

Term Information

Effective Term Spring 2016
[Previous Value](#) [Autumn 2013](#)

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

We are requesting GE status in the Social Science (Human, Natural, and Economic Resources) and Diversity (Global Studies) GE categories.

What is the rationale for the proposed change(s)?

This course meets the rationale and all learning outcomes of the requested GE category or categories, as articulated in section VIII of the Curriculum and Assessment handbook.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

N/A

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Anthropology
Fiscal Unit/Academic Org	Anthropology - D0711
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	4597.03H
Course Title	The Prehistory of Environment and Climate
Transcript Abbreviation	Prehist Env&Climat
Course Description	History of modern biotic communities, biological evidence of climatic change during the late glacial and Holocene, and exploration of the responses of terrestrial ecosystems to climatic functions.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 7 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	No
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites
Exclusions

Prereq: Honors standing, and Jr or Sr standing.
Not open to students with credit for 597.03.

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	26.0101
Subsidy Level	Baccalaureate Course
Intended Rank	Junior, Senior

Requirement/Elective Designation

General Education course:
Human, Natural, and Economic Resources; Global Studies (International Issues successors); Cross-Disciplinary Seminar (597 successors and new)

Previous Value

*General Education course:
Cross-Disciplinary Seminar (597 successors and new)*

Course Details

Course goals or learning
objectives/outcomes

- Students will understand theories and methods of social science inquiry.
- Students will know how ancient and modern groups used and managed human, natural, and economic resources.
- Students will know how past climates, environments, and socio-economic systems are reconstructed, and how environmental change and human responses to those changes are studied.
- Students understand the relationships between human behavior and environmental and climate changes in the present and in the past, and appreciate how devastating catastrophes triggered by El Niño/ Southern Oscillation (ENSO) cycles have been.
- Students understand why a global response to natural and human-induced environmental crises is needed.
- Students understand the political, economic, cultural, physical, and social differences among the nations of the world.
- Students synthesize and apply knowledge from diverse disciplines in their study of environmental change and human responses during ancient ENSO events.

Previous Value

Content Topic List

- History of modern biotic communities.
- Paleoclimate
- Environmental Change
- Archaeology
- Climate
- Human Ecosystems
- Sudden Environmental Change

Previous Value

- [History of modern biotic communities.](#)
- [Paleoclimate](#)
- [Environmental Change](#)
- [Archaeology](#)

Attachments

- 4597.03H Assessment Plan.doc: 4597.03H Assessment Plan
(GEC Course Assessment Plan. Owner: Freeman,Elizabeth A.)
- Dr Larsen letter 10 07 14.doc: Chair's Letter
(Cover Letter. Owner: Freeman,Elizabeth A.)
- 4597.03H GE Rationale revised 2015.doc: Revised GE Rational
(GEC Model Curriculum Compliance Stmt. Owner: Freeman,Elizabeth A.)
- 4597.03H REVISED syllabus 2015.doc: Revised Syllabus
(Syllabus. Owner: Freeman,Elizabeth A.)

Comments

- 05/13/15: Please change effective term to SP16. *(by Haddad,Deborah Moore on 05/13/2015 04:17 PM)*
- See 12-29-14 e-mail. *(by Vankeerbergen,Bernadette Chantal on 12/29/2014 08:46 AM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Freeman,Elizabeth A.	10/07/2014 09:55 AM	Submitted for Approval
Approved	McGraw,William Scott	10/07/2014 10:33 AM	Unit Approval
Approved	Haddad,Deborah Moore	10/07/2014 01:03 PM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	10/09/2014 09:31 AM	ASCCAO Approval
Submitted	Freeman,Elizabeth A.	10/22/2014 04:58 PM	Submitted for Approval
Approved	McGraw,William Scott	10/23/2014 08:53 AM	Unit Approval
Approved	Haddad,Deborah Moore	10/23/2014 12:18 PM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	12/29/2014 08:46 AM	ASCCAO Approval
Submitted	Freeman,Elizabeth A.	05/13/2015 03:11 PM	Submitted for Approval
Approved	McGraw,William Scott	05/13/2015 03:36 PM	Unit Approval
Revision Requested	Haddad,Deborah Moore	05/13/2015 04:17 PM	College Approval
Submitted	Freeman,Elizabeth A.	05/13/2015 04:21 PM	Submitted for Approval
Approved	McGraw,William Scott	05/13/2015 04:24 PM	Unit Approval
Approved	Haddad,Deborah Moore	05/13/2015 04:26 PM	College Approval
Pending Approval	Nolen,Dawn Vankeerbergen,Bernadette Chantal Hanlin,Deborah Kay Jenkins,Mary Ellen Bigler Hogle,Danielle Nicole	05/13/2015 04:26 PM	ASCCAO Approval



Department of Anthropology

4034 Smith Laboratory
174 West 18th Avenue
Columbus, OH 43210-1106

Phone (614) 292-4149
Fax (614) 292-4155
<http://anthropology.ohio-state.edu>

7 October 2014

Dear Curriculum Panel Members,

I am pleased to submit this curricular bundle for your review. This bundle includes a number of new courses, courses for General Education consideration, and several course changes. These submissions reflect the evolving profile of our teaching mission and what we have to offer our students and the institution generally. The Department of Anthropology has taken on one of its biggest curriculum revisions, involving both undergraduate majors (Anthropological Sciences, Anthropology) and graduate program, in its recent history. I am excited to endorse all of these submissions, and look forward to implementing the revisions to the Anthropology curriculum.

Best regards,

A handwritten signature in blue ink that reads "Clark S. Larsen".

Clark Spencer Larsen
Distinguished Professor of Social and Behavioral Sciences and Chair

Anthropology 4597.03H

Ohio State University

The Prehistory of Environment and Climate (Honors)

Spring Semester, 201X, Credits: 3 hours

Instructor

Prof. Richard W. Yerkes
11:15AM Room 4008 Smith Lab
Laboratory
Phone: 292-1328

Office Hours

Mon/Wed. 11:30-12:30

E-mail: yerkes.1@osu.edu

Class Hours

Mon/Wed/Fri. 10:20-

4025 Smith

174 West 18th Avenue

Required Texts:

1. *Floods, Famines, and Emperors: El Niño and the fate of Civilizations*, by Brian Fagan, (2009) Basic Books **ISBN: 978-0-465-00530-7**
2. *El Niño in History: Storming through the Ages*, by César N. Caviedes (2001) University Press of Florida. **ISBN: 978-0-8130-2099-0**
3. *Paleoclimatology* 3rd ed., by Raymond S. Bradley (2014), Academic Press. **ISBN-13: 978-0123869135, a Kindle version is also available**

** Information on El Niño and related phenomena can also be found on Carmen and other websites.

GE statement: This course helps satisfy the *Social Science Human, Natural and Economic Resources GE requirement*. In Social Science courses students understand the systematic study of human behavior and cognition; the structure of human societies, cultures, and institutions; and the processes by which individuals, groups, and societies interact, communicate, and use human, natural, and economic resources. This course also helps satisfy the *Diversity Global Studies GE requirement*. In Diversity Global Studies courses students understand the pluralistic nature of institutions, society, and culture across the world in order to become educated, productive, and principled citizens. This course also helps satisfy the *Cross-Disciplinary Seminar GE requirement*. In Cross-Disciplinary Seminars students demonstrate an understanding of a topic of interest through scholarly activities that draw upon multiple disciplines and through their interactions with students from different majors.

The expected learning outcomes for this course are:

A. Social Science: Human, Natural and Economic Resources GE requirement:

- A1. Students understand theories and methods of social scientific inquiry as they apply to the study of the use and distribution of human, natural, and economic resources and decisions and policies concerning such resources.
- A2. Students understand the political, economic, and social trade-offs reflected in individual decisions and societal policymaking and enforcement and their similarities and differences across contexts.
- A3. Student comprehend and assess the physical, social, economic, and political sustainability of individual and societal decisions with respect to resource use.

In this course, students will learn how past climates, environments, and socio-economic systems are reconstructed, and how environmental change and human responses to those changes are

studied. Students will also appreciate how devastating recent catastrophes like the El Niño/Southern Oscillation (ENSO) phenomenon have been, how different individual and societal decisions in response to these events have affected sustainable human, natural and economic resources, and how similar events may have had an impact on prehistoric societies in different parts of the world.

B. Diversity: Global Studies GE requirement:

B1. Students understand some of the political, economic, cultural, physical, social, and philosophical aspects of one or more of the world's nations, peoples, and cultures outside of the U.S.

B2. Students recognize the role of national and international diversity in shaping their own attitudes and values as global citizens.

In this global course, students study contemporary and prehistoric societies in Mesoamerica, South America, China, and the Nile Valley, and learn how the political, economic, cultural, and philosophical differences among those societies shaped their response to ENSO events. Students will also learn why a global response to natural and human-induced environmental crises is needed and how cooperation between nations is needed to alleviate the impact of these events. The lessons that they learn from the past actions of these diverse societies will help them become informed citizens who are aware of the impacts of these events across the globe.

C. Cross-Disciplinary Seminar GE requirement:

C1. Students understand the benefits and limitations of different disciplinary perspectives.

C2. Students understand the benefits of synthesizing multiple disciplinary perspectives.

C3. Students synthesize and apply knowledge from diverse disciplines to a topic of interest.

In this course, students will gain an appreciation of the human condition in time and space by using resources and information drawn from different disciplines like Anthropology, Geography, and Meteorology to study rapid climate change and human responses to the changes. They will understand why an interdisciplinary approach will enhance the benefits and mitigate the limitations of different disciplinary perspectives. Students will prepare detailed oral and written reports on ENSO events and human reactions in different regions of the world, work with students from different major programs on the group projects, and draw on their diverse backgrounds and experiences to complete their assignments.

Course Goals: By the time the giant El Niño of 1997-98 was over, 2,100 people had died and at least 33 billion dollars worth of property had been destroyed or damaged. Since then, there have been other storms and disasters attributed to El Niño and the Southern Oscillation (ENSO). Were Ancient ENSO events and related natural disasters this devastating? Did they cause calamities that brought down ancient civilizations? In this course, we will study the relationship between human behavior and environmental and climate changes in the past. The course will focus on the ENSO phenomenon and the environmental calamities that have been attributed to it. Paleoenvironmental records from coastal Peru contain evidence for El Niño events spanning the last 5,000 years. Recent studies have shown how ENSO events transform the weather around the world. We will look at the evidence for ancient climate changes like these ENSO events and examine how they may have affected ancient societies in North and South America, Europe, North Africa, and Asia.

We will outline the methods that are used to reconstruct the past environment and climