role in this course is that of a discussion facilitator and learning advisor. It is not their responsibility to make sure students log in regularly and submit their assignments. The instructor will read all postings to the general discussion forums but may not choose to respond to each posting. Students will receive individualized feedback to assignments through the D2L assessment system.

Office Hours

As this is an online course there will be no set office hours. Students are encouraged to request a Zoom conference with the instructor to address individualized questions not covered in the Typically, students will receive a response to emailed or posted queries within 48 hours during regular business days. Responses will be usually by e-mail or telephone if prearranged. If you need to communicate with the instructor by phone, this should pre-arranged through e-mail.

Student's Role

Online students must take a proactive approach to the learning. As the course instructor's role is that of a learning guide, the role of the student is that of the leader of their own learning. Students will be

managing their own time to assure completion of the readings, activities and assignments for the course. In addition, students are expected to take a more active role in peer learning expressed in the discussion forums.

Course Schedules

Each Module of this course is two weeks in duration and corresponding units of this course are one week in length except for Unit 10 that extends through exam Week 11.

Course Structure and Module Topics

Date	Module	Unit	Unit Topic	Summary
Week 1	Module 1 Introduction to Earth's Physical Features	1.1	General Characteristics of Earth, Plate Tectonics, and Geologic Time	In this unit and throughout this course, students will learn about and apply the methodology of scientific reasoning to investigate the physical characteristics of life on earth from its onset to the origin of modern landforms. In Unit 1.1, students will explore the early history of the earth, its internal anatomy, and the concept of plate tectonics that explains how the surface of the earth transforms itself over time. Students will also be introduced to the geological time scale that provides a chronological framework for comprehending the vast intervals encompassed by earth's history.
Week 2		1.2	Rock Types and The Rock Cycle	In Unit 1.2, students will explore the major types of rocks that comprise the surface of the earth as well as the "rock cycle" that serves as a framework to illustrate the complex and interconnected physical and chemical processes that shape landforms.
Week 3	Module 2 Agents of Change: Weathering - Gravity - Energy - Water	2.1	Chemical and Mechanical Weathering, Gravity and Earthquakes	This unit introduces students to key erosional processes that shape the face of the earth, including chemical and mechanical weathering, as well as gravity movements. Another concept this module introduces is hill slope development that can vary dramatically according to prevailing climatic conditions and parent rock. Finally, this unit provides a background to the origin and importance of earthquakes to plate tectonics and landform development.
Week 4		2.2	Running Water and River Features	In this unit, students examine the important role that water movement plays in shaping

				and reshaping earth's physical features. Students also examine the various scales and processes of water movement on continents and near the ocean margins in order to describe and explain the genesis of the resulting water and river-produced landforms.
Week 5	Module 3 Overview and Evolution of Landforms I	3.1	Rock Structures, Volcanoes, & Mountains	This module investigates the landform features of the earth that result from igneous activity, structural deformation by plate tectonics, and deep burial. In Unit 3.1 students investigate selected landforms generated by tectonic activity including igneous features (e.g., volcanoes), rock structures (folds), and earth's mountain belts.
Week 6		3.2	Plateaus, Plains, & Glacial Features	This module provides an overview of plateau, plains and glacial landforms. As a result, students will be able to: 1) observe, describe, and then differentiate plateau, plains, and glacial landforms into groups, 2), examine and interpret plateau, plains, and glacial landforms using geological theories of their origins, and 3) explain development and change in these landforms through geologic time.
Week 7	Module 4 Overview and Evolution of Landforms II	4.1	Coasts, Shorelines, & Oceans	In this unit, students examine and interpret coastal, shoreline, and ocean basin landforms using appropriate geomorphology principles. A key objective is for students to explain development and change in coastal, shoreline, and ocean basin landforms through geologic time as their evolution relates to plate tectonic and climatic processes.
Week 8		4.2	Deserts and Caves	Unit 4.2 advances student investigation of desert and cave landforms including their categorization, origin, and evolution through geologic time.
Week 9	Module 5 Human Dependence on Landforms: Landforms as Natural Resources	5.1	Human Dependence on Landforms	This unit fosters student investigation of the relationship between landforms, natural resources and society. In addition, this unit explores the relationships of biota to landforms (biogeography). As a result, students will have an ability examine and describe the important interconnections between earth's physical features, natural resource distribution, and the quality of human life.

