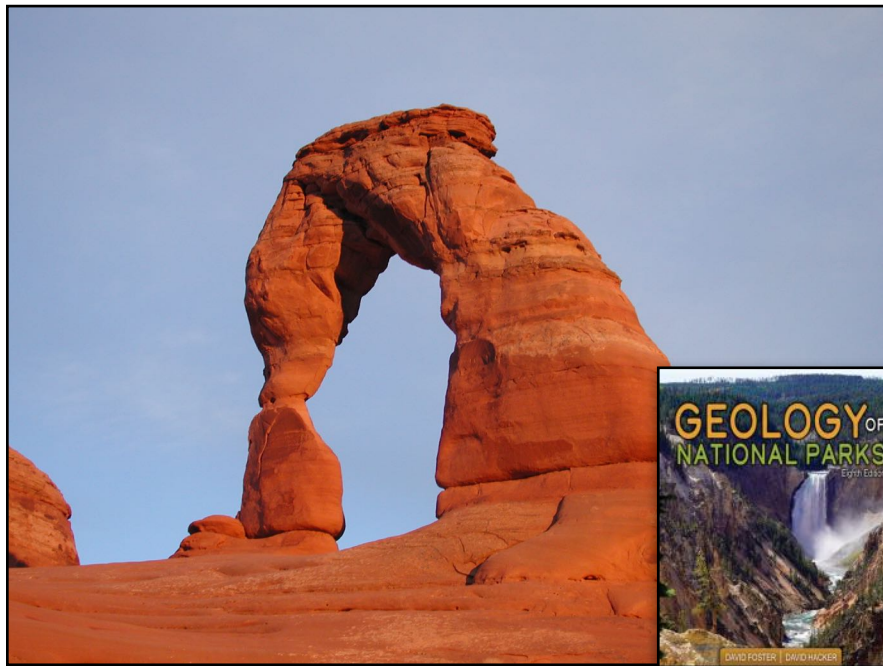


Geology of America's National Parks

Syllabus



Instructor

M. Scott Wilkerson
 Julian 217 • x4666 • mswilke@depauw.edu
<http://www.depauw.edu/academics/departments-programs/envgeo/>

Class:

Julian 222

1:40-2:40 pm MWF

Office Hours

3:00-3:50 pm MWF, stop by, or by appt
 (please knock on my door if it is closed)

Text

Geology of National Parks, Foster & Hacker,
 (2022, 8th ed., Kendall-Hunt)

Suggested Materials

Calculator, ruler, & USB drive

This syllabus is meant to provide an outline for the general flow of the course. At my discretion, I will add or omit topics and/or modify the timetable.

COURSE DESCRIPTION

Study of the geologic history of America via the National Park System. The course focuses on origin and evolution of landforms in various national parks and the geologic processes that created and sculpted them. Park features serve as a point of departure for interdisciplinary discussions on society's impact on the lithosphere, hydrosphere, atmosphere, and biosphere.

COURSE GOALS

To recognize geologic features preserved within the National Park System and use these features as a means to gain an understanding of, and an appreciation for, the dynamic forces that constantly shape and change our evolving planet. By the end of the course, you should be able to identify the major geologic features preserved in each park studied and to describe their origin/evolution.



Upon completion of this course, **students will be able to...**

- develop a love for learning and exude a commitment to continued learning throughout their lives (especially in the context of visiting National Parks with their friends and families throughout their lives).
- recognize various geological features/landforms and explain the process(es) that form them.
- demonstrate knowledge of geologic time and earth history (as recorded in rocks exposed in the National Park System).
- demonstrate knowledge of the physical and chemical properties of Earth materials & reservoirs (e.g., minerals, rocks, soils, water, etc.) that comprise and/or shape features in the National Park System.

DESCRIPTION

This course employs a variety of teaching approaches to maximize student learning of geoscience content in a classroom where different students optimally learn material in different ways. Specifically, of the ~3 hrs/wk of class time that we are together, most of the time will be devoted to lecture/discussion supplemented with active-learning activities with real and/or virtual rock specimens, maps of the parks, and/or Google Earth.

