

NOTE: This is a SAMPLE syllabus/itinerary and may not be the most up-to-date version. Please contact the faculty leader of this course for more recent information.

NASC 3900 Earth Systems and Sustainability in Iceland

Section 001

May 2019

Syllabus & Course Information



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AAC 247

Course Description: Earth systems science explores the interactions among the atmosphere, biosphere, geosphere, and hydrosphere, and the natural processes that cycle matter through those “spheres”. Understanding Earth’s systems and cycles allows us to develop practices for resource extraction, consumption, and waste disposal that allow for economic growth while maintaining environmental sustainability. In this international travel course, we will explore Earth systems science and sustainability in Iceland, a geologically fascinating, geographically isolated, resource-limited (and resource-abundant) country with a commitment to social and environmental sustainability.

Course Prerequisites: None. This course satisfies the NASC general education course requirement.

Course Goals: Using the lens of Iceland and Icelandic culture, the overall goal of this course is to provide you with an understanding of the current challenges to global environmental sustainability and provide students with a working knowledge of the scientific principles to understand them. All environmental, energy, and natural resource issues can be understood in terms of how matter **moves** and **changes** in and on the Earth, as well as the **energy losses** or **gains** that accompany those changes. You will be able to apply this understanding of the natural world to your decision making in a global society and marketplace.

By the end of the course, you should be able to:

1. Identify the geological origin of Earth materials, including energy and mineral resources, and their relationship to ecological resources.
2. Describe the different reservoirs of matter within Earth systems.

3. Know the chemical and physical processes by which matter moves from one reservoir to another in the water, rock, and carbon cycles.
4. Describe the change in energy that accompanies the movement of matter from one reservoir to another and categorize sources of energy as “renewable” or “nonrenewable” based on the types of change.
5. Construct representations of complex earth systems using systems diagrams.
6. Create spreadsheets and graphs to represent data clearly and appropriately.
7. Compare energy sources for electricity and transportation in Iceland and the United States.
8. Compare the strengths and limitations of different sources of energy in terms of balancing society’s energy needs with environmental quality and economics.
9. Explore cultural differences between Iceland and the United States with respect to the relationship between people and the environment.
10. Distinguish scientific information from personal experience and societal values in understanding how scientists interpret Earth processes.
11. Using the tools of scientific inquiry, develop a method to evaluate an approach to a sustainability challenge in Iceland.
12. Explain the importance of personal and professional decision-making on the environment and global sustainability.

Course Materials

Required Textbook: Gudmundsson, Ari Trausti, 2013, *Living Earth – Outline of the Geology of Iceland*, Mal Og Menning, Iceland.

Additional readings will be posted in Blackboard, to be determined.

Required Supplies: Because this is an international travel course, all students must have a current passport valid for at least three months beyond our travel dates. Students from some countries may be required to obtain a visa for travel to Iceland.

The class will have regular (2x/week) course meetings after spring break. But this is largely an outdoor, field-based course in Iceland, so we can expect to encounter cold and wet weather conditions and participate in field activities that require proper clothing and footwear. We will provide a list of required gear in one of the pre-travel meetings.

Assignments, Grading, and Attendance

Final grades and grading throughout the semester will conform to the system outlined in the Bentley Student Handbook (<http://www.bentley.edu/offices/registrar/grading-policy>). Grades are not curved, where the highest score is set as the top of the grading scale. *However, we reserve the right to add points or increase grades **uniformly** at our discretion.*

Basis for determination of final grade:

Participation in three pre-travel class meetings	5%
Pre-travel assignment and presentation	10%
Field activity assignments and labs	25%
Mid-trip exam	10%

Participation in Iceland	25%
Final project assignment	25%
TOTAL	100%

Expectations about Participation and Professional Etiquette

As an international travel field course, your participation and attitude are essential to the success of the class and the positive experience of your classmates. You are expected to be prepared and on-time for each day's activities and comply with all instructor requests and course rules throughout the trip. We expect respectful conduct toward your fellow students, instructors, and the people we encounter and places we visit. This trip is an opportunity to experience a culture and environment quite different from our own. You will be expected to represent yourself and Bentley University in a positive, professional manner, while taking advantage of opportunities to interact with, and learn from Icelanders we encounter throughout the trip.

Many areas of Iceland are ecologically and geologically sensitive and have strict rules about our access and impacts, both for your safety and to protect the natural environment. You are expected to adhere to all posted environmental rules, and you should attempt to minimize your personal footprint during our visit.

