



Course Title: Environmental Geology
Course #: GEOL 1120L

Credit Hours: 4
Semester: Spring 2022
Cap: 10

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Office Hours: M & W 11am – 12:30pm (or by appointment)

Preferred Communication: Email

Modality (face-to-face, hybrid, or online): Face-to-face

Class Location: Face-to-face: Tech 301

Class Meeting Times: Monday 12:30 pm – 4:30 pm. Additionally, special classes will be assigned for extra class hours.

Required Materials:

Textbooks: **Geology and the Environment, 7th Edition** (Required). Bernard Pipkin et al.
Cengage. ISBN: 978-1-133-60398-6

Reading Materials: Will be provided by the instructor

Lab Fee (if applicable): \$125.00

Mission Statement

Navajo Technical University's mission is to provide University readiness programs, certificates, associate, baccalaureate, and graduate degrees. Students, faculty, and staff will provide value to the Diné community through research, community engagement, service learning, and activities designed to foster cultural and environmental preservation and sustainable economic development. The University is committed to a high quality, student-oriented, hands-on-learning environment based on the Diné cultural principles: *Nitsáhákees, Nahátá, Ína, Siihasin.*

Course Description

This course is a survey of environmental geology with an introduction to problems of pollution, population, human relations to the environment, resource use, geologic hazards, and environmental problems. The course covers the major components of the Earth system, i.e. atmosphere, lithosphere, hydrosphere, and biosphere, and how they are related. Environmental Geology addresses the mechanisms that drive these Earth processes, how different parts of the Earth are connected, how matter and energy flow through our environment, and how humans fit into the environmental systems. Emphasis is placed

on the use of the scientific method and the development of critical thinking skills in understanding environmental issues. Lab is an introduction to geologic materials and processes as applied to the human environment. Included are practical exercises with rocks, minerals, topographic and geologic maps, and water, mineral and energy resources. Hazards associated with natural processes will be evaluated.

Course Outcomes	Course Measurements
At the end of the course, students will be able to:	Complete reading assignments, writing assignments, lab activities, exams, and quizzes.
1. Gain a basic understanding of environmental geosciences.	
2. Learn the relationship between geology, human activity, and the environment.	
3. Learn the causes of natural disasters like earthquake, volcanism, and flooding, and what kind of preventative (if any) or mitigation activities are commonly available.	
4. Learn about how mining for minerals or energy can be done in a sustainable manner, and how best to manage waste that we generate.	
5. Participate in a “deep learning” practices that will require making presentations, and active participation in discussions.	
6. Obtain hands-on laboratory experience that supports or supplements what will be covered in the lecture classes.	
7. Effectively communicate (written and/or oral) an interpretation of quantitative and graphical data to evaluate a societally relevant environmental science problem.	

Course Activities

Week	Date	Lecture Topic	Lab
1		Course Overview	No Lab
		Last day to add/drop	
2		Human, Geology, and the Environment	Lab Overview Blue Planet - Movie review
3		The Earth System and Climate Change	Climate Change
4		The Solid Earth	Plate Tectonics
5		Exam #1: Climate, Solid Earth	
		Graduation Petition is due	
6		Earthquakes and Human Activities	Earthquakes
7		Volcanoes	Volcanoes and Supervolcanoes
8		Weathering, Soils, and Erosions	Weathering
9		Exam #2: Cryosphere, Weather	Midterm
		Midterm grades are due	
10		Freshwater Resources	Water Resource-I
		Last day to withdraw with a "W"	
11		Coastal Environments	Water Resource-II
12		Glaciation and Long- Term Climate Change	Glaciers
13		Exam #3 Freshwater, Coastal Environment, Glaciers	
14		Mineral Resources and Society	Rocks and Minerals
15		Energy and the Environment	Energy
16		Exam #4 Minerals and Energy	
17			Finals
		Grades are due to the Registrar	
		Graduation	

Grading Plan

Exams	40%	A = 100 - 90%
Labs	30%	B = 89 - 80%
Quizzes	10%	C = 79 - 70%
Assignments	15%	D = 69 - 60%
Class Participation	5%	F < 60%

Grading Policy

Each student must do his or her own homework assignments and quizzes. Discussion among students on homework assignments is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions - especially on the course's Web site. Students must do their own work on the homework, quizzes, and exam. Cheating and Plagiarism are strictly forbidden. Cheating includes but is not limited to: plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

Participation

Students are expected to attend and participate in all class activities- as listed above, as it is **5% of the grade**. Points will be given to students who actively participate in class activities including field trips, laboratories, and ask questions of guest speakers and other presenters.

Every student is required to have a laptop. Students who don't have laptops, the cost of the laptops will be deducted from their Pell grant and then NTU will purchase laptops for them.

Cell phone and headphone use

Please turn cell phones off or place them on silence or vibrate mode **before** coming to class. Also, answer cell phones **outside of class** (not in the classroom). Exercising cell phone use courtesy is appreciated by both the instructor and classmates. Headphones are to be removed before coming to class.

Attendance Policy

Students are expected to regularly attend all classes for which they are registered. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of his/her responsibility to complete all course work by the required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. **Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.**

Study Time Outside of Class for Face-to-Face Courses

For every credit hour spent in a class, a student is expected to spend two hours (2) outside of class studying the course materials.

Study Time for Hybrid or Blended Courses

For a hybrid or blended course of one (1) credit hour, a student is expected to spend three (3) hours per week studying the course materials.

Study Time for Online Courses

For an online course of one (1) credit hour, a student is expected to spend four hours (4) per week studying the course materials.

Academic Integrity

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor. **The use of another person's ideas or work claimed as your own without acknowledging the original source is known as plagiarism and is prohibited.**

Diné Philosophy of Education

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

Students with Disabilities

The Navajo Technical University and the Environmental Science and Natural Resources program are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability or needs special accommodations should inform NTU in accordance with the procedures of the subsection entitled "Students with Disabilities" under Section 7: Student Support Programs, NTU Student Handbook.

Final Exam Date: May 9, 2022