



## Geography 1000

### Earth Environments and Global Change

### Spring 2019 Syllabus & Course Detail

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**"Earth Environments and Global Change"** (3) Fulfills Physical/Life Science Exploration requirements at the University of Utah. The class explores the four interconnected spheres of the Earth, the atmosphere, hydrosphere, lithosphere and biosphere. The course examines the theories, research methods and types of data that are fundamental to a responsible appreciation of the geographic and historical variation of Earth's environments. Case studies provide the opportunity for students to investigate 'hot' topics in Earth system science and may include melting ice caps, the overkill hypothesis, ozone depletion, the origins of life, and greenhouse effect.

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Professor: **Dr Kathleen Nicoll** Email: [kathleen.nicoll@gmail.com](mailto:kathleen.nicoll@gmail.com)

**Office Hours during the regular term:** Tuesday and Thursday 11-12 pm (& usually Thursday 3:00 -4:00 pm), Gardner Commons Room 4726 (\*\*announcements advise of any changes via CANVAS). Meetings at other times may be arranged – ask for an appointment.

**Required Lectures:** Gardner Commons Room 2560 -- Tuesday & Thursday 12:25 -1:45 pm. Attendance and participation is required.

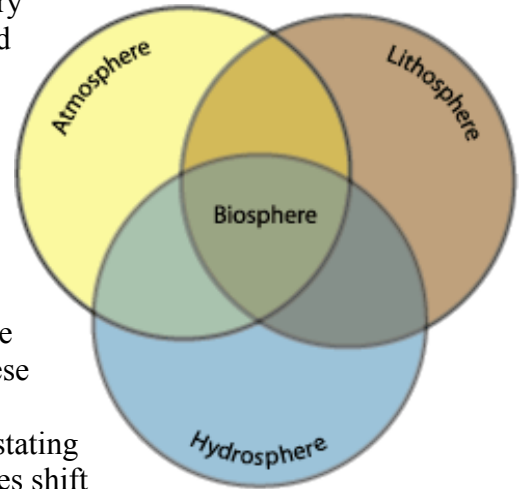
**Required Textbook:** Petersen et al., 2017, *Physical Geography*, 11th edition, Brooks/Cole Cengage Publishers. Reading (any edition of) this textbook is an essential component of the course; read and study chapters prior to the course lectures.

**Requirements:** Basic internet fluency is necessary to access the online course resources on the web. You will need internet access to take regular quizzes and do some assignments. There are no prerequisite courses for this class, but students are expected to be geographically literate. Students must know the location of the world's continents and oceans, the location of the 50 states, and be able to read latitude and longitude on a map; much of this information is included in the first two chapters of the textbook, or an atlas. Helpful information can be accessed online.

**Accommodations:** In compliance with the Americans with Disabilities Act of 1990, The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If any student needs accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with students and course instructors to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services; students requiring this service must advise the Center of their needs.

## Introduction and Course Goals

*WHAT?* Geography is inherently a synthetic, interdisciplinary science with emphasis on natural systems, society, space, and time. This course focuses on the Earth's physical environment and provides an overview of the fundamental tools that scientists use to understand the major processes that shape it. In particular, this course treats the Earth as a single, complex system, consisting of interlinked subsystems --the atmosphere, oceans, lithosphere, biosphere. Like any complex system (e.g. the Red Sox Nation, US economy, stock market, human immunology), the Earth system is regulated by complex interactions among these subsystems and external forcings. Some mechanisms tend to promote system stability; others can result in rapid and devastating change. The Earth system is inherently dynamic: crustal plates shift positions, resulting in earthquakes and volcanoes; the climate system has flipped between glacial and interglacial states over the past million years; weather fronts sweep through the mid-continent; hurricane storms batter coastlines; and the oceans and atmosphere ceaselessly circulate energy from the tropics to the poles.



*WHY?* Human societies are both vulnerable to the caprices of the Earth system (as shown by Hurricane Katrina/Sandy, or the Nepal earthquake, for example) and they are able to affect it through various intentional and accidental manipulations. Both our vulnerability and manipulative ability will likely continue to increase as the world population builds. It is crucial, therefore, that we have at least a basic understanding of the Earth system and its key processes, so that we may make informed societal decisions about how we manage Earth system resources.