I provide my slides as PDFs on Moodle, so that students can print them out before class and annotate them with notes during class. That way, students aren't scrambling to write down every single word on a slide, allowing them to focus on the content and to participate in the discussion. To facilitate discussion, students must R & R before class (no, this is not "rest & relaxation", but rather "read & retain" the chapter text). The best discussions often arise from student questions about the material (and/or current events highlighted in the media), so **PLEASE ASK QUESTIONS.**

Our lectures may include movie clips, animations, whiteboard drawings, etc., and activities using Google Earth and/or other technologies. The latter is especially important because students not only "see it, hear it", but can "see it, hear it, and then practice it" as well.



GRADES

The basis for final grades is described in the table below. *Extensions/make-up exams/assignments/quizzes will not be given unless there is a documented emergency or unless we have arranged a make-up in advance because of exceptional circumstances.*

All materials to be turned in for a grade must be turned in on time, be clearly written (or typed), use the prescribed file naming convention and file type (if digital file), and be in order (in sequence, pages not backwards or rotated, stapled if paper, etc.). Work that fails to meet these criteria will not be accepted and will receive a "0" (or at my discretion I will stop grading where I encounter an "in order" issue). Quizzes may be announced/unannounced and may cover material from assigned readings, lecture, and/or assignments (*I may have you turn in assignments for a quiz grade to show that you completed the work, but possibly not for an explicit check of your answer(s)*). I will drop 3 assignments/quizzes because there may be absences that are unavoidable (e.g., illness, family emergency, sporting event, etc.) and because "unannounced" quizzes can't be made up without disadvantaging those who were present originally.

Participation. Participation/engagement grades for this course will be based on a "standard" - "sub-standard" system. Everyone starts out with a "standard" grade, and I expect that most of you will finish the semester with this grade. A "standard" grade means you are attending class consistently, and you are participating in a reasonable way during most class sessions. If I judge your participation to be falling into the "sub-standard" range (e.g., excessive absences/tardiness, consistent lack of preparation or participation in activities, electronic distraction, sleeping/lack of attention, frequently getting up in class and/or leaving the classroom during class, etc.), I will explain the issue to you without penalty and will work with you to develop a plan for improvement. If an issue persists, I will explain the issue again and will assign a sub-standard participation grade. Each such sub-standard grade will result in lowering your final course grade by one percentage point.

Percent of Final Grade		Grading Scale	
Exams 1-4	90%	88% to 100.0% = A- to A	(90%-100.0%)
<i>If we have 4 exams, your lowest exam score will be dropped. If we have 3 exams, no exam score will be dropped. In either case, each exam will be 30% x 3= 90%</i>		78% to 87.9% = B- to B+	(80%-89.9%)
Assignments/Quizzes	10%	68% to 77.9% = C- to C+	(70%-79.9%)
		58% to 67.9% = D- to D+	(60%-69.9%)
		00% to 57.9% = F	(00%-59.9%)