Week 10		5.2	Economics of Landforms	This final unit familiarizes students with landform economics (i.e., economic geology). As a result, students will be able to evaluate and distinguish between mineral occurrences, mineral resources and mineral reserves and be able to discuss the importance of natural resources to a nation's economy.

Course Readings and Supplementary Resources

Module 1	**Week 1**	**Unit 1.1**	**Readings**
		General Characteristics of Earth, Plate Tectonics, and Geologic Time	Read: GEOL (Chapters 1 & 2) Scientific Method
	Week 2	**Unit 1.2**	**Readings**
		Rock Types and The Rock Cycle	Read: GEOL (Chapter 3)
Module 2	**Week 3**	**Unit 2.1**	**Readings**
		Chemical and Mechanical Weathering, Gravity and Earthquakes	Read: GEOL (Chapters 6 & 8)
	Week 4	**Unit 2.2**	**Readings**
		Mass Wasting Running Water and River Features	Read: GEOL (Chapters 10 & 11)
Module 3	**Week 5**	**Unit 3.1**	**Readings**

		Rock Structures, Volcanoes, & Mountain Building	Read: GEOL (Chapters 4, 5 and 9)
	Week 6	**Unit 3.2**	**Readings**
		Plateaus, Plains, & Glacial Features	Read: GEOL (Chapter 13) Learn about: Colorado Plateau (4 minute video)
Module 4	**Week 7**	**Unit 4.1**	**Readings**
		Coasts, Shorelines, & Oceans	Read: GEOL (Chapter 15)
	Week 8	**Unit 4.2**	**Readings**
		Deserts and Caves	Read: GEOL (Chapter 14 and pp. 256-258)
Module 5	**Week 9**	**Unit 5.1**	**Readings**
		Human Dependence on Landforms	Iron Mining (4 min video) Russian Diamonds (16 min video) Geology and Biodiversity (Mendips England Example)
	Week 10 & 11	**Unit 5.2**	**Readings**
		Economics of Landforms	Oil and Gas Formation (3 min) Natural Gas (3 min) Gold Deposits
		Unit 5.3	Readings

		Summary	Reflect of the main issues of the course.

Schedule for Written Assignment and Discussion Forums

Week 1	**Unit 1.1**	**Assignments**	**Online Discussion**
	General Characteristics of Earth, Plate Tectonics, and Geologic Time	**Take Virtual Fieldtrip 1** **Submit Fieldtrip Report 1**	**Forum 0:** **Introductions** **Forum 1.1:** **The Dynamic Earth**
Week 2	**Unit 1.2**	**Assignments**	**Online Discussion**
	Rock Types and The Rock Cycle	**Do Lab 1: Plate Tectonics** **Submit Lab Report 1** **Begin Research Paper**	**Forum 1.2:** **The Dynamic Earth**
Week 3	**Unit 2.1**	**Assignments**	**Online Discussion**
	Chemical and Mechanical Weathering, Gravity and Earthquakes	**Take Virtual Fieldtrip 2:** **Submit Fieldtrip Report 2**	**Forum 2.1:** **Agents of Change**
Week 4	**Unit 2.2**	**Assignments**	**Online Discussion**
	Running Water and River Features	**Do Lab 2: Weathering and Erosion** **Submit Lab Report 2** **Submit Research Paper Topic(s)**	**Forum 2.2:** **Agents of Change**
Week 5	**Unit 3.1**	**Assignments**	**Online Discussion**
	Rock Structures, Volcanoes, & Mountains	**Initiate a Self-Directed fieldtrip** **(Submit the Fieldtrip Report no later than the end of Week 8)**	**Forum 3.1:** **Landforms I**
Week 6	**Unit 3.2**	**Assignments**	**Online Discussion**
	Plateaus, Plains, & Glacial Features	**Do Lab 3: Survey of North American Landforms** **Submit Lab Report 3** **Submit Research Paper references**	**Forum 3.2:** **Landforms I**
Week 7	**Unit 4.1**	**Assignments**	**Online Discussion**
	Coasts, Shorelines, & Oceans	**Take Virtual Fieldtrip 3:** **Submit Fieldtrip Report 3**	**Forum 4.1:** **Landforms II**
Week 8	**Unit 4.2**	**Assignments**	**Online Discussion**
	Deserts and Caves	**Do Lab 4: Landforms and Natural Resources** **Submit Lab Report 4**	**Forum 4.2:** **Landforms II**