*HOW?* This survey course presents the basics of the physical Earth and its related environmental processes in a manner that integrates the very latest, breaking discoveries from around the world. We will learn the associated theory, methods, models, and principles associated within Earth Systems Science. The first part of our course will cover the Earth's atmosphere, emphasizing the processes that control weather, climate, and the flow of energy through the Earth system. We will discuss examples and possible causes of climate change in the past and future. The second part of the course will review the geologic, geomorphic, and biologic components of the Earth system, with examples germane to the human element. This course covers a lot of ground (as it were) in a single semester. We will cover the entire textbook in one semester!!! Students interested in obtaining a deeper understanding of the Earth system are encouraged to take additional courses in physical geography; I will make suggestions. This class is an excellent prerequisite to others.

Goals and learning outcomes are specified by topic in each chapter of the textbook. Become familiar with these so that you learn how to study. Each chapter has learning outcomes listed!

## Structure & Purpose of Lectures, Readings and Assignments:

Your focused study and participation in the class is important, Two lecture periods are scheduled for each week; attendance is essential and may be recorded. Students may not sign any attendance sheet on behalf of others. Students who miss 3 lectures without an excuse will not be successful; do not skip class, or slack off so that failure can happen!! Lectures, readings and assignments complement and reinforce each other. Lectures provide the structure of the course, discussion of key issues, and additional material not found in the textbook. The content of the lectures will be at the discretion of the professor, and will not simply recap the suggested readings, which ideally should be read in advance of the lecture. Student should take notes during the lectures in notebooks – NOT LAPTOPS, TABLETS or PHONES \*\*unless there is ADA accommodation provided.

Occasional guest appearances by other faculty members, podcasts, online modules, or exercises may occasionally be assigned; students are expected to learn material covered.

Careful and critical reading of the text is important. Students should aim to finish the suggested readings in advance of the schedule specified in the topical (see timetable). The text examines many (but not all) of the issues raised in the lectures as well as additional concepts that may not be presented during the lecture period. Concepts presented in the text may be tested, whether they are covered in lecture (or not). Expect one quiz a week.

The text outlines a series of specific objectives and learning outcomes. Pay attention!

Expect weekly assignments and quizzes that provide practice with methods, concepts and topics introduced in the lectures and readings. The assignments will vary throughout the semester and quizzes will be both online and in-class. Some of these will require internet access or use of a basic calculator. There will be a 10-minute review during the lecture prior to each exam. Bring questions! Study guides are provided in the textbook, and online.

## Grading and Policies thereof

The responsibility for turning in materials on time, and earning a grade is placed squarely on the shoulders of the students taking this course. Course grades will be determined by how much material each student can show they have learned, as follows:

3 exams worth 100 points each

Participation, Homework Assignments & Quizzes worth 300 points in total

**Total** 600 points

\*\*The Professor may decide to (but is not obligated to) drop the lowest quiz score on the above for those students who are regularly attending the class lecture.

Materials turned in late may be docked, and may take extra time to grade.

I will discuss the Exam format in class. Exams are typically in a multiple-choice, short-answer format and emphasize the material covered since the previous exam, as specified in the timetable outline (below). Standard rules of examinations are set by the department and University policies. Make-up exams and quizzes are not routine in this course, and may only be offered at the discretion of the Professor upon evidence of medical reasons or extreme extenuating circumstances. Requests for make-up exams must be placed in writing to Dr Nicoll within 24 hours of the exam; if granted, the time and format of any make-ups is at her discretion, and shall occur within 10 days of the originally scheduled exam.

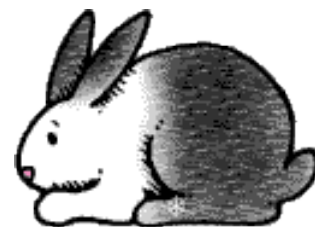
Students with special needs as defined by the university must consult with the Center for Disabilities early in the semester to arrange accommodations such as extra exam time.

