The Anthropocene Golden Spike: The Age of Humans

ENV 2080 Course Syllabus–Spring 2019

Instructor: Leslie Kanat, Ph.D.

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Course web page: http://kanat.jsc.vsc.edu/

Office hours: Scheduled office hours are from 8:30 to 11:15 a.m. on Monday and Wednesday; and 8:30 to 9:30 a.m. on Tuesday and Thursday; otherwise, stop in anytime, or schedule an appointment. Office location: Bentley 332.

Lecture: Meeting times: 1:00 to 2:15 p.m. on Tuesday and Thursday in Bentley 308

Texts: There is no formal textbook for this course. The relevant literature will be provided as online links and books on reserve in the Willey Library.

Course Description and Objectives

The course focuses on the idea of permanence and longevity with respect to the footprint that humans will leave behind and will ultimately recorded in the rock record. The Anthropocene is a human-induced epoch of geological time recognized by changes in the rock record. These changes include i) chemical signatures (unstable isotopes from weapons testing, nuclear power, and medical research wastes, and changes in atmospheric and oceanic chemistry); ii) physical signatures (global temperature, increased deposition, disturbed soils, erosion, railroads, concrete, asphalt, plastic, fossil fuel wells, and cities); and iii) biological signatures (clearing forests, widespread agricultural burning, species extinction, and mono-cropping). This knowledge may help individuals make intelligent decisions about events that affect humankind.

Students in this course will have opportunities to:

• critically read, evaluate, and synthesize information from relevant literature that addresses the long-lasting effects of human impact on Earth;

• work individually, and with others, to evaluate the economic, social, ethical, and scientific aspects of how humanity effects changes on Earth; and

• articulate, in oral, written, and graphical form, the causes, scale, and relative importance of how human activities may be recorded in the rock record.
Core Curriculum
This course is specifically designated as a Climate Change Enriched, Sustainability Enriched, or Social Justice Enriched course of the Northern Vermont University General Core Curriculum. It explores the many natural forces and cultural constructs that have shaped and continue to shape our world across regions, within contexts, and throughout time.

Oral Presentation
One oral presentation will be required; it will be scored according to the Vermont State College Oral Communication Standards and therefore count toward one of the two required oral presentations needed to graduate from the University. The oral presentation will also be assessed using a rubric appropriate to the content of this course. Use the Assertion-Evidence Structure when designing the presentation.

Accommodations
Students with a documented disability, who require accommodations, should acquire an Academic Accommodations Form from Academic Support Services (Dewey 123, phone 635-1264).

Plagiarism
Students at the University are expected to be honest in all their academic work. Acts of dishonesty for which a student may be disciplined include, but are not limited to, receiving or providing unauthorized assistance on coursework or plagiarizing the work of others in writing assignments. The American Heritage Dictionary defines plagiarism in the following way: “To steal or use (the ideas or writings of another) as one’s own.” You are responsible for knowing what specific acts constitute plagiarism. If you are unsure, then consult me, or read the Undergraduate Catalogue. Academic dishonesty in any form is prohibited and unacceptable.

Distribution of Grades
The final grade is determined by a weighted average using the following distribution:

<table>
<thead>
<tr>
<th>weight</th>
<th>topic</th>
<th>due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>Two-minute quizzes</td>
<td>throughout the semester</td>
</tr>
<tr>
<td>10%</td>
<td>Assignments</td>
<td>as specified</td>
</tr>
<tr>
<td>20%</td>
<td>Class discussion</td>
<td>most Thursdays</td>
</tr>
<tr>
<td>5%</td>
<td>Writing assignment (first draft)</td>
<td>Thursday, 7 March 2019</td>
</tr>
<tr>
<td>15%</td>
<td>Mid-term exam</td>
<td>Thursday, 14 March 2019</td>
</tr>
<tr>
<td>10%</td>
<td>Writing assignment (final version)</td>
<td>Thursday, 4 April 2019</td>
</tr>
<tr>
<td>15%</td>
<td>Oral Presentations</td>
<td>Tuesday, 23 April 2019</td>
</tr>
<tr>
<td>20%</td>
<td>Final Exam</td>
<td>date to be determined by NVUJ Administration</td>
</tr>
</tbody>
</table>
Comments Regarding Assessment

- Surprise, two-minute quizzes will be given throughout the semester at the beginning of the class.
- All exams and quizzes are cumulative—the pyramid exam style will be used in this class.
- If you miss the mid-term exam, you have one week to take a make-up; make-up exams are entirely essay and do not have a group component.
- There are no make-ups offered for the final exam or for the two-minute quizzes.
- Everything counts—no grades are dropped.
- Grading rubrics will be provided for most assignments.
- All assignments will be posted on the class web page—read assigned readings prior to each class.
- Use Google Scholar to find resources—see https://scholar.google.com/.
- All material submitted for a grade must be presented in professional form—type everything; there will be a reduction of 20% for assignments that are not typed.
- All assignments are due at the start of the class period—otherwise they are late. For each calendar day (24-hour period) an assignment is late it will be down-graded by 10%. Please note, I recognize that extraordinary circumstances may arise that would mitigate the late fee.

Comments Regarding Class Management

- You are expected to attend class and participate in class discussions.
- Please come to class a few minutes early so that everyone is ready to start on time.
- I expect a lot out of you and I place a great deal of responsibility on you—I cannot do your learning for you, but I will give you many opportunities to seek new knowledge, to show me what you learned, and to show me what you can do.
- You will have several opportunities, during class and after class, to work in small groups.
- I do not usually take attendance, but I do expect you to make up all missed work prior to the next class. Find out from another student, and from the class web page, what you missed and learn the material.
- A textbook is not required for this course, yet supplemental reading material is available in the library, literature can be signed out from my office, and papers will be posted on the class web page.
- Read the appropriate literature prior to attending lecture, get ready to discuss the content in class, keep good notes, ask questions, and come see me when difficulties arise.
- Copies of many of the PowerPoint slides will be available on the class web page.
- I will be happy to meet with you at any time, except the day before an assignment is due.
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture and Discussion Topics</th>
</tr>
</thead>
</table>
| 1    | Introduction to the course  
The rock record and stratigraphy  
Discussion: Biello (2016) and Crutzen and Stoermer (2000) |
| 2    | Geological time  
Note: class will not be held on Thursday, 31 January 2019. |
| 3    | Population and exponential growth  
Discussion: Finney and Edwards (2016); and Klein (2015) |
| 4    | Isotopes and nuclear power  
Discussion: Zalasiewicz (2016) |
| 5    | Lightning Round presentations (19 February 2019)  
Discussion: Lewis and Maslin (2015) |
| 6    | Winter Break |
| 7    | Climate change |
| 8    | Mid-term exam (14 March 2019)  
Discussion: Waters et al. (2016) |
| 9    | Oxygen isotopes  
Discussion: Zalasiewicz et al. (2011) |
| 10   | Agriculture  
Discussion: Zalasiewicz et al. (2015) |
| 11   | Review of Anthropocene indicators |
| 12   | Spring Break |
| 13   | Discussion: Consensus For Action (2013) |
| 14   | Oral Presentations |
| 15   | Oral Presentations |
| 16   | A Decision-Making Model: Learn → Decide → Act |
| F    | Cumulative final exam: date yet to be determined by NVUJ Administration (no make-ups) |

*We will modify the course outline as needed, as the term progresses*