		Submit Research Paper Draft (Optional) **Submit Self-Directed Fieldtrip Report**	
Week 9	**Unit 5.1** **Human Dependence on Landforms**	**Assignments** **Take Virtual Fieldtrip 4:** **Submit Fieldtrip Report 4**	**Online Discussion** **Forum 5.1:** **Human Dependence on Landforms**
Week 10	**Unit 5.2** **Economics of Landforms**	**Assignments** **Submit Research Paper Final Draft**	**Online Discussion** **Forum 5.2:** **Human Dependence on Landforms**
	Unit 5.3 **Summary**	**Assignments** **Develop a 200-word summary statement about earth's landforms based on your learning throughout the course.** **Post this statement as a message on the Human Dependence on Landforms Forum**	**Online Discussion** **Forum 5.3:** **Human Dependence on Landforms**

Synopsis of Graded Items

Assignment Order	Graded Item	Discussion (D) Drop Box (DB)	Max. Points	Due Date
	Module Association and Title			
1.	0 Introductions	D	0.0	Middle Week 1
2.	1.1 Dynamic Earth I	D	20	End of Week 1
3.	1.1 Virtual Field Trip 1 Report	DB	25	End of Week 1
4.	1.2 Dynamic Earth II	D	20	End of Week 2
5.	1.2 Laboratory 1 Plate Tectonics	DB	50	End of Week 2
6.	2.1 Agents of Change I	D	20	End of Week 3
7.	2.1 Virtual Field Trip 2 Report	DB	25	End of Week 3
8.	2.1 Research Paper Description/Topics	DB	20	End of Week 3
9.	2.2 Agents of Change II	D	20	End of Week 4
10.	2.2 Lab 2 Weathering and Erosion	DB	50	End of Week 4

11.	3.1 Landforms IA	D	20	End of Week 5
12.	3.1 Self-Directed Field Trip	DB	250	End of Week 7
13.	3.2 Landforms IB	D	20	End of Week 6
14.	3.2 Lab 3 Survey of North American Landforms and Their Evolution	DB	50	End of Week 6
15.	3.2 Research Paper References	DB	30	End of Week 6
16.	4.1 Landforms IIA	D	20	End of Week 7
17.	4.1 Virtual Field Trip 3 Report	DB	25	End of Week 7
18.	4.2 Landforms IIB	D	20	End of Week 8
19.	4.2 Lab 4 The Relationship Between Landforms and Natural Resource Distribution	DB	50	End of Week 8
20.	5.1 Human Dependence on Landforms I	D	20	End of Week 9
21.	5.1 Virtual Field Trip 4 Report	DB	25	End of Week 9
22.	5.2 Human Dependence on Landforms II	D	20	End of Week 10
23.	5.2 Research Paper Final Draft	DB	200	End of Week 10
	5.3 Summary Statement (**Extra Credit**)	D	"20"	Middle of Week 11
	Final Calculated Points		**1000**	

Course Policies

Academic Integrity

DePaul University is a learning community that fosters the pursuit of knowledge and the transmission of ideas within a context that emphasizes a sense of responsibility for oneself, for others and for society at large. Violations of academic integrity, in any of their forms, are, therefore, detrimental to the values of DePaul, to the students' own development as responsible members of society, and to the pursuit of knowledge and the transmission of ideas.

Violations include but are not limited to the following categories: cheating; plagiarism; fabrication; falsification or sabotage of research data; destruction or misuse of the university's academic resources; alteration or falsification of academic records; and academic misconduct. Conduct that is punishable under the Academic Integrity Policy could result in additional disciplinary actions by other university officials and possible civil or criminal prosecution.

Plagiarism

Plagiarism is a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:

- The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.
- Copying of any source in whole or part with only minor changes in wording or syntax, even with acknowledgement.

- Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.
- The paraphrasing of another's work or ideas without proper acknowledgement.
- Resubmitting one's own previous work from a different course or college, without the permission of the current instructor.

Plagiarism, like other forms of academic dishonesty, is always a serious matter. If an instructor finds that a student has plagiarized, the appropriate penalty is at the instructor's discretion.

DePaul University Incomplete Policy

The intent of the Incomplete grade is to allow students extra time to complete their final assignments. This need arises because, in the closing weeks of the course, they have an event of significant magnitude that adversely affects their ability to complete the course, e.g. serious illness, death in the family, overseas deployment, or natural disaster.

You must request an incomplete grade in writing two weeks before the end of the quarter. Incomplete grades will be considered only after you have satisfactorily completed at least 75 percent of the coursework, and you have such an unexpected, uncontrollable event that prevents you from completing your course. Do not assume that you will qualify for an incomplete. Students who are failing the course at the point where they request an incomplete will not receive one, nor will they be granted after the end of the quarter. Incomplete grades are given at the discretion of the instructor.

If you do receive permission from the instructor to take an incomplete in the course, you will be required to complete a contract with the instructor, specifying how you will finish the missing work within the next two quarters (excluding summer). See the Incomplete Grade Contract Form.

Undergraduate and graduate students will have up to two quarters to complete an incomplete. At the end of the second quarter (excluding summer) following the term in which the incomplete grade was assigned, remaining incompletes will automatically convert to "F" grades. Ordinarily no incomplete grade may be completed after the grace period has expired. Instructors may not change incomplete grades after the end of the grace period without the permission of a college-based Exceptions Committee. This policy applies to undergraduate, graduate and professional programs. NOTE: In the case of a student who has applied for graduation and who has been approved for an Incomplete in his or her final term, the incomplete must be resolved within the four-week grace period before final degree certification.

College and University Policies

This course includes and adheres to the college and university policies described in the links below:

Academic Integrity Policy (UGRAD)

Course Withdrawal Timelines and Grade/Fee Consequences

Accommodations Based on the Impact of a Disability

Protection of Human Research Participants

APA citation format

Additional Course Resources

University Center for Writing-based Learning

Dean of Students Office

Additional Considerations

Additional information for the instructor's consideration in planning the syllabus may be provided in this section, especially to address unique programmatic needs.
Recording of Classroom Sessions Conducted via Videoconference tools:

- Synchronous teaching sessions can be recorded by the instructor for educational purposes. These recordings will be made available only to students presently enrolled in the course via password protected links. Links will be posted via the course webpages on D2L and viable for the present term only.
- Students are prohibited from sharing class recordings or disclosing the links to a class session to anyone outside of the course.
- Students have the right to protect their privacy during recordings by appearing in an audio-only mode; pseudonymous usernames can be used by students, if shared offline with the instructor.
- Instructors may retain portions of the recordings that contain their intellectual property consistent with University policy, with students' identifying information removed.

Changes to Syllabus

This syllabus is subject to change as necessary. If a change occurs, it will be clearly communicated to students.

Copyright and Student Privacy

In accordance with DePaul's Acceptable Use Policy, commentary and materials within SCPS Online classes shall not be copied, reproduced or published elsewhere without the express written consent of individuals involved.

Credits

This course was authored by Dr. Kevin F. Downing and designed and produced by the author and staff at SCPS Online of the School for Continuing and Professional Studies of DePaul University.

