Earth & the Environment
GEOS 110
Spring 2022

LECTURE: MWF (2:50 – 3:50pm); **LAB:** A (8am-9:50am); B (2:50-3:50pm) **Room:** JSC 222

Instructor: Dr. Ken Brown **Email:** kennethbrown@depauw.edu **Phone:** 765.658.6767
Office: Julian 213 **Office Hours**: MWF (11:00am–12:30pm) or by appointment

Textbook: ***Essentials of Geology*** (6th ed.) – Stephen Marshak (recommended -optional);

Additional Online Resources:

http://wps.prenhall.com/ca_ph_tarbuck_IPG_1/25/6460/1654009.cw/-/t/index.html

http://wps.prenhall.com/esm_tarbuck_earth_8/19/5071/1298206.cw/index.html

COURSE DESCRIPTION

This course is an introduction to the basic tenants of the geological sciences. As such, the main goal of this course is to increase awareness and appreciation of the dynamic nature of the Earth, its materials, its evolution through time, and the natural processes that are continuously operating within the Earth and at its surface. This course focuses on a *survey* of Earth systems: plate tectonics, minerals, rocks, volcanoes, earthquakes, water resources, energy resources, etc. Laboratories include an array of related activities (e.g., mineral/rock ID, topographic maps, and earthquake locations).

PRIMARY COURSE OBJECTIVES: At the end of this course, students will be able to:

1. Apply the scientific method to study Earth materials, processes, and features.
2. Collect/use observational, quantitative, and technological data to create evidence-based conclusions appropriate to address geologic problems
3. Characterize the physical and chemical properties of Earth materials and reservoirs.
4. Describe fundamental processes operating at and beneath the Earth's surface.
5. Use quantitative and qualitative data analysis and reasoning for scientific inquiry.
6. Reason and communicate effectively using maps, cross-sections, and/or scientific illustrations

BASIC STUDENT RESPONSIBILITIES: It is your responsibility/expectation to….

- Enjoy the learning process and remain open-minded
- Read, understand, and abide by all of the policies established in this syllabus and the DePauw Student Handbook
- Know when all important assessments and exercises are due
- Complete assessment and assigned exercises by the *due dates/ deadlines*
- Attend class, participate in activities, and engage with course materials both inside & outside of the class
- Check your email DAILY for updates and announcements.
- Attend office hours and ask questions when you don't understand content or directions.

Q-CERTIFICATION:

Students must successfully satisfy *both* of the following criteria to receive Q-certification:

1. Earn an average of 75% (or better) on the Lab Exams & Lab Assignments.
2. Earn a final course grade of 70% or better

LAB FEE: A small lab fee ($20) will be charged to offset costs associated with lab materials.

GRADING:

LECTURE COMPONENT (~50%):

Syllabus Quiz	*25 pts*
Lecture Exam 1	*100 pts*
Lecture Exam 2	*100 pts*
Lecture Exam 3	*100 pts*

LAB COMPONENT *(~50%):*

Lab Assignments	*9 @ 20pts = 180pts*
Lab Quiz #1	*50pts*
Lab Quiz #2	*50pts*
Lab Quiz #3 (comprehensive)	*50pts*
Total points:	**655 pts**

Letter Grade	Percent Range
A	100.00 - 93.00
A-	92.99 - 90.00
B+	89.99 - 87.00
B	86.99 - 84.00
B-	83.99 - 81.00
C+	80.99 - 78.00
C	77.99 - 75.00
C-	74.99 - 72.00
D+	71.99 - 69.00
D	68.99 - 66.00
D-	65.99 - 63.00
F	<62.99

STUDENT FEEDBACK: Timely and adequate feedback is essential to student learning. Thus, I will strive to provide ample feedback on your work, offering constructive comments and ways to improve. It is *your responsibility to regularly check with your instructor about your progress in the course.*

ATTENDANCE: Regular attendance is required and is important to your success in this course. That said, students are expected to attend in-person class sessions. *If you miss /skip class, you will be held responsible for all of the content (and announcements) that you missed during your absence. Please email and/or visit your instructor if you miss class. Lectures & labs will not be recorded. During course meetings, students are expected to participate and remain engaged; distracting behavior will not be tolerated. Course slides are posted in Moodle for your convenience.*

