DOANE UNIVERSITY

SYLLABUS

Course Title	Environmental Geology
Course Number	GEO 101
Number of Credits	4
Course Dates	5/25/20 - 7/25/20
Instructor	Dick Ehrman
Email Address	richard.ehrman@doane.edu
Office Hours/Availability	ONLINE CLASS--no "official" office hours but I will check emails regularly. In addition, I will normally be at/near my computer on Tuesday evenings from about 600-900 PM and Saturday mornings from about 830 AM-1200 noon. If as student desires some other time of availability, I'll do my best to accommodate.
Phone Number	(402) 429-1327. If I don't answer, please leave a voicemail and I'll get back to you ASAP. I do accept texts--but if you text me, please identify yourself as I likely don't have your specific contact info in my phone!
Textbook Information: (e.g. title, edition, publisher, ISBN)	Keller, Edward A. 2012. *Introduction to Environmental Geology* (5th ed.). Upper Saddle River, NJ: Pearson Prentice Hall. 705 p. plus appendices. ISBN-13: 978-0-321-72751-0
Additional Course Materials	You will need to join FlipGrid (free!) for student roundtable discussions. Instructions for doing so will be provided to you in the first week of class.

Course Description	An examination of how geologic processes and hazards influence human activities. The geologic aspects of earth resources and environmental issues related to water, soils, minerals, and fossil fuels are investigated. Hazards such as earthquakes, landslides, flooding, volcanism, and surface deformation are included. A geologic framework for environmental issues, including rocks and minerals, tectonic processes, and geologic time is provided. Upon successful completion of this course, students will demonstrate an understanding of the structure and dynamics of geology, as well as the natural and human-induced changes in geologic systems.
Foundational Area of Knowledge	FAK: Scientific Perspectives Students will work to: ● employ methods of science for inquiry in a scientific discipline ● develop their scientific literacy and ability to critically evaluate scientific information ● consider the ethical and social implications of scientific study and use of scientific findings
Course Learning Outcomes/Objectives	By the end of this course, students will be able to: 1. Describe the scientific method and apply its basic tenets to geology, other sciences, and life in general; 2. Identify the most typical characteristics and properties of earth materials like minerals, rocks, and ores, and assess how these properties impact the environment; 3. Discuss the role of geology in the production, consumption, and management of energy and mineral resources and apply that knowledge to various real-world examples in class as well as in modern life; 4. Explain the major features and history of modern plate tectonic theory as a controlling element in Earth's environment and how those features affect environmental events; 5. Analyze and evaluate various potentially hazardous geologic phenomena such as earthquakes, tsunamis, landslides, volcanoes, and mass wasting, and suggest strategies for dealing with them; 6. Describe the basic geologic factors which contribute to the occurrence of water resources, discuss what modern society can/should do to affect the use and conservation of water, and apply that knowledge to daily life as a water consumer;

	7. Summarize the general history of the Earth and what that tells us about issues such as climate and environmental change; 8. Integrate all of the above information into a coherent outlook regarding what modern society can/should do (socially, politically, fiscally, etc.) to address issues involving geology and the environment; 9. More confidently discuss, consider, and evaluate scientific ideas; and 10. Utilize her/his basic knowledge of geology and the environment to live a more fulfilling and effective life as an individual, parent, spouse, employer/employee, and citizen.
Technology Requirements	https://www.doane.edu/faq/minimum-computer-requirements

Course Schedule

	Course Objectives	**Topic and Module Objectives**	**Assessment/Activity/ Interaction**	**Instructional Materials**
MODULE 1	1, 2 (Note: Objectives 8, 9, and 10 apply to all modules)	Introduction Scientific Method Earth Materials 1. Explain the basic structure of the class. 2. Identify the primary steps in the scientific method.	Readings (MO 1, 2, 3, 4; 6 hours) Self-intro roundtable via FlipGrid (MO 1; 2 hours) Syllabus quiz (MO 1; 2 hours) Quiz 1: Scientific Method, Earth Materials (MO 1, 2, 3; 1 hour)	Keller, Ch. 1, 3 Instructor Intro Instructor Mini Lecture-How to Construct an Argument

		3. Give specific examples as to how minerals, rocks, and ores affect human interaction with the environment.		
MODULE 2	2, 4	Plate Tectonics Earth Materials (cont.) 1. Describe the basic ideas behind modern plate tectonic theory, and give specific examples as to how it affects the geologic environment. 2. Utilize knowledge of earth materials to identify common building materials in your community. 3. Select and begin research on term project	Readings (MO 1, 2; 6 hours) Plate tectonics quiz (MO 1; 2 hours) Visit local site(s); identify at least 4 types of geologic building materials (MO 2; 4 hours) Select and give reasons for selection of term project topic (MO 3; 8 hours)	Keller, Ch. 2, 3 Instructor Intro
MODULE 3	4, 5	Geologic Hazards: Earthquakes Tsunami Volcanoes 1. List and distinguish between some of the geologic factors which control and influence volcanoes, earthquakes, and tsunami, and explore means of dealing with effects on humans.	Readings (MO 1; 12 hours) Geologic hazards quiz 1 (MO 1; 2 hours)	Keller, Ch. 5 (skim), 6-8 Instructor Intro

		2. Continue work on term project: Draft executive summary/abstract.	Draft term project executive summary/abstract (MO 2; 8 hours)	
MODULE 4	5	Geologic Hazards: Surface water/flooding Mass wasting 1. List and explain some of the geologic factors which control and influence flooding and mass wasting, and explore means of dealing with effects on humans. 2. Continue work on term project: List references.	Readings (MO 1; 6 hours) Geologic hazards quiz 2 (MO 1; 2 hours) Provide and describe at least 3 references for term project (MO 2; 8 hours)	Keller, Ch. 9-10 Instructor Intro
MODULE 5	6	Geologic Hazards: Coastal erosion and development 1. Describe the mechanisms of coastal erosion and accretion, and evaluate society's responsibilities to support settlement along constantly changing coastlines. 2. Continue work on term project: finalize executive summary/abstract. 3. Engage with other students to discuss	Readings (MO 1; 3 hours) Geologic hazards quiz 3 (MO 1; 2 hours) Finalize and submit executive summary/abstract for term project (MO 2; 8 hours) Roundtable discussion: What responsibility should society have for development in geologic	Keller, Ch. 11 Instructor Intro

		the advantages and disadvantages of coastal development.	hazard zones? (MO 1, 3; 8 hours)	
MODULE 6	6	Ground Water Quality & Quantity 1. Describe the occurrence of and factors which influence ground water, as well as basic challenges in the quality and quantity of the resource. 2. Continue work on term project: complete project outline.	Readings (MO 1; 6 hours) Ground water quiz (MO 1; 2 hours) Complete term project outline (MO 2; 8 hours)	Keller, Ch. 13, 14 Instructor Intro
MODULE 7	3	Energy Extraction 1. List and describe the different forms of energy extracted from Earth, and evaluate the relative advantages and disadvantages of each. 2. Continue work on term project: open week to complete necessary items; seek/receive instructor feedback. 3. Engage with other students to discuss the advantages and disadvantages	Readings (MO 1; 6 hours) Energy extraction quiz (MO 1; 2 hours) Continue work on term project (MO 2; 8 hours) Roundtable discussion: Green vs. traditional energy (MO 1, 3; 8 hours)	Keller, Ch. 15, 16 Instructor Intro

		of green vs. traditional energy sources.		
MODULE 8	7	Climate change: evidence/history 1. Evaluate the geologic evidence for natural climate change as well as that for modern, human-affected climate change. 2. Make final edits, complete & submit term project.	Readings (MO 1; 3 hours) Climate change quiz (MO 1; 2 hours) Complete & submit term project: 12 hours	Keller, Ch. 18 Instructor Intro

Grading Assessments

Item	Number of Items	Points/Item	Total Points
Quizzes	9	10	90
Roundtables	3	20	60
Site Visit	1	20	20
Term Project--Select & Defend	1	10	5
Term Project--References	1	20	5
Term project--Final	1	50	50
		TOTAL	230

Online Courses ONLY

Online Course

This is an online course and therefore there will not be any face-to-face class sessions. All assignments and course interactions will utilize internet technologies.

Communicating with the Instructor

This course uses a "three before me" policy in regards to student to faculty communications. When questions arise during the course of this class, please remember to check these three sources for an answer before asking me to reply to your individual questions:

1. Course syllabus
2. Announcements in Blackboard
3. The "Question Center" discussion board

This policy will help you in potentially identifying answers before I can get back to you and it also helps your instructor from answering similar questions or concerns multiple times.

If you cannot find an answer to your question, please first post your question to the "Question Center" discussion board. Here your question can be answered to the benefit of all students by either your fellow students who know the answer to your question or the instructor. You are encouraged to answer questions from other students in the discussion forum when you know the answer to a question in order to help provide timely assistance.

If you have questions of a personal nature such as relating a personal emergency, questioning a grade on an assignment, or something else that needs to be communicated privately, contact me via email or phone. My preference is that you will try to email me first. Please allow 24 hours for me to respond to emails Monday-Friday and 48 hours on the weekend.

If you have a question about the technology being used in the course, please contact the Doane University Help Desk for assistance.

Phone: 402-826-8411

Email: helpdesk@doane.edu

Web: http://www.doane.edu

Computer Requirements

Minimum computer requirements for the successful use of Blackboard:
http://www.doane.edu/about-doane/offices/its/help-and-support#min_requirements

Minimum computer requirements for success in this course:

- Reliable computer and internet connection
- A web browser (Chrome or Mozilla Firefox)
- Adobe Acrobat Reader (free)
- Adobe Flash Player (free)
- Word processing software—Microsoft Word or Google Docs
- Webcam and mic

You are responsible for having a reliable computer and internet connection throughout the course.

Email and Internet

You must have an active Doane University e-mail account and access to the Internet. *All instructor correspondence will be sent to your Doane* University *e-mail account.* Please plan on checking your Doane Gmail account regularly for course related messages.

This course uses Blackboard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades. The Blackboard Course Site can be accessed at http://bb2.doane.edu

Submitting Assignments

All assignments, unless otherwise announced by the instructor, MUST be submitted via Blackboard. Each assignment will have a designated place to submit the assignment.

Campus Network or Blackboard Outage

When access to Blackboard is not available for an extended period of time (greater than one entire evening - 6pm till 11pm) you can reasonably expect that the due date for assignments will be changed to the next day (assignment still due by midnight).

Grade Scale

A+ = 97-100% A = 94-96% A- = 90-93% B+ = 87-89% B = 84-86% B- = 80-83%
C+ = 77-79% C = 74-76% C- = 70-73% D+ = 67-69% D = 64-66% D- = 60-63%
F= 59% or below

Participation Policy	A student is expected to be prompt and regularly attend on-ground classes in their entirety. Regular engagement is expected for on-line courses. Participation in class discussions is an integral part of your grade. (Faculty to insert any additional class participation; see resource page for ideas.)
Study Time	Expectation of the amount of time the course requires students to spend preparing and completing assignments. Typically, students could expect to spend approximately 12 hours a week preparing for and actively participating in this 8-week 3 credit hour course. This actual time for study varies depending on students' backgrounds.
Late Work	(Include expectations regarding late work; please see attachment for examples.)
Submitting Assignments	(Include expectations regarding students' submission of assignments, for example, in class or in Blackboard.)
Communication Policy including Assignment Feedback	(State your policy on timeliness of communicating with students and length of time needed before assignments will be graded, e.g. 48 hours.)

Academic Integrity Policy	Doane University expects and requires all its students to act with honesty and integrity and respect the rights of others in carrying out all academic assignments. Academic dishonesty, the act of knowingly and willingly attempting or assisting others to gain academic success by dishonest means, is defined in four categories: Cheating - "Intentionally using or attempting to use unauthorized information or study aids in an academic exercise." Fabrication - "Intentional and unauthorized falsification of invention or any information or citation in an academic exercise." Facilitating Academic Dishonesty - "Intentionally or knowingly helping or attempting to help another to commit an act of dishonesty," and/or coercing others to do the same. Plagiarism - "Intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise," in both oral and written projects. Gehring, D., Nuss, E.M., & Pavela, G. (1986). Issues and perspectives on academic integrity. Columbus, OH: National Association of Student Personnel Administrators For more information on the sanctions for academic dishonesty, please visit the website: https://catalog.doane.edu/content.php?catoid=16&navoid=1333
Academic Support	Please contact academicsupport@doane.edu https://www.doane.edu/graduate-and-adult/academic-support
Disability Services	https://www.doane.edu/disability-services Doane University supports reasonable accommodations to allow participation by individuals with disabilities. Any request for accommodation must be initiated by the student as soon as possible. Each student receiving accommodations is responsible for his or her educational and personal needs while enrolled at Doane University.
Military Services	https://www.doane.edu/graduate-and-adult/military
Anti-Harassment Policy	http://catalog.doane.edu/content.php?catoid=5&navoid=452
Grade Appeal Process	http://catalog.doane.edu/content.php?catoid=5&navoid=238

Credit Hour Definition	Doane University follows the federal guideline defining a credit hour as one hour (50 minutes) of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks (one semester), or the equivalent amount of work over a different time period (e.g., an 8-week term). This definition applies to courses regardless of delivery format, and thus includes in-person, online, and hybrid courses (combination of in-person and online). It also applies to internship, laboratory, performance, practicum, research, student teaching, and studio courses, among other contexts.
Syllabus Changes	Circumstances may occur which require adjustments to the syllabus. Changes will be made public at the earliest possible time**.**