KEYS TO SUCCESS IN THIS COURSE

1. **Read the Assigned Chapter** in a distraction-free environment and in advance of lecture over that material. As you're reading, carefully note any questions that you have.
2. **Take Good Notes**. Students with complete notes seem to do better in class. If possible, print out the lecture slides before class and annotate them from the lecture/discussion (including sketches from the whiteboard). Rewriting your notes will make them more legible and orderly, plus it will help you focus on areas that are still unclear. Be careful of falling into "TV-watching mode", as it is easy to look at the pictures and not take down any notes.
3. **Ask Questions**. The only "bad" question is one that is unasked. Because you will be responsible for material in each assigned chapter whether that material is specifically covered during lecture or not, it is essential to ask questions to clarify any concepts that you do not understand. If I forget to call on you while I am in the middle of explaining something in lecture, PLEASE remind me as I most certainly want to answer your questions!
4. **Know the Key Terms** associated with each chapter (these are bold or italicized in the chapter text). If I use a term that you don't understand, PLEASE ASK me to define it.
5. **Use the Glossary** in the back of the book to help understand key terms.
6. **Do Assignments** in a timely manner. If you don't understand something, PLEASE ASK.
7. **Check out the Internet**. There is a world of information on the geology of the national parks out on the Web (e.g., <http://www.nps.gov/>, <http://www.npca.org/>). You also might use a search engine to find web sites of interest.
8. **Use the library**. There are many books & articles in the library that pertain to specific national parks (we have a great interlibrary loan system for other materials that our library does not carry). Also, you will find introductory geology textbooks in the library (see also Wyckoff, J., 1999, Reading the Earth, Adastra West, 352 p.), which will provide helpful information about geologic features and processes. If you are not on campus, PDFs can be sent to you digitally.
9. **Create your own Study Aids**. Some people like to highlight text in the chapter, others like to make flash cards, and still others like to study in groups and discuss the material. Feel free to experiment with what works for you. In addition, The Learning Commons in Roy O. West Library (<https://depauw.mywconline.com/>) has Q tutors and trained people available to help you refine and improve your study habits and techniques.
10. **Study the Material on a Regular Basis**. It is important that everyone maintain good study habits by regularly working with the assigned material. Procrastination and cramming just don't work for most of us...it is best to get comfortable with the material as we go along so that you don't fall behind.
11. **Study for the Exam as an individual and then as a group**. Again, different people study in different ways. I've found that it helps to study as an individual first (thinking about what important concepts were emphasized in each chapter & lecture), then get together with others and study as a group (e.g., asking each other questions, brainstorming about what will be on the test, etc.).
12. **"Success is where opportunity meets preparation."** -Zig Zigler. Preparation in this context means applying a strong work ethic to practice your craft so that you are prepared when the opportunity (e.g., exam, assignment, etc.) presents itself.

FAQ:

Are lecture notes from the slides provided? PDF's of the lecture notes will be available in Moodle. Please bring printouts to class, so that you can annotate them (I commonly go more in-depth than what is on the slides, so you will be responsible for knowing that detail on the exams). Please note that if I post notes from the last time the course was offered, I will post any revised PDF's of the lecture notes before the next corresponding exam.

Can we have an exam review sheet? I have found it much more effective to highlight topics as a preface for each slide set with a "Learning Objectives" slide, so that you are aware of important topics prior to me going over them. While not comprehensive, these Learning Objectives slides are a good first-order framework for assimilating the material.

When will get feedback on our graded work? I usually need at minimum of a week to return graded work (although I'm often much quicker). While I might not always write detailed explanations on graded work, I will orally go over the answers and/or work the problems in class (usually based on student requests). Please ask questions in class or stop by my office if a concept is not clear or if you have a question on how I graded your work. Additionally, you need to give me feedback about how the course is going. It is important that you "rein me in" if I go too fast or if I haven't explained something to where you understand it. Ask questions!!!

Are there other useful resources?

<https://www.usna.edu/Users/oceano/pguth/website/microdem/microdem.htm>
<http://elasticterrain.xyz>
<http://www.gpsvisualizer.com>
<https://www.google.com/earth/desktop/>
<https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer/>