This syllabus is a contract, stating that we expect professional and respectful conduct from one another. A specific list of course rules and code of conduct will be provided at one of the pre-travel meetings.

Academic Integrity and the Bentley Honor Code

All students are expected to adhere to Bentley's Academic Integrity policy, which includes Bentley's Honor Code (details on the policy can be found in the Undergraduate Student Handbook, the Graduate Catalog, and Bentley's academic integrity course page on Blackboard into which all students and faculty are enrolled). The essence of the policy is that you should not represent someone else's work as your own (no plagiarism, no cheating on exams, no illicit collaboration on projects, etc.). Failure to adhere to the policy can have serious consequences, including course failure, suspension, or even expulsion from the university. The best way to avoid a problem is to consult with your instructor before taking an action that might constitute a violation.

The Bentley University Honor Code formally recognizes the responsibility of students to act in an ethical manner. It enjoins all students to maintain academic honesty in their own work (recognizing that most will do so because of their own high standards), to promote ethical behavior throughout the Bentley community, and to take responsible action when there is a reason to suspect dishonesty. It reads:

The students of Bentley University, in a spirit of mutual trust and fellowship, aware of the values of a true education and the challenge posed by the world, do hereby pledge to accept the responsibility for honorable conduct in all academic activities, to assist one another in maintaining and promoting personal integrity, to abide by the principles set forth in the honor code, and to follow the procedures and observe the policies set forth in the academic integrity system.

Plagiarism and Citation of Work

Plagiarism is often the least conspicuous, most poorly understood, and most insidious form of academic dishonesty. Plagiarism is representing another entity's work or ideas as your own. It's fraud. And it's a serious academic offense. Something as simple or apparently innocuous as copying or paraphrasing from Wikipedia without citation is plagiarism. Good intentions or misunderstanding do not excuse plagiarism, but there are cases where it's difficult to say if something is strictly plagiarism. So it is important that you learn about it (<http://www.plagiarism.org/>) and if you are ever in doubt about whether something is plagiarism, ask us. **DO NOT wait for any your instructors to find plagiarism. Any idea or language that did not originate from you at the time of writing must include a citation.**

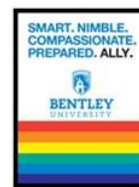
If you use someone else's idea or language in an assignment in this class, you should use parenthetical citations (e.g. Smith, 2018) in the text of your writing with a "Works Cited" entry for the citation at the end. Your own work in other classes is considered original work and must be cited if you use it. Cite everything. **Not knowing how to cite an idea or reference is not an excuse.** I will never reduce a grade based on the formatting of your "Works Cited" bibliography or references unless I have given you specific feedback on how to change it.

Similarly, although collaboration with other students inside or outside of class is encouraged, the wholesale copying or even tweaking of another student's answer is prohibited in an original response. **Do NOT put yourself in the awful position of having to defend the originality of your work.** We hate filing academic integrity reports **and we hate assigning 0.0 grades; they are earned but they are preventable.**

The Bentley Beliefs and Our Classroom Environment

This class will be conducted in full accordance with The Bentley Beliefs. If you haven't done it recently, please read them in the [2017-18 Bentley Student Handbook](#). The Bentley beliefs reflect my personal beliefs. ***We hope that some of the ideas we discuss in the class will challenge you and I hope you will be uncomfortable, but discomfort should come from ideas, not from individuals.*** We assure you that you will be respected in our classroom. If you do not feel respected, tell us immediately. We will not be offended. This is part of our job and we take it very seriously.

Likewise, our university does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration. Bentley also has an active Ally network that strives to create a safe environment for LGBTQ faculty, staff and students. We are Bentley Allies, so please let us know if you have questions about LGBTQ issues, the ally network, or on-campus resources. Personal and professional courtesies are especially important to us. Our class roster has your preferred name, but let us know if you have an alternate name or preferred gender pronoun. Kindly let us know your preference at the first pre-course meeting.



Resources for Improving Learning

Creating a respectful classroom means that we will also make every attempt to reasonably accommodate specific learning needs of students. We have several formal resources on campus to help you achieve your potential. Please discuss any concerns with us as soon as possible and refer to the

following resources as necessary. Out of fairness to all students, we cannot make accommodations retroactively, so please see us with any concerns ASAP. We can discuss accommodations confidentially.

Bentley University abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 which stipulate no student shall be denied the benefits of an education solely by reason of a disability. If you have a hidden or visible disability which may require classroom accommodations, please call the Office of Disability Services within the first 4 weeks of the semester to schedule an appointment. **The Office of Disability Services** is located in the **Office of Academic Services (JEN 336, 781.891.2004)**. The Office of Disability Services is responsible for managing accommodations and services for all students with disabilities.

The ESOL Center offers writing and English language support to students who are English Speakers of Other Languages (ESOL). Our faculty tutors specialize in working with multilingual writers and can provide feedback and strategies on writing for all course and career-related writing. You're welcome to come in for help at any stage of the writing process, from the brainstorming and organizing point through the drafting stage. In addition, you can receive support related to Power Point slide review, source documentation, oral presentations, pronunciation, and conversation fluency and enrichment.

The ESOL Center is located on the lower level of the Bentley Library, room 026. Day and evening appointments can be scheduled through bentleyesol.mywconline.net or by dropping by the ESOL Center to see if a tutor is available. Because of the high demand for appointments, however, we encourage scheduling a time in advance whenever possible.

Likewise, for all students, The Writing Center offers one-on-one tutoring to students of all years and skill levels. Located on the lower level of the Bentley library (room 023), the Writing Center provides a welcoming and supportive environment in which students can work on writing from any class or discipline. Writers are encouraged to visit at all stages of the writing process; they can come with a draft, an outline, or just some initial thoughts and questions. Staffed by highly skilled student tutors, the Writing Center is open six days a week. Drop-ins are welcome, but appointments are encouraged and can be made online at bentley.mywconline.net or by phone at 781.891.3173. For hours and additional information, visit their website at bentley.edu/writing-center.

Tentative Schedule and Travel Itinerary

Biweekly Class Meetings (2x/week)	
Week	Topic
1/21	Pre-course Meeting and Introduction (one class)
3/18	Sustainability, Matter & Energy, Earth Materials
3/25	Geologic Time, Earth Composition, and Earth Structure
4/1	Plate Tectonics and Heat Flow
4/8	Igneous Systems, Volcanoes, and Hydrothermal Systems
4/15	Hydrologic Cycle and Glaciers
4/22	Glaciers and Glacial Geology
4/29	Humans and the Environment
Travel Itinerary May 12-25	
Day	Activity
1	Depart Boston for Reykjavik in early evening
2	Arrive at Keflavik airport in early morning; meet guide and bus; (a.m.) Breakfast in Keflavik and bus tour of volcanic landscape. Transit to Reykjavik Meet with faculty at Reykjavik University + lunch (~ 11am-3pm). Transit to Reykjavik accommodations. Tour Reykjavik. Dinner on your own. Evening check-in meeting. Overnight in Reykjavik
3	Tour “Golden Circle,” greenhouse, and Thingvellir National Park, Silfra Fissure – snorkeling between North American & Eurasian tectonic plates. Overnight in Reykjavik.
4	Tour Hellisheidi geothermal power plant – geologic origins of geothermal energy; Geysir; Gullfoss; buried Viking farm. Overnight in Reykjavik.
5	Begin Ring Road tour. Reykjavik to Snæfellsness Peninsula; Vatnshellir lava tube, volcanic and glacial landforms and processes Overnight in Grundarfjörður
6	Visit volcano museum, basalt column Hvítserkur on Vatnsnes Peninsula, continue to Akureyri. Overnight in Akureyri
7	Lake Myvatn and maar craters, Krafla volcanic area and boiling mudpots; Volcanic landforms and processes; Godafoss waterfall; Dettifoss waterfall and canyon; role of water and ice in shaping the landscape. Overnight near Lake Myvatn
8	Continue to Egilstadir & east coast, Kárahnjúkar Hydropower Plant & Hálslón Reservoir Overnight in Egilstadir
9	Exporting energy: Alcoa aluminium smelting; Drive to southeast coastal region. Glaciers: Vatnajökull, Skálafellsjökull, Svinafellsjökull Ice Fall; Skatafell Nature Reserve, Jökulsárlón Glacier Lagoon (boat tour); Overnight near glacial lake.
10	Glacier walk in the morning; continue glaciers and glacial landscape. Overnight in Bakki area.
11	Ferry to Westmann Islands. Heimaey – volcanic hazards, sea caves, puffins. Return to Reykjavik.
12	Free day in Reykjavik; afternoon bus to Keflavik airport, return to Boston

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PLEASE READ THIS SYLLABUS COMPLETELY.

Sign and date this page and return to us during the pre-course meeting on **January XX, 2019**.

I have read the syllabus for NASC 3900 Earth Systems and Sustainability in Iceland and understand and agree to the requirements and expectations outlined in the document.

Printed Name

Signature

Date