

Grossmont College

# GEOL 220 - Geology of National Parks

Online 16-week class – Fall 2017

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## Course Description:

A geological survey of the landforms, structure, rocks, hazards and ecology of America's National Parks. Each park's geological development through time is explained with special attention placed on the role of Plate Tectonics.

## Prerequisite:

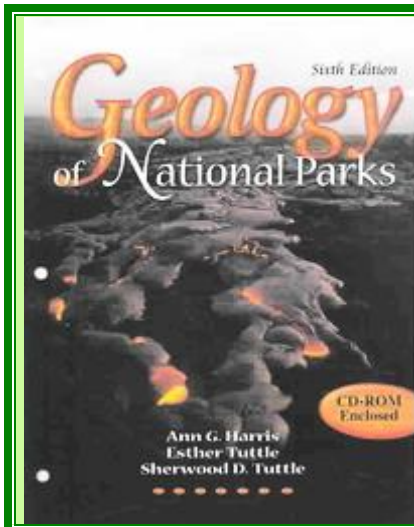
None, but students without any prior geologic course work are advised that they may need to commit extra study time during the overview of fundamental geological principles which occurs during the first two weeks.

## Student learning Outcomes:

At the completion of this course, students should be able to:

- Identify the landforms characteristic of our National Parks;
- Outline the geological history of selected National Parks;
- Comprehend the geological evolution of National Parks within the context of Plate Tectonics and the Supercontinent Cycle
- Classify, analyze and differentiate rocks and rock structures found within various National Parks
- Compare the effects of mechanical and chemical weathering in selected National Parks
- Differentiate mountain building processes as they relate to the National Parks





**RECOMMENDED TEXT:** Geology of National Parks 6<sup>th</sup> ed.; Harris, Tuttle and Tuttle; 2004, Kendall/Hunt Publishing. I recommend the “flexibound” version which is cheaper and comes in a 3-ring binder so that you can rearrange the chapters.

**REQUIRED MATERIALS:** A computer with internet access. You may need a printer, as it may be helpful to print out several dozen pages from various web sites. Most notably: [Lynn Fichter's Geology Pages at JMU](#)

**RECOMMENDED MATERIALS:** Any introductory college textbook on general or physical geology.

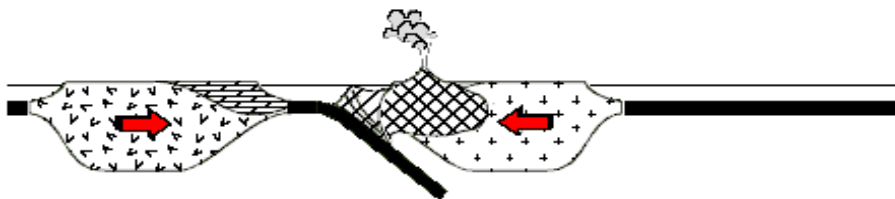


## SCHEDULE of TOPICS:

WEEK	TOPICS (and subtopics)		
1	GEOLOGICAL PRINCIPLES	INTRODUCTION	Orientation, Geologic Time, Principles of Relative Dating
2		GEOLOGIC TIME	Cosmic Origins, Hadean Eon
3		PLATE TECTONICS	Wilson Cycle



4	DIVERGENCE	Continental Rifts	Basin and Range (streams, glaciation, deserts, weathering)	Basin and Range Overview, Grand Tetons, Google Earth Tutorial, Great Basin	
5				Saguaro, Death Valley, Joshua Tree	
6		Passive Margins	Rio Grande and Ancient Rifts (karst topography, continental glaciation)	Guadalupe Mountains, Carlsbad Caverns, Isle Royale	
7				Modern (carbonate sedimentary environments)	<b>EXAM #1</b> Everglades, Biscayne Bay, Dry Tortugas
8				Ancient (streams, stratigraphic principles)	Grand Canyon
9					Canyonlands



9	CONVERGENCE	Subduction	Accretionary Wedgies (coastal processes, alpine glaciation)	Convergence Overview, Olympic
10				Redwoods, Kenai Fjords, Mount Rainier
11			Volcanic Arcs (magmatic differentiation, igneous rocks and structures, terranes)	Crater Lake, Lassen Volcanic, Katmai
12				Lake Clark, Yosemite