TENTATIVE ORDER OF TOPICS

Week Starting	Lecture Topics <i>last day to withdraw - 3/22</i>	Reading Assignments
01: 01/29	Syllabus/Intro to NP Scientific Method/Seafloor Spreading Plate Tectonics	Preface Introduction
02: 02/05	Plate Tectonics Rocks/Rock Cycle	Introduction <i>Rocks are Gneiss, but Don't Take Them for Granite</i>
03: 02/12	Geologic Time Grand Canyon NP	<i>Geologic Time Parchment (front cover)</i> <i>Scenery...Flat-Lying Rocks</i> Grand Canyon - Ch 02
04: 02/19	Grand Canyon NP Grand Staircase NM Exam #1 (est)	Grand Canyon - Ch 02
05: 02/26	Grand Staircase NM/Zion NP Bryce Canyon NP Capitol Reef NP	Zion - Ch 03 Bryce - Ch 04 Capitol Reef - Ch 05
06: 03/04	Capitol Reef NP Canyonlands NP & Dead Horse Pt SP	Capitol Reef - Ch 05 Canyonlands - Ch 06
07: 03/11 <i>(no class Fri-tentative)</i>	Arches NP	Arches - Ch 07
08: 03/18	Petrified Forest/Painted Desert NP Badlands NP Exam #2 (est)	Pet Forest - Ch 13 Badlands - Ch 14
09: 03/25 <i>(no class all week)</i>	Spring Break (March 26-Apr 03)	
10: 04/01	Mammoth Cave NP Carlsbad Caverns NP	<i>Caves & Reefs</i> Mammoth Cave - Ch 20 Carlsbad Caverns - Ch 22
11: 04/08 <i>(no class Mon-solar eclipse...Univ closed)</i>	Rocky Mountain NP Waterton-Glacier Inter Peace Park	<i>Landscapes Shaped...Glaciation</i> Rocky Mt - Ch 31 Glacier - Ch 32
12: 04/15	Glacier Bay NP Wrangell-St Elias NP Denali NP	Glacier Bay - Ch 37 Wrangell-St Elias - Ch 38 Denali - Ch 40
13: 04/22	M-Exam #3 (est) Yosemite NP	Yosemite - Ch 34
14: 04/29	Mt. St. Helens NM Crater Lake NP Hawaii Volcanoes NP	<i>Volcanic Features</i> Crater Lake - Ch 42 Hawaii - Ch 46
15: 05/06 <i>(last day of class 05/09)</i>	Hawaii Volcanoes NP Yellowstone NP/Grand Teton NP	Yellowstone - Ch 49
Exam #4: Sat, May 11 @ 8:30-11:30 am		
<i>This syllabus is meant to provide an outline for the general flow of the course. At my discretion, I will add or omit topics and/or modify the timetable (i.e., visit some other NPs, NMs, and/or SPs).</i>		

Policy Page

ADA STATEMENT

It is the policy and practice of DePauw University to provide reasonable accommodations for students with properly documented disabilities. Written notification from Student Accessibility Services is required. If you are eligible to receive an accommodation and would like to request it for this course, please contact Student Accessibility Services. Allow one week advance notice to ensure enough time for reasonable accommodations to be made. Otherwise, it is not guaranteed that the accommodation can be provided on a timely basis. Accommodations are not retroactive. Students who have questions about Student Accessibility Services or who have, or think they may have, a disability (psychiatric, attentional, learning, vision, hearing, physical, medical, etc.) are invited to contact Student Accessibility Services for a confidential discussion. Student Accessibility Services can be reached by phone at 765-658-6267 or studentaccessibility@depauw.edu.

ATTENDANCE

Regular and on-time attendance is expected and monitored (see the Student Handbook <https://www.depauw.edu/handbooks/academic/>). As stated in the Student Handbook, excessive absences can be grounds for being dismissed from the course. In addition, it has been my experience that learning comprehension improves dramatically when students are present to listen to lectures, to ask questions, and to discuss the material in the classroom setting. In addition, some activities (e.g., field work) require attendance to receive credit. Should you know that you will be absent (e.g., health issue regarding yourself or immediate family, athletic obligation, etc), please contact me in advance (or ASAP afterwards) to make arrangements about assignments.

ACADEMIC INTEGRITY

Any attempt to gain an unfair advantage over other students in the class will be handled in accordance with established University procedures as described in the Academic Handbook section <http://www.depauw.edu/handbooks/academic/> on Academic Integrity.

DePauw Academic Resources on Academic Integrity

<http://www.depauw.edu/academics/academic-resources/academic-integrity/>

Writing Center Information on Plagiarism:

Plagiarism. Using the words or ideas of another writer, including AI-generated text, without attribution, so that they seem as if they are your own. Plagiarism ranges from copying work not written by the person taking credit for it, to rewriting such work with only minor word changes (mosaic plagiarism),

to summarizing work (including that done by AI) without acknowledging the source. See the Writing Center Guide to Avoiding Plagiarism for further information on plagiarism:

<http://www.depauw.edu/academics/academic-resources/academic-resource-center/w-center/w-center-handouts/>

CELL PHONE/COMPUTER/SMART DEVICE USE

Before class begins, turn off your cell phone (or set it to vibrate) and put it away in your book bag (not in the desk/table). Do not check or send voicemail or text messages during class, and do not leave class to check or send messages unless 1) you have an emergency (inform your instructor prior to class starting of special circumstances involving a personal emergency situation that would require you to use your phone when class is in session) or 2) are on an instructor-designated break. In other words, do not use your cell phone in class for any reason at any time unless you have consulted with the course instructor.