During exams, tests and quizzes, the University and department policies apply, as does a modicum of jurisprudence on the part of the proctors. Adherence to the general code of honor is expected on the part of students, even if the exam is a take-home format or online. Students may only represent themselves in the context of their work, and may not consult supporting materials during the administration of exams, tests or quizzes. Students in attendance must not write on themselves or on their clothing or personal effects that could be consulted to facilitate their performance. Sunglasses, hats and/or caps may not be worn while any student in this class is taking an exam or quiz. Students may not and must not allow others to copy their work. Students are advised that the University has firm policies about instructional offences; they are not tolerated under any circumstances. Penalties are severe. In general, instructional offences involve some form of deceit or trickery, such as plagiarism or copying. This form of offence involves the use and passing off the work of someone else (including other students) as one's own, without giving credit to another. Students must do their own work!

**Participation.** Students should participate in lecture and discussions! Points will be based on attendance, in-class exercises, homework assignments, online quizzes and participation during the scheduled lecture meetings, discussions and debates. Attendance at class lectures is squarely the responsibility of the student; any of the online versions of lecture notes do not stand alone. For most students, success in this course will require regular attendance, attention to the reading and lecture, doing assigned work, taking notes for review, and studying the material. Attendance allows the opportunity to ask questions, and hear other students' questions answered. Questions and discussion are welcome. We may have some planned topical debates during the semester.

If students have problems understanding the material, or would like to discuss their grades, they should arrange to see the Professor immediately.

**In-class quizzes and other exercises** are *impromptu* and shall not normally be offered to those who are not present. If extenuating circumstances exist, these may be documented in writing, for consideration by the Professor. Do not expect to be absent from class and to do well. You will not be able to make-up missed work if you are absent without an excuse that fits criteria defined by the University policies.



Extra credit is not offered. Please do not ask for extra credit.

Students are expected to abide by suitable classroom conduct policies; the lecture period is meant to foster learning, and students should cooperate toward that goal. The Professor shall reserve the right to preserve the integrity of the classroom as such; disruptive students may be asked to leave. Please respect the integrity of this learning environment.

Policies on appealing grades follow those prescribed by the University and the department. First and foremost, students are encouraged to discuss their grades and related matters during office hours or another scheduled time period with the Professor. Raise any concerns or problems with the course material, lectures, exam questions, in class, in person, or in writing.

Students who feel they are not performing to the grade they would wish to earn are encouraged to evaluate their study strategies, and consult with the Professor for further individual advice. Improvement will be considered as evidence of student effort. Any student who seems to be failing or otherwise struggling may be called in to meet with the Professor. This call-in consultation is mainly to touch base, and should not be viewed with hostility by the student; simply put, the Professor wishes to express concern, and does not wish anyone to fail.

Students wishing for more support should consult with the Professor. Also the U has excellent counselors who can assist you - appointments may be made 801-581-6826.

Student athletes, EMTs, military personnel etc are expected to provide copies of their schedule well in advance of anticipated planned absences in which they are **\*\*officially\*\*** on active service. Student athletes should afford the classroom and the Professor the same courtesy they would extend to their coach/employer/commander.

Please note that the University has an official policy on absences that are deemed acceptable in lieu of class attendance. For example, Greek activities, vacations, or work schedules are not included in the official absences allowed by the University. As a general rule, the students must be prepared to take an active role in their own decision-making and planning in regards to attendance, and the Professor is not expected to flow around the students' choices, unless there are exceptional mitigating circumstances. If a student decides to attend their friend's wedding instead of the scheduled class, for example, they should turn in their assignments on time, and ensure their own arrangements for another person to take notes on their behalf.

Upon their attendance at the third lecture, students signing the attendance sheet are indicating that they have read and understand the course policies outlined, and that they agree to all policies and procedures. Modifications to this document and to rules may be made by the instructor(s).

Announcements will be made at each lecture to update students enrolled in the course. Further details may be announced regarding online resources. **TAKE YOUR OWN NOTES -- LECTURE NOTES WILL NOT BE POSTED ONLINE.** Consult your textbooks!!!!