13	CONVERGENCE	Collision	EXAM #2 Acadia
14			Great Smoky, Shenandoah
15	TRANSFORM PLATE BOUNDARIES		Channel Islands
16	HOTSPOTS		Hawaiian Volcanoes, Haleakala
17	FINAL EXAM		

## TIPS FOR SUCCESS!

(Adapted from

Kirsten Hargrove)

Successful students in GEOL 220 should be able to:

1. Have regular access to a computer with a reliable/fast internet connection (cable recommended);
2. Complete basic online tasks such as logging into and navigating Blackboard (Bb), download free software, post to discussion boards, attach documents, navigate the internet, and use email;



3. Discipline themselves to log-in/participate frequently, setting aside time in a distraction-free environment to fully complete course requirements to the best of their ability;
4. Take the time to fully read/understand/follow directions. All assignments and papers must be properly formatted, per instructions. Points will be



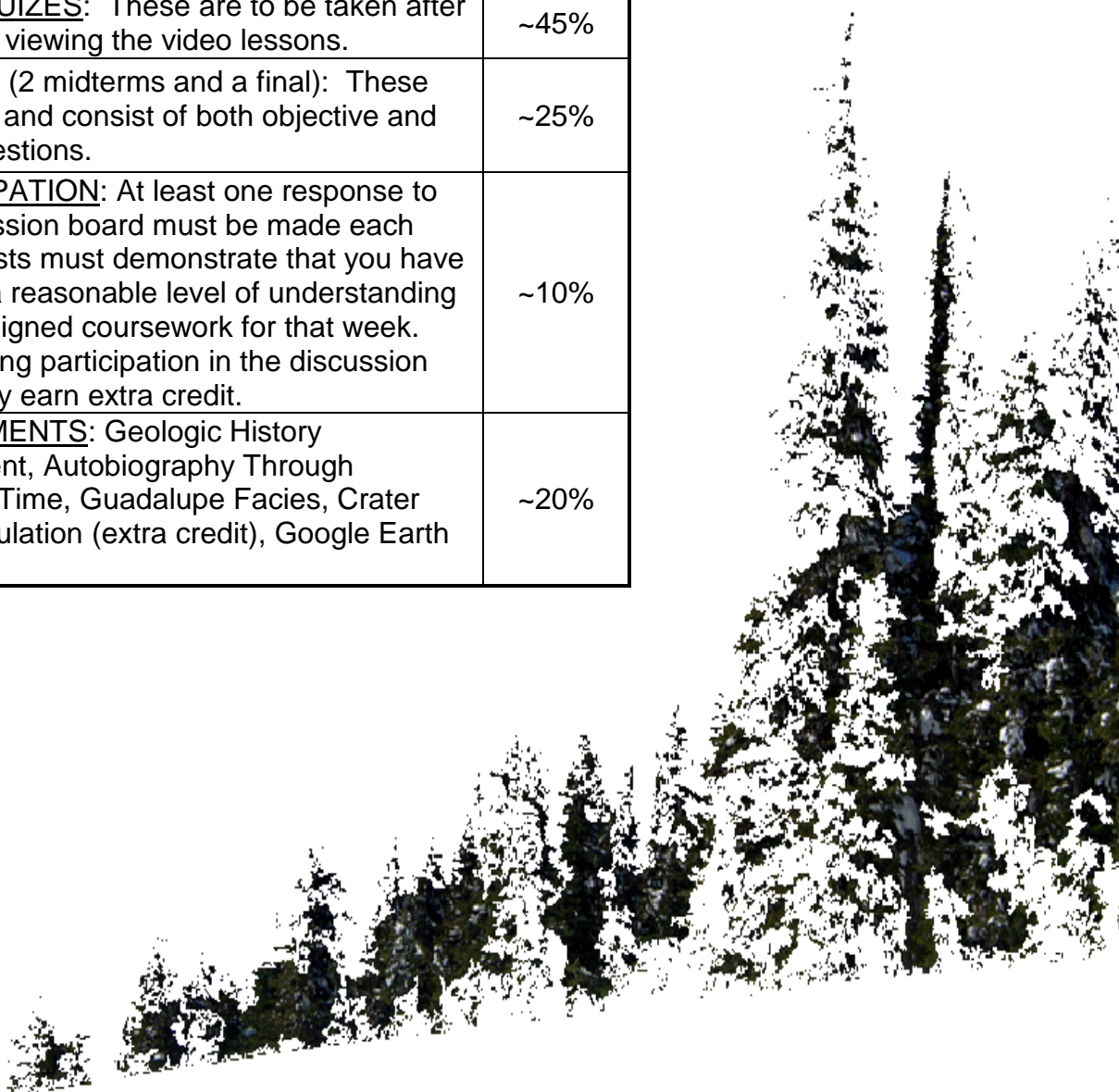
deducted for not following formatting specifications. Postings should be thoughtful, include specific examples and quotes from the material being examined, and provide keen insight and analysis into the topic at hand; and