SYLLABUS QUIZ: Understanding course expectations and student responsibilities are important for any student enrolled in a university course. As such, students will complete a brief quiz during the first week of classes that acknowledges course responsibilities and expectations. Questions from this quiz come directly from the syllabus. Upon reading the syllabus, you will need to complete this quiz in Moodle. *The due date is outlined in the lecture calendar (see page 5).*

LECTURE EXAMS: Exams assess your understanding of lecture concepts and vocabulary. Although Lecture exams are not comprehensive, the concepts found in one section/chapter may require you to have a working knowledge of previous concepts and vocabulary from earlier sections/chapters. *If it is covered in lecture, an assigned reading, or an assigned video – you are responsible for knowing it*. During the semester, you will have three lecture exams. The final exam may not be taken at any other time than the officially scheduled time. No make-up exams will be given without proper approval by the instructor. Approved make-up exams are taken during office hours in advance of the exam (by appointment).
Exam dates are outlined in the lecture calendar (see page 5).

LAB ASSIGNMENTS: We will complete nine lab assignments this semester. *These labs are linked to lecture topics, course objectives (see page one), and are aligned with Q-certification requirements*. As such, students are expected to participate and complete these by their respective due dates. *These lab assignments are outlined in the lab calendar (see page 6). Labs submitted late will be penalized 25% for each day late.*

LAB QUIZZES: To assess your comprehension and ability to apply lecture/lab content, you will be asked to complete three lab quizzes (Quiz #3 is comprehensive). These quizzes will require you to perform an array of tasks (e.g., make observations, interpret diagrams, classify minerals/rocks, and perform calculations). *Similar to lab assignments, these quizzes are linked to lecture topics, course objectives, and are aligned with Q-certification requirements. The dates for these quizzes are outlined in the lab calendar (see page 6).*

ADDITIONAL COURSE POLICIES AND INFORMATION:

EMAIL: If you cannot meet during office hours, please email your instructor. *Emails sent after 5pm may not receive a response until the next day. Emails sent over the weekend may not receive a response until the following weekday (Monday). Please respect this policy and plan accordingly.*

COPYRIGHT POLICY

All materials provided to you in this course are copyrighted. None of the course materials may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without prior written permission.

INCLUSIVITY STATEMENT:

"A university is a place where the universality of the human experience manifests itself" – Albert Einstein. In keeping with Einstein's viewpoint, the Geosciences program at DePauw is committed to providing an inclusive environment of learning and living that is open to all people and perspectives. It is the policy and practice of this course to create a welcoming environment for all students as well as to address students in accordance with their personal identity. In this course, you will be encouraged to remain open to information, ideas, and experiences shared by other students. For more information about diversity and inclusion at DePauw, please use the following link:
https://www.depauw.edu/studentacademiclife/cdi/

ADA ACCOMODATIONS:

It is the policy and practice of DePauw University to strive to support the student experience and to provide reasonable accommodations for students with properly documented disabilities. If you are eligible to receive an accommodation and would like to request it for this course, please contact student disability services. Allow one week advance notice to ensure enough time for reasonable accommodations to be made. Accommodations are not retroactive. Students who have questions about student disability services or who have, or think they may have, a disability (psychiatric, attentional, learning, vision, hearing, physical, medical, etc.) are invited to contact student disability services for a confidential discussion in union building suite 200 or by phone at 765-658-6267 (studentaccessibility@depauw.edu).

RESOURCES FOR STUDENTS OF COLOR IN STEM:

Students of Color in STEM (SoCiS) is a student organization aimed at supporting STEM students who identify as students of color and members of diverse underrepresented identities on campus. This organization provides these students with a network of students in or interested in a similar major that could be a support system for them academically (tutoring) and socially (mentoring). Please let me know if you would like more information about SoCiS. Join their e-mail list at:
(SoCiS_list@depauw.edu).

ACADEMIC INTERGRITY STATEMENT

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. Cheating, plagiarism, submission of the work of others, etc. violates DePauw's policy on academic integrity. Lapses of academic integrity will be dealt with according to the policies set forth in the student handbook. If you are not sure what constitutes dishonest academic activities, please make sure you discuss any questions you may have with me. The policy is also available at:
http://www.depauw.edu/handbooks/academic/#Toc459018101

As the instructor, I agree:	Your basic responsibilities as the student:
1. To begin and end class at its scheduled time. 2. To respectfully answer questions about the subject matter (i.e. to respect all questions and students). 3. To accept questions before/after the class period and to respond to these accordingly. 4. To promptly notify students of course changes. 5. To be approachable and respectful to students. 6. To provide timely and adequate feedback. 7. To meet with students that schedule office appointments. 8. To teach you fundamental geologic concepts and vocabulary relevant to a career in the Geosciences. 9. To have fun while teaching this course!	1. Remain open-minded about course content 2. Attend our regular class meetings and be prepared for class/lab activities 3. Refrain from any disruptive behavior (talking, texting, phone calls, laptop use). 4. Email/visit your instructor if have questions. 5. Abide by all policies outlined in the syllabus. 6. Respect the opinions, ideas, and experiences shared by other students. 7. Complete all assignments and assessments by their respective due dates/ times. 8. Check email daily for class announcements. 9. Enjoy how cool science can be!

Teaching and Office Hours Schedule – Subject to Change

Dr. Ken Brown

Dr. Ken Brown; SPRING 2022 Teaching/ Office Hour Schedule

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 AM 8:15 AM 8:30 AM 8:45 AM		GEOS 110 A LAB 8:00 - 9:50			
9:00 AM 9:15 AM 9:30 AM 9:45 AM					
10:00 AM 10:15 AM 10:30 AM 10:45 AM					
11:00 AM 11:15 AM 11:30 AM 11:45 AM	OFFICE HOURS 11:00 - 12:30 (or by appointment)		OFFICE HOURS 11:00 - 12:30 (or by appointment)		OFFICE HOURS 11:00 - 12:30 (or by appointment)
12:00 PM 12:15 PM 12:30 PM 12:45 PM	GEOS 320 Petrology LECTURE 12:30 - 1:30		GEOS 320 Petrology LECTURE 12:30 - 1:30	GEOS 320 Petrology LAB. 12:30 - 3:30	GEOS 320 Petrology LECTURE 12:30 - 1:30
1:00 PM 1:15 PM 1:30 PM 1:45 PM					
2:00 PM 2:15 PM 2:30 PM 2:45 PM		GEOS 110 B LAB 2:50 - 3:50			
3:00 PM 3:15 PM 3:30 PM 3:45 PM	GEOS 110A & B LECTURE 2:50 - 3:50		GEOS 110A & B LECTURE 2:50 - 3:50		GEOS 110A & B LECTURE 2:50 - 3:50
4:00 PM 4:15 PM 4:30 PM 4:45 PM	DEPT MEETINGS				

LECTURE CALENDAR (*subject to change*)