***Considering a major or a minor in Geography?*** Great! We are happy to discuss the details with you. You can consult with me or schedule an appointment to see the college advisor. See posting in CANVAS or our department website for more information. Or attend meetings of our Geography Club! Or talk with the department peer advisors.

**Academic policies** Students are advised that turned in work may not be plagiarized. Cutting and pasting from the internet is not tolerated; ideas should be rewritten. The University has firm policies about instructional offences; they are not tolerated under any circumstances. Penalties are severe. In general, instructional offences involve some form of deceit or trickery, such as plagiarism or copying. This form of offence involves the use and passing off the work of someone else (including other students) as one's own, without giving credit to another. To recap prevailing University rules and regulations:

- \* Academic misconduct will not be tolerated. Penalties may include failure of an assignment, the entire course, and/or the filing of formal charges with appropriate university authorities. Academic misconduct includes, but is not limited to, cheating, misrepresenting one's work, and plagiarism:
- \* Cheating involves the unauthorized possession or use of information in an academic exercise, including unauthorized communication with another person during an exercise such as an examination.
- \* Misrepresenting one's work includes, but is not limited to, representing material prepared by another as one's own work or submitting the same work in more than one course without prior permission of all instructors.
- \* Plagiarism means the intentional unacknowledged use or incorporation of any other person's work in one's own work offered for academic consideration or public presentation.

**Class Conduct Policies** Students are expected to abide by suitable classroom conduct policies; the lecture period is meant to foster learning, and students should cooperate toward that goal. The Professor shall reserve the right to preserve the integrity of the classroom as such. For example, disruptive students may be asked to leave.

During the lecture period and/or field exercises, students should exercise respect and constraint and they may not speak on communication devices, mobile phones, or engage in activities such as text messaging, IMing, web surfing, gaming, or other related activities. During the lecture period, all media devices (e.g. pagers, phones, etc) should be silenced. Students **\*\*may not\*\*** take notes on laptop computers, phones, PDAs, blackberries, or tape recorders unless they have sufficient accommodation.

Students who eat cheeseburgers, distract the lecture, harm the feelings of other classmates, engage in threatening behavior, scream or use profanity, or break rules may be called out, or asked to leave the classroom. Please comply with the instructor requests.

Students who are engaged in other activities (e.g. chatting, speaking on the phone, texting, etc) are not contributing to the learning environment need to examine their intentions. When such students are disruptive to others, this is a violation of the code and it demonstrates a lack of respect. Other students and/or the Professor may issue warnings, and will ask such students to leave.

Policies on appealing grades follow those prescribed by the university and the department. First and foremost, students are encouraged to discuss their grades and related matters during office hours or another scheduled time period with the Professor. Students may raise any concerns or problems with the course material, lectures, exam questions, in person, or in writing.

Students who feel they are not performing to the grade they would wish to earn are encouraged to evaluate their study strategies, and consult with the Professor. Any student who seems to be failing or otherwise struggling may be called in by the Professor for a meeting. This call-in consultation is mainly to touch base, and should not be viewed with hostility by the student; simply put, the Professor wishes to express concern, and does not wish anyone to fail.

Upon enrollment through the third lecture, students will indicate by their presence on the official roster that they are taking this course, and that they have read and understand the policies outlined herein.

Announcements will be made in class and posted online as needed. Modifications to this document may be made at the discretion of the instructor.

***Attendance policy*** The University and this professor expect regular attendance at all class meetings. The syllabus is official communication in writing passed out during the first class meeting. Students are responsible for acquainting themselves with and satisfying the entire range of academic objectives and requirements as defined by the instructor. PPM, Policy 6-100III-O

**Student Athletes and others with commitments (military personnel, police, fire service personnel, etc)** must inform the Professor about their schedule requirements should they be required to miss class or field trips, or leave town. We will endeavour to make things work.

