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Geol 12 Natural Disasters Syllabus

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Geol 12 Natural Hazards
Fall 2025 Syllabus

Course Information

Lecture Professor: Dr. A. Shalkowski
Email: anestoria.shalkowski@qc.cuny.edu
Course Code: Geol 12
Course Time: Tue, Thur 12:15 pm - 1:30 pm
Course type: In-Person
Room #: Powdermaker 119
Office Hours: Tuesdays 11 am - 12 pm
Office Location: D211

Course Description

Hazards are a permanent feature in our lives. This course provides you with an overview of hazards (natural and technological), disasters, risk, vulnerability, and mitigation. We will identify natural hazards, examine the mechanisms, recognize the difference between hazards and disasters, and identify the role of hazard mitigation in reducing loss of lives, infrastructure, and property. You will use a variety of tools to apply hazard preparedness in your daily life. Upon completion of this course, you will have gained critical thinking skills to investigate hazard-related problems and to identify appropriate solutions.

This course satisfies the learning outcomes for the science requirement of the Pathways General Education Program QC 1 and QC 2, its associated learning outcomes; as well as, the Scientific World requirement of the Pathways General Education Flexible Core FC 1, FC 2, FC 3 and SW 1, SW 2, and SW 5.This GEOL 12 syllabus by Anestoria Shalkowski is published under a Creative Commons CC BY-NC (Attribution Non Commercial) license.

Book and Course Material

This is an Open Educational Resources Course, funded in part by the CUNY OER Initiative**.**
Reading materials will be sourced from open educational resources, scholarly papers, and research materials published by scholars and practitioners within the fields of environmental geology, Disaster Risk Reduction, and Emergency Management. Main texts are:
Introduction to Hazards (ITH): https://app.ingemmet.gob.pe/biblioteca/pdf/Amb-11.pdf
Introduction to Disaster (ITD): https://www.preventionweb.net/files/26081_kp1concepdisasterrisk1.pdf
Introduction to Earth Science: https://vtechworks.lib.vt.edu/items/ea151149-ff36-420a-891a-99ea8aa79d27
Please download and read the material before class. The required text will be posted on Brightspace.

Required tools and accounts
Computer, Internet, Google Maps, Brightspace access, Microsoft Excel/PowerPoint/Word, or G Suite account to access Google Drive.

Accommodations for Students with Disabilities

Students with disabilities needing academic accommodations should register with the Special Services Office by emailing QC.SPSV@qc.cuny.edu. The Office of Special Services (SPSV) is dedicated to supporting students with qualifying disabilities under the Americans with Disabilities Act (ADA) by providing reasonable accommodations to ensure equal access. If you have previously received accommodations due to a disability, believe you might have a disability, or have a temporary disability,

please visit the office's website (https://www.qc.cuny.edu/sp/) for more information about the assistance they can offer. Accommodations are not retroactive. It's advisable to register sooner rather than later. You can also contact their office at qc.spsv@qc.cuny.edu or call 718-997-5870 during office hours for help.

Technical Support

If you require technical help with your Queens College email or CUNYfirst account, please contact the Queens College help desk by emailing helpdesk@qc.cuny.edu or visiting their website: https://www.qc.cuny.edu/its/ | https://apps.qc.cuny.edu/HD1/

Technology requirements

1. Access to a computer (with a camera and a microphone – if we need to go online)
2. Access to Google Maps, a spreadsheet, and a word processing program.
    a. QC students have access to the full Microsoft package through: https://www.cuny.edu/about/administration/offices/cis/technology-services/microsoft-office-365-for-education/
    b. Microsoft products (e.g. MS Word and MS Excel), students may use Google brand packages, but instructor support may not be available.

Learning Objectives

The general learning objectives of this course are described below. Upon completion of this course, you will be able to:

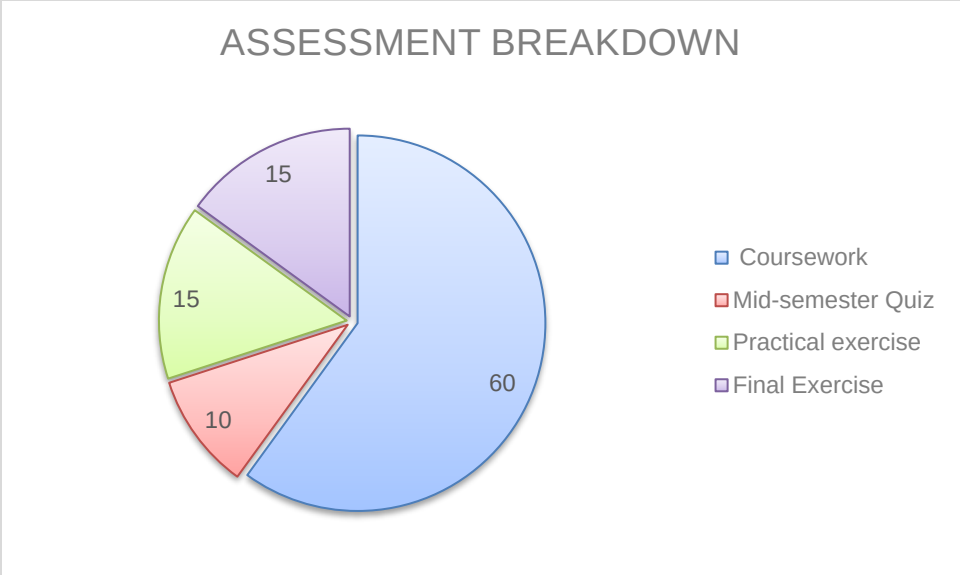
- Collect, interpret, and assess hazard risk and vulnerability information from a variety of sources and points of view.
- Understand and employ the scientific method in real-life scenarios.
- Evaluate evidence collected critically.
- Produce written arguments using evidence to support conclusions.
- Identify and apply fundamental concepts and methods of the interdisciplinary field exploring the scientific world.
- Demonstrate how tools of science, technology, and formal analysis are used to analyze problems and develop solutions.
- Explain the scientific principles underlying matters of policy or public concern in which science plays a role as it relates to hazards and their management.

Your success in this course is important to me. Each student in this class has a unique learning style; therefore, if you find some aspects of this course that limit your learning potential, please let me know as soon as possible. Together, we can develop a strategy that suits your needs and the course specifications.

Assessment

Your grade for this course is divided as follows:

- Coursework - plans (60%)
- Quiz (10%)
- Practical exercise (15%)
- Final exercise (15%)



- **Coursework:** The coursework will be completed during the semester. The coursework will be in the form of 3 plans (Family, Evacuation, and Financial). If an assignment is not submitted when due, it will be deemed late and will receive a 10% deduction. Although students are welcome to work together in preparing their assignments, each student must write and submit their unique document. Assignments must be submitted through Brightspace, as a single file, in PDF format.

- **Mid-semester Quiz:** There will be a mid-semester quiz. The quiz will test for understanding of the lecture's vocabulary and key concepts.
- **Practical exercise:** You have 5 options from which you will pick 1 practical exercise to complete for FEMA certification. The expected completion time is 60 minutes. The options will be posted on Brightspace.
- **Final Exam:** This will be in the form of an exercise with some short-answer questions.

Absences

Class attendance is encouraged to ensure a general understanding of the subject. If you are unable to attend a class, please inform me as soon as possible, and we can arrange an alternate method for you to get the information.

Class Recordings

In the event a class is moved to the online format: Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely to create a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to your profile or video image being recorded, keep your camera off and do not use a profile image. Likewise, students who unmute during class and participate orally agree to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.

General expected behavior online and on campus

Please maintain a professional demeanor when posting online. You can be respectful even when you have a difference of opinion. Treat others as you'd want to be treated yourself. Don't type in all caps, as that is the online equivalent of shouting. If you need to emphasize a word or phrase, use italics. Don't mark emails as "urgent". I read all student emails and will respond to you as soon as possible, generally within 2 business days. You are also expected to abide by the Code of Conduct to prevent behavior that can be disruptive to the campus community. Students are expected to conduct themselves with civility and respect despite differing points of view. Campus community members are expected to always show respect to others.

Below is a list of university policies for your consideration and information:

- Article XV
- Henderson Rules
- Academic Integrity Policy
- Doxing Guide
- Information about Free Speech

If a student has questions or needs assistance, contact the Office of Student Conduct at studentconduct@qc.cuny.edu.

CUNY's Academic Honesty reminder:

CUNY and Queens College consider academic dishonesty as one of the most serious offenses in the academic community. Students are expected to adhere to all academic expectations in the classroom to prevent any actions that violate the Academic Integrity Policy, e.g., cheating, plagiarism, obtaining an unfair advantage by using artificial intelligence (AI) or any outside web services not authorized.

Acts of academic dishonesty include – but are not limited to – plagiarism and/or cheating on examinations and papers, the purchase or sale of academic papers, and the falsification of records. Any student who engages in an activity defined as academically dishonest is subject to disciplinary charges, as is any student who knowingly aids another who engages in dishonest activities. Cheating will not be tolerated in this course. This includes copying any part of your assignment. Copying work from Chegg, CourseHero, or any similar website counts as plagiarism. It's permissible to work together, but **the work you turn in MUST be your work, written in your own words. If even a portion of your work is copied from another student or the internet, you may be referred for disciplinary action.** For a full description of the CUNY policy, see: https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/.

If you are not sure how to cite work you have found on the internet, please review the APA Guidelines provided by the Purdue OWL.

Lecture Schedule

Date	Topic	Reading Sections
8/26/25	Natural hazards	Disaster Risk Reduction pg. 24-33 Hazards pg. 9 -10
8/28/25	Human population growth and Hazards	Hazards pg.15-24, Article (See course notes)
9/2/25	Hazard types and management	Disaster Risk Reduction pg. 10-15, 33-36
9/4/25	The Disaster Preparedness Cycle	Disaster Risk Reduction pg. 37-39
9/9/25	Introduction to Earth System	Earth Sciences pg. 1-8
9/11/25	Biogeochemical cycles	Supplemental Reading
9/16/25	The Rock cycle and plate tectonics	Earth Science pgs. 9-10, 21-39
9/18/25	Project Introduction - Developing disaster plans	Assignment Folder
9/25/25	Earthquake	Hazards pg. 17-25
9/30/25	Earthquake mitigation	Hazards pg. 25-27
10/7/25	Volcanoes and volcanic hazard mgmt.	Intro to Earth Science- pg. 95-110, Hazards pg. 50-53
10/9/25	Tsunamis	Hazards pg. 31-39
10/16/25	Introduction to hazard mapping	Supplemental Reading
10/21/25	Overview of Financial Preparedness	Supplemental Reading
10/23/25	Project Review	In Class Discussion – Bring your project
10/28/25	Meteorological hazards	Earth Science pg. 381-388; Hazards pg. 127-133
10/30/25	Hydrological hazards	Hazards pg. 97-105,
11/4/25	Tropical cyclones	Hazards pg. 65-72
11/6/25	Tropical cyclone hazard management	“ pg. 73-79
11/11/25	Practical Exercise	Instructions in lecture
11/13/25	Overland flooding	Hazards pg. 83-88, Earth Science
11/18/25	Floodplain management	Earth Science: Hazards pg. 89-95
11/20/25	Coastal flooding	Hazards pg.31-40
11/25/25	Mass Movements	Hazards pg.55-64
12/2/25	Wildfires	Supplemental Reading
12/4/25	Climate change	Earth Science Chapter 15 Disaster Risk pg.48-53
12/7/25	Introduction to the Management of Disasters	Disaster Risk Reduction pg. 40-47
12/11/25	Final Exercise	

Please note items in the syllabus are subject to change.

Grading Rubric

Criteria for Content	Percent of Points
Outstanding explanation with superior supporting information; unusual insights and flashes of brilliance; creative and original analyses and thoughts; goes well beyond the minimum required for the assignment	97-100
Good solid job on explanation, with excellent support from data, diagrams, etc.; excellent reasoning, or excellent explanations; goes beyond the minimum required for the assignment	87-96
Satisfactory job; does what the assignment asks; decent reasoning or explanations; decent support by data, diagrams, etc	77-86
Decent explanation, but too general, ***or*** some inaccuracies or flaws in reasoning, ***or*** coverage is accurate but cursory and does not meet the minimum required for a complete answer	67-76
Doesn't effectively address tasks; fails to support assertions with data or diagrams; unclear explanations; inadequate understanding; major flaws in reasoning or explanations	57-66
The answer is missing or does not answer the question	0-56

Criteria for Writing	Percent of Points
Meets criteria for grade of 87-96, but also has a sense of style, going beyond grammatical correctness to real readability	97-100
Excellent paper/paragraph organization, interesting sentences, good grammar, very few spelling errors, does not read like a first draft	87-96
Decent organization; serviceable prose; reads like a first draft; a paper with excellent writing will still earn a 77-86 if it contains many spelling errors and is not proofread	77-86
Disorganized; awkward sentence structure; poor grammar; poor spelling	67-76
Similar problems to grade of 67-76, but worse	0-66

The grading scale used complies with the CUNY standard grade system: A: 100-93%, A-:90-92%, B+:87-89%, B: 83-86%, B-:80-82%, C+:77-79%, C: 73-76%, C-:70-72%, D+:67-69%, D:60-66%, F: 59% or below.

Student Wellness

As a student, there are a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, difficulty concentrating, and/or lack of motivation. Such mental health conditions or stressful events can negatively impact your academic performance and/or reduce your ability to participate in daily activities. QC services are available free of charge. You can learn more about confidential mental health services available on campus at: https://www.qc.cuny.edu/cs/.

Students who would like to obtain counseling support should visit https://www.qc.cuny.edu/StudentLife/services/counseling/Pages/default.aspx. To make an appointment, students should call 718-997-5420 and leave a message with their phone number and CUNY ID. They can also e-mail counselingservices@qc.cuny.edu. For further information, see: https://www.qc.cuny.edu/StudentLife/services/counseling/counseling/