



中央民族大学  
MINZU UNIVERSITY OF CHINA

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**Minzu University of China**  
**GEOL 140 Engineering Geology and the Biosphere**  
**Summer2020**

**Basic Information**

**Class hours:** Monday through Thursday, 2 hours each day  
**Discussion:** Friday, 1 hour (60 minutes)  
**Review Section:** Saturday, 1 hour (60 minutes)  
**Office Hours:** 2 hours (According to professors' teaching plan)  
**Field trip:** Twice  
**Credit:** 4  
**Total contact hours:** 60 (50 minutes each)  
**Instructor:** TBA

**Required materials:**

a.) Textbook: “*Earth: An Introduction to Physical Geology (12th Edition)*” by Tarbuck, Lutgens, Tasa  
b.) Additional readings and journal articles (to be provided) c.) notebook

**Prerequisites**

None

**Course Description and Learning Objectives**

This course introduces students to the science of geology and its relation to other Earth subsystems. It is divided into four major topics: 1) the building blocks--minerals and rocks, (2) the dynamic earth processes--plate tectonics, earthquakes, volcanoes and geologic time, 3) earth surface processes (mass wasting, streams, groundwater, glaciers, deserts, and shoreline), and 4) the impacts of geology on human societal adaptations as they pertain to the earth. The natural processes of the earth are explored, in addition to man's impact to the earth's ecosystems, landscape, water resources, and global climate conditions. Upon conclusion of this course, students will be expected to:

- Understand the fundamental geological principles and theories;
- Identify common minerals and rocks;
- Understand the earth processes such as tectonic plate movements;
- Identify geological structures such as folds and faults;
- Understand the natural and human processes responsible for the evolution of surface landscapes.
- Explain the human effects on river flow, soil erosion, and global climate change.

**Student Coursework Expectations**

This course meets four days a week (Monday – Thursday) for 2 hours, and will consist of 60 contact hours overall. Students are to bring their assigned textbook and notebook to class on a regular basis, and to complete all



assigned work prior to deadlines that will be established throughout the 5-week period that the course meets. Students will also be expected to regularly check their email and their course page on Blackboard for updates and announcements during the five week session.

Material used from the assigned textbook will be the primary basis for learning and understanding the topics for our course. Additional supplemental materials (i.e. readings, videos, assigned worksheets) may also be provided to students to explore the human and natural processes which shape the earth's physical environment. Students will be assigned regular homework assignments, reports after the field trip, and will also be assigned periodic quizzes and two exams to assess learning.

GEOL 140 is structured as a course consisting of two lecture hours and one hour of tutorials, and a field trip every two weeks. Students are required to attend all sessions every week. The lecture sessions will consist of a mix of lectures and interactive class activities, the tutorial sessions will form the basis for applying concepts discussed in lecture, and the field trip will be arranged by instructor according to the teaching plan.

### Evaluation Methods and Grade Distribution

Your course grade will be evaluated on the basis of homework assignments (readings & written assignments), quizzes, reports, a midterm exam, and a final exam. Course components will be weighed in the following manner:

Homework	15%
Quizzes	15%
Report	20%
Midterm exam	20%
Final exam	30%

### Grading Scale

Final Grade Scale	
Percentage	Letter Grade
97 - 100	A+
94 - 96	A
90 - 93	A-
87 - 89	B+
84 - 86	B
80 - 83	B-
77 - 79	C+
74 - 76	C
70 - 73	C-
67 - 69	D+
64 - 66	D
60 - 63	D-
< 60	F



**Attendance, Homework, and Exam Makeup Policy**

Attendance is **required**. Makeup coursework (exams, quizzes, homework extensions) will only be granted if one of the following conditions are met:

You must provide at least one week’s notice to the instructor in the event you have a scheduling conflict, and provide documentation of your scheduling conflict no later than two class sessions following your absence.

In the event of an illness or family emergency, you must notify the instructor prior to your anticipated absence, and provide documentation of the illness or emergency within two class sessions following your absence.

This is a fast-paced course that meets over five weeks, and it is critical for students to be aware of any material that is missed during an absence. Students will be responsible for keeping up with all assigned coursework during the five weeks that the class meets. Credit will not be awarded for exams, quizzes, or assignments that are missed due to unexcused absences.

**Classroom Conduct**

Students are expected to behave in a professional manner while in the classroom. Please be respectful of your thoughts, questions and opinions of others. **Cell phones must be turned off and put away, and laptops are only to be used for classroom learning purposes only.** Students are also expected to refrain from talking to classmates while class is in session. If you are disrespectful or disrupt the class, you will be asked to leave class for the day. Multiple disruptions may lead to a student’s dismissal from the course. In addition, any forms of academic dishonesty (cheating, plagiarism, or facilitating any form of dishonesty) are prohibited and will warrant a student’s dismissal from the course.

**Schedule**

This is a tentative schedule for five-week course, and it will be the student’s responsibility to check for regular updates.

<b>Week 1</b>	Introduction to Earth Systems and Geology
	Tectonic Plates
	Matters and Minerals
	Magma, Igneous Rocks, and Intrusive Activity
<b>Week 2</b>	Volcanoes and Volcanic Hazards
	Weathering and Soils; Human Impact on Erosion and Soil
	Sedimentary Rocks
	Metamorphism and Metamorphic Rocks
<b>Week 3</b>	Geologic Time
	<b>MIDTERM EXAM</b>
	Crustal Deformation
	Earthquakes, Earthquake Hazards, and Human Impacts on Seismicity
<b>Week 4</b>	Earth’s Interior; Mountain Building
	Mass Wasting; Surface Water and Water Pollution
	Groundwater and Contamination
	Glaciers and Glaciation; Deserts and Wind



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<b>Week 5</b>	Shoreline Environments and Coastal Erosion
	Global Climate System and Climatic Change
	Biomes and Ecosystems; Human Impact on Biosphere
	<b>FINAL EXAM</b>

### **Field Trip**

There will be two field trips in this course. In the first field trip, students are expected to learn different minerals and their usages in our lives; identify different rocks, including igneous, sedimentary, and metamorphic rocks, and to learn their properties, composition, classification, and the relations between engineering applications. In the second field trip, students are expected to identify different geological structures, including folds and faults. After each field trip, students shall complete an engineering report including an abstract, an introduction, the field trip findings, site assessment, discussion, conclusion, reference citation, and appendices (if any).