5. Keep an open-mind to learning online! It can be frustrating at times, but hang in there. You can do it!



## GRADING :

<u>VIDEO QUIZES</u> : These are to be taken after you finish viewing the video lessons.	~45%
<u>3 EXAMS</u> (2 midterms and a final): These are timed and consist of both objective and essay questions.	~25%
<u>PARTICIPATION</u> : At least one response to the discussion board must be made each week. Posts must demonstrate that you have attained a reasonable level of understanding of the assigned coursework for that week. Outstanding participation in the discussion board may earn extra credit.	~10%
<u>ASSIGNMENTS</u> : Geologic History Assignment, Autobiography Through Geologic Time, Guadalupe Facies, Crater Lake Simulation (extra credit), Google Earth .kmz	~20%



85% = A    70%=B    55%=C    45%=D    <45%=F



### IMPORTANT CLASS POLICIES:

Participation is taken very seriously. If you do not participate in the weekly discussion board and/or fail to submit that week's quiz, test, or assignment you will be considered absent for that week regardless of why the material was missed. I will not judge good excuses from bad ones, nor be a polygraph. A student with two weeks of such inactivity may be dropped from the course. It is the student's responsibility to officially drop courses they are no longer attending. If a course is not officially dropped, you may receive an 'F' for the course." No late work of any kind will be accepted.

It is the responsibility of each student to understand the actions and behaviors that constitute academic dishonesty, including plagiarism and cheating, within each class as well as other venues on campus. Students are encouraged to ask questions of instructors and are expected to read the college statement on Academic Fraud (located in the class schedule and at [http://www.grossmont.edu/student\\_affairs/docs/academicFraud.pdf](http://www.grossmont.edu/student_affairs/docs/academicFraud.pdf)). Penalties for actions inconsistent with classroom, library and College expectations for academic integrity range from a failing grade on an assignment, quiz, exam, paper, or project (which may lead to a failing grade in the course) to, under certain conditions, suspension, or expulsion from a class, program, or the college. For more information and/or further clarification, please consult with your instructor or contact the Student Affairs Office.

Students with disabilities who may need accommodations in this class are encouraged to notify the instructor and contact Disabled Student Services & Programs (DSP&S) **early in the semester** so that reasonable accommodations may be implemented as soon as possible. Students may contact DSP&S in person in room 60-120 or by phone at (619) 644-7112 (voice) or (619) 644-7119 (TTY for deaf). <http://www.grossmont.edu/dsps/>

Students requiring reinforcement of concepts or additional help to achieve the stated learning outcomes for a course are referred to enroll in IDS 198, Supervised Tutoring. To add these courses, students must obtain Add Codes from the appropriate staff. Please refer to the Tutoring Section in the current class schedule for contact information.

- IDS-198 Supervised Tutoring – ESL
- IDS-198 Supervised Tutoring – Math
- IDS-198 Supervised Tutoring – Reading
- IDS-198 Supervised Tutoring – Writing

Students enrolled in Grossmont College courses may receive a maximum of two hours of free tutoring per week for each course in which they are enrolled; however, they may receive only five total hours of tutoring per week. Tutors are selected by department chairs and hired by the Tutoring Center. Availability of tutors varies based on tutor availability and funding. Tutors help students by reviewing with them their lecture notes, homework, and study guides; they do not help students with take-home tests or quizzes. Individual or study-group tutoring appointments can be made. Please visit the Tutoring Center (<http://www.grossmont.edu/tutoringcenter/> 619-644-7387 located in 70-202) for details on making and canceling appointments. For all English Tutoring, contact the English Writing Center (EWC) in 70-119 or 619-644-7516. *Earth Science Tutors are available in the Earth Science workroom (37-300A2) by appointment.*