If you have a cell phone/smartwatch on your person or on your desk/table during an exam without the instructor's permission, you will receive a 0 on the exam, and you will automatically be considered in violation of DePauw's academic integrity policy on cheating due to unauthorized use of a cell phone/smartwatch. You may not take your cell phone/smartwatch with you on bathroom breaks during exams.

Please read the following: <http://www.insidehighered.com/blogs/just-visiting/open-letter-incoming-freshmen>

Laptops, tablets, smartwatches, and other electronic devices are not allowed to be used in the classroom except for activities directly related to our course as specified by your instructor (e.g., do not check or send emails, chats, or texts, do not use your web browser except for course-sanctioned activities, do not use to view slides or take notes, etc.). Quit all programs not specifically designated by your instructor (not only reducing temptation, but also helping your computer run more efficiently).

Violating the cell phone/computer/smart device use policy is one way students may be considered not engaged/participating in course activities (see the Grades discussion on participation above).

Policy Page

CLASSROOM BEHAVIOR

- **Early is on time, and on time is late.** (especially on days with activities).
- **Respect everyone.** (yourself, your peers, and your instructor).
- **Listen and contribute.** Lecture and discussion portions of our class can quickly morph to lecture only if you are not an active and contributing participant in class.
- **Work to the best of your ability.** True learning is hard work and is constructed and nurtured by you (not simply transferred from the instructor). A strong work ethic will not only serve you well in this course, but in life in general. Do not settle for less than your best effort.
- **Be aware of consequences (positive & negative).** If you make good decisions (e.g., reading the course materials, taking notes, asking questions, working hard, etc.), you will likely experience good consequences such as enhanced understanding of geoscience processes, improved grades, and general success in life. Conversely, poor decisions (e.g., waiting to cram right before an exam or assignment, pulling an "all-nighter" and coming to class exhausted, relying on energy drinks or other substances, distracting yourself or others with cell phones or laptops, etc.) typically have negative consequences that cause your understanding of course content to suffer.
- **Consider the classroom your workplace.** Once you step inside the classroom, commit yourself to learning as much as you can during that time. Do not routinely get up during class to take care of personal needs (e.g., bathroom breaks, social networking, etc.). Please address these needs during the break between classes. If an emergency occurs, please feel free to leave the classroom to address it.

AUDIO/VISUAL POLICY

- No video, audio, or still picture recordings are allowed during class without the instructor's permission.
- No video recordings, still picture, or other means of duplication (e.g., xeroxing) of homework assignments, labs, exams, etc. are allowed without the instructor's permission.
- You are not permitted to record any of our class meetings. Student Accessibility Service accommodations pertaining to recordings of lectures for taking notes are addressed by the instructor providing handouts of lecture slides/materials on Moodle.
- Materials (or derivative materials) from this course may not be shared, replicated, or published, in whole or in part, or used for any other purpose, without my written approval.

COVID-19 PROTOCOLS

The Fall 2023 DePauw University Covid-19 policy (<https://www.depauw.edu/campus-life/wellness/coronavirus/current-covid-19-guidelines-fall-2023/>) will be followed in this course. Please carefully read and follow these guidelines.

Masking with KF94, KN95 or N95 masks is **required** for ANYONE who: is experiencing symptoms that could be consistent with COVID-19; tested positive in the last 5 days; or was exposed to COVID-19 in the last 10 days.

Assess your personal health daily. It is of the utmost importance that if you have symptoms of COVID-19, you should put on a mask, and contact the DePauw Health Wellness Center.