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Table I

For Students in the School of Continuing and Professional Studies

SCPS students will develop 1 or 2 the following competencies for credit according to their registration:

Competence	Learning Outcome
S1A	*Can explore natural phenomena or the world of everyday experiences using scientific methods, and can use theories to interpret observations.*
S2B	*Can describe, differentiate, and explain form, function, and variation within physical systems.*
S2C	*Can describe, categorize and explain development or change within physical or biological systems.*
S4	*Can describe and explain connections among diverse aspects of nature.*
S5	*Can explain and evaluate the nature and process of science.*

Relationship of this course to the SCPS competencies offered:
The investigation of earth's landforms encompasses many areas of science including physical geology, geomorphology and geography. Landforms vary greatly in scale from a small pond to an ocean, from a hill left by a glacier to a mountain range occupying several continents. Likewise, landforms may arise in a moment as a feature left by a flood or may take millions of years to form, as in the case of a mountain range or canyon. This course will look at the various scales and evolution of landforms. The connection of this learning at the course level to the competencies offered in this course is summarized below.

S1A: Earth's landforms are natural phenomena of a rich variety. This course will have you directly examine and interpret a landform(s) and the processes that generated it using scientific theories and methods.
S2B: In order to understand the enormous variety and complex origins of earth's physical features, geologists observe, describe, and then differentiate landforms into groups. This course will have you examine, identify and distinguish landforms by their features and discern the physical processes generating the landforms.
S2C: Core to understanding the evolution of certain of earth's landforms requires an understanding of how energy, climate, and time act together to alter and sculpt the surface of the earth. In this course you will review the characteristics of geological record to describe, categorize and explain development and change in earth's physical features.
S4: The stability of life on planet earth and the specific quality of life afforded to the human species depends on the distribution and kinds of landforms, as they impact climate, food supply, and natural resources. In this course you will examine the important interconnections between earth's physical features, natural resource distribution, and the quality of human life.
S5: Applying the logic of scientific reasoning is the way that geologists have been able to discern, classify and determine the processes that form and tear down earth's landforms. You will apply scientific reasoning to understand and assess the character and origin of land terrestrial and marine landforms

Competence	***Demonstration***
S1A:	You will satisfy this competence by evaluating an earth landform(s) through direct observation during a self-directed fieldtrip and corresponding report. In addition, you will develop this competence through lab work, in particular the 'Weathering and Erosion Lab', and your competence-specific research paper.

	In all cases, you will apply the current scientific theories and principles that describe earth's landforms and processes.
S2B:	You will satisfy this competence through: 1) lab work on 'Plate Tectonics' and 'North American Landforms', 2) virtual fieldtrips and a self-directed fieldtrip with corresponding report, and 3) your competence-specific research paper. In all cases, you will apply the current scientific theories and principles to describe and differentiate the character of a major group of landforms of your choice (e.g., mountain ranges, cave systems, plateaus, rivers, etc.) and then assess the forms, function, and variation within this group of landforms.
S2C:	You will satisfy this competence through: 1) lab work on 'Plate Tectonics' and 'Landforms and Natural Resources', 2) virtual fieldtrips and a self-directed fieldtrip with corresponding report, and 3) your competence-specific research paper. You will apply the current scientific theories and principles to describe, categorize, and explain development and change in earth's physical features through geologic time as a function of rock type, energy, climate, and time.
S4:	You will explain and illustrate the interconnection of landform distribution and origins to a specific natural resource(s) such as water, metal ores, gold, silver, coal, oil, diamonds, soils, etc., and then describe and analyze the corresponding quality of life afforded by the landform and natural resource. Satisfying this competence will be accomplished through your 'Landforms and Natural Resources' lab, virtual fieldtrips and competence-specific research paper.
S5	You will analyze the types of questions, assumptions and claims of how features on the earth form and evolve such as through macro processes like plate tectonics down to micro scale weathering. You will be introduced to key examples of large-scale features and evaluate the multiple hypotheses of how they formed and remaining uncertainty.