MONTH	WEEK	DAY	TOPIC	Reading/ Due Date	
FEBRUARY	Week 1	31-Jan	-	-	FUNDAMENTALS OF GEOLOGY
		2-Feb	Course Introduction	Scientific Method Article	
		4-Feb	Scientific Method	***Syllabus Quiz,*** Chapter 1	
	Week 2	7-Feb	Earth Basics - Solar System Formation (Part I)	Chapter 1	
		9-Feb	Earth Basics - Earth Structure (Part II)	Chapter 1	
		11-Feb	Earth Basics - Earth Structure (Part III)	Chapter 1	
	Week 3	14-Feb	Plate Tectonics: Continental Drift (Part I)	Chapter 2	
		16-Feb	Plate TectonicsTheory (Part II)	Chapter 2	
		18-Feb	Plate Tectonics: Plate Boundaries (Part III)	Chapter 2	
	Week 4	21-Feb	Minerals & Their Properties	Chapter 3	
		23-Feb	Minerals Resources (Part II)	Chapter 3	
		25-Feb	Minerals Resources (Part III)	Chapter 3	
MARCH	Week 5	28-Feb	***TBA***		
		2-Mar	***REVIEW SESSION***		
		4-Mar	***LECTURE EXAM #1***		
	Week 6	7-Mar	Igneous Rocks Groups/Types (Part I)	Chapter 4	BASIC EARTH MATERIALS
		9-Mar	Igneous Rocks Classification (Part II)	Chapter 4	
		11-Mar	Igneous Rocks Differentiation (Part III)	Chapter 4	
	Week 7	14-Mar	Sedimentary Rocks Groups/Types (Part I)	Chapter 5	
		16-Mar	Sedimentary Rocks Classification (Part II)	Chapter 5	
		18-Mar	Sedimentary Rocks Structures (Part III)	Chapter 5	
	Week 8	21-Mar	Metamorphic Rocks Groups/types (Part I)	Chapter 6	
		23-Mar	Metamorphic Rocks Classification (Part II)	Chapter 6	
		25-Mar	Metamorphic Grade/Index Minerals (Part III)	Chapter 6	
	Week 9	28-Mar	**SPRING BREAK**		
		30-Mar			
		1-Apr			
APRIL	Week 10	4-Apr	***Review Session***		
		6-Apr	***LECTURE EXAM #2***		
		8-Apr	**NO CLASS - GSA MEETING**		
	Week 11	11-Apr	Intro to Volcanoes (Part I)	Chapters 4 & 7	FUNDAMENTAL PROCESSES & FEATURES
		13-Apr	Volcanic Hazards (Part II)	Chapters 4 & 7	
		15-Apr	Volcanic Monitoring (Part III)	Chapters 4 & 7	
	Week 12	18-Apr	Geologic Time: Relative Dating	Chapter 8	
		20-Apr	Geologic Time: Absolute Dating	Chapter 8	
		22-Apr	**NO CLASS**		
	Week 13	25-Apr	Crustal Deformation & Earthquakes	Chapter 9	
		27-Apr	Crustal Deformation & Earthquakes	Chapter 9	
		29-Apr	Crustal Deformation & Earthquakes	Chapter 9	
MAY	Week 14	2-May	*Water & Water Resources*		
		4-May	*Water & Water Resources*		
		6-May	*Water & Water Resources*		
	Week 15	9-May	**LAB EXAM REVIEW SESSION**		
		11-May	***REVIEW SESSION***		
		13-May	***REVIEW SESSION***		
	Week 16	17-May	**LECTURE EXAM #3 (1-4pm)**		

LAB CALENDAR (*subject to change*)

MONTH	WEEK	DAY	LAB TOPIC	DUE DATE
FEBRUARY	Week 1	1-Feb	NO LAB	
	Week 2	8-Feb	LAB #1: Exploring Earth's Structure	Due by Fri., Feb. 11th
	Week 3	15-Feb	LAB #2: Exploring Plate Tectonics	Due by Fri., Feb. 18th
	Week 4	22-Feb	LAB #3: Classifying Minerals (Intro)	-
MARCH	Week 5	1-Mar	LAB #3: Classifying Minerals	Due "At End of Class"
	Week 6	8-Mar	*LAB QUIZ #1 (MINERALS)*	
	Week 7	15-Mar	LAB #4: Classifying Rocks (Igneous Rocks)	Due by Fri., Mar. 18th
	Week 8	22-Mar	LAB #5: Classifying Rocks (Sedimentary Rocks)	Due by Fri., Mar. 25th
	Week 9	29-Mar	NO CLASS - SPRING BREAK	
APRIL	Week 10	5-Apr	LAB #6: Classifying Rocks (Metamorphic Rocks)	Due "At End of Class"
	Week 11	12-Apr	*LAB QUIZ #2 (ROCKS)*	
	Week 12	19-Apr	LAB #7: Geologic Time & Geologic Structures	Due by Fri., Apr. 22nd
	Week 13	26-Apr	LAB #8: Earthquakes	Due by Fri., Apr. 29th
MAY	Week 14	3-May	LAB #9: Topographic Maps	Due "At End of Class"
	Week 15	10-May	*LAB QUIZ #3 (Comprehensive)*	