**Family Friendly Custodial // Child Care Policy** Anyone who is breast-feeding an infant is automatically covered in this policy – you and your nursing children are welcome in my class at all times. If you are a caretaker, guardian or supportive family member, and you are struggling with sick kids, care costs or cannot find a sitter -- if a legitimate need presents that will prevent you from coming to class, please note that you occasionally can bring your children/family-member to my class. \*\*Please note this is my own policy, not the university's.

**If you would wish letters of recommendation or support now, or in the future:** please note that a two-week lead time is needed for Dr Nicoll to meet any deadlines. Letters of support are not always possible.

**Any Questions:** May be directed to the Dr Nicoll. Please do not hesitate to get in touch!

## NOTICES

**Research Ranking of the University** The University of Utah is the only institution in the state classified in the highest research category (R1). At the University of Utah, you students will have access to state-of-the-art research facilities and be able to be part of the knowledge creation process. You will have the opportunity to do research of your own with faculty who are leading experts in their field, engaging in programs that match your research interests. Further, you will interact with and often take classes with graduate students that provide an advanced understanding of the knowledge in your field.

**Emergency Preparedness Plan** Students taking this class must be familiar with the campus Emergency Preparedness Plan. Each building has its own evacuation plan.

Should there be a drill or an actual emergency that requires a building evacuation, please assemble at the appointed “EAP” (Emergency Assembly Point) and check in with the Prof or class instructor, who will take attendance. Please follow all instructions given. Do not leave the area until you are given permission to do so by your course instructor. Emergency protocols are online here: <http://emergencymanagement.utah.edu/eap> and we will post information online via CANVAS.



The EAP for us is located just above here^ on the southeast side of Marriott Library.

\*\* If our EAP area is unsafe, proceed carefully uphill to another location by the Garff Executive Education Building (Business school).



***Accommodations, restated*** In compliance with the Americans with Disabilities Act of 1990, The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If any student needs accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with students and course instructors to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services; students requiring this service must advise the Center of their needs.

***Equal Access Statement*** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and instructors to make arrangements for accommodations. All written information in the course can be made available in alternative format with prior notification to CDS.

***Addressing Sexual Misconduct*** Title IX makes it clear that violence and harassment based on sex and gender, which includes sexual orientation and gender identity/expression, is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information.

If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender identity/expression, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS). Additional information regarding reporting and victim supportive resources are available at the offices listed.

Attention student veterans: the U of Utah has a Veterans Support Center on campus, in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu> Please also let me know if you need any additional support in this class for any reason.

Attention all students, and in particular those members of the LGBTQ community: my classroom is a safe zone\*. Additionally, please know that the U of Utah has a Resource Center on campus in Room 409 in the Olpin Union Building. Hours: M-F 8-5pm. Visit their website: <http://lgbt.utah.edu> Please advise if there is additional support you need.

If English is your second language, there are several resources on campus that will support you with language development and writing: the Department of Linguistics ESL Program (<http://linguistics.utah.edu/esl-program/>); Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>) Please note that access to translators and dictionaries is not permitted during the exams. Students may not consult notes, texts, papers, calculators, papers, written materials, or each other during exams.

Attention all students: Please note that access to translators and dictionaries is not permitted during the exams. Students may not consult notes, texts, papers, calculators, papers, written materials, or each other during exams.

### Important Dates for the 2019 Spring Term

Classes begin	Monday, January 7, 2019
Last day to register without a permission code	Friday, January 11, 2019
Last day to drop (delete) classes	Friday, January 18, 2019
Last day to register, elect CR/NC, or audit classes	Friday, January 18, 2019
Last day to withdraw from classes	Friday, March 8, 2019
Spring break	March 10-17, 2019
Last day to reverse CR/NC option	Friday, April 19, 2019
Day to Start Studying Harder	TODAY – Don't Delay
Classes end	Tuesday, April 23, 2019


### EXAM DATES WILL BE FINALIZED THE FIRST WEEK OF CLASS

**EXAM I –\*\*\* Covers chapters 1-7**

**EXAM II –\*\*\* Covers chapters 8-11**

**EXAM III –\*\*\* Covers chapters 12-20**

**NO other FINAL EXAM IS HELD FOR THIS CLASS, unless by popular request.**

*Do not get  behind!*

**Are you still wondering why you should take this class?**

**By the end of this course with Dr Nicoll, you won't be wondering any more.**

**You will probably be able (at the very least) be able to:**

- Explain why we have seasons, and how this relates to creamsicles
- Dance interpretively like an airmass
- Explain a weather map as if you were auditioning for the news
- Describe the **\*\*exciting\*\*** function and composition of the atmosphere
- Wax on philosophically about the “Lake Effect” in Utah
- Discuss the Earth's hydrologic cycle, and explain how rain is naturally acidic but not worse than a can of coke
- Know how VERY much water it takes to make and transport a can of coke to you, such that you might actually feel guilty, even though that is not the purpose...
- Describe the structure of the solid Earth as it relates to a Peanut M&M, and relate its layers to phenomena such as earthquakes, mountain ranges and volcanoes
- Evaluate the effects of the atmosphere and the hydrosphere on the lithosphere, and cut up Paper Plates to simulate global crustal trends at parties
- Be able to relate all kinds of food products to geologic processes, without gaining any weight, since they are thought-experiment demonstrations only
- Argue, with demonstrable FACTS, about some of the interesting socio-political and environmental topics that we face, including global warming, fossil fuel consumption trends, and the necessity of the greenhouse effect
- Explain some of Utah's coolest scenery (**\*\*and crop circles**)
- Explain how some Earth scientists collect data to forecast hurricanes, reconstruct ancient climate trends, measure floods, and other neat applications involving expensive, spiffy technical equipment with polysyllabic names like “goniometer”
- Compare and contrast the Earth's ecosystems, with emphasis on specific bunny environments.

The specific Learning Outcomes of this class are clearly presented in the textbook, in front of each chapter. Our lectures will facilitate your own personal learning!

## GEOG 1000 – Introduction to Earth Environments and Global Change Course Schedule and Assigned Readings List 2019

\*\* Note that we cover about two chapters a week.

This requires at least 6 hours of study on your part, in addition to attending lecture.

<b>Class</b>	<b>Lecture Topic</b>	<b>Chapters</b>
T, 1/8	Initial meeting! Syllabus on Canvas -- rollout	Preface
H, 1/10	Course overview, Fundamental Concepts I	Preface, 1
T, 1/15	Fundamental Concepts II	1
H, 1/17	Meteorology & Hydrologic Cycle in Utah	2
T, 1/22	Precipitation and Snow	3
H, 1/24	Soil Moisture	4
T, 1/29	Infiltration	5
H, 1/31	Surface Water Groundwater	6
T, 2/5	Extra Topics & ... <i>Review of chapters 1-7</i>	1-7
H, 2/7	<b>*** EXAM I</b>	
T, 2/12	Global Climates & Climate Change	8
H, 2/14	Low-latitude and Arid Climate Regions	9
T, 2/19	Middle-Latitude, Polar & Highland Climates	10
H, 2/21	Biogeography	11
T, 2/26	<b>*** EXAM II ... chapters 8-11</b>	8-11
H, 2/28	Soils & Soil Development I	12
T, 3/5	Soils & Soil Development I	12
H, 3/7	Earth Materials	13
T, 3/12	→ <i>Class does not meet – Spring Break</i>	
H, 3/14	→ <i>Class does not meet – Spring Break</i>	
T, 3/19	Earth Materials & Plate Tectonics	13-14
H, 3/21	Volcanic Processes & Landforms II	14
T, 3/26	Weathering & Mass Wasting	15
H, 3/28	Underground Water & Karst	16
T, 4/2	Fluvial	17
H, 4/4	Fluvial Landforms	17
T, 4/9	Arid region landforms & Aeolian Processes	18
H, 4/11	Glaciers & Ice	19
T, 4/16	Coastal Landforms	20
H, 4/18	Extra Topics and ... <i>Review of chapters 13-20</i>	12-20
T, 4/23	<b>*** EXAM III and last class meeting</b>	

...Note: there is not a cumulative final offered during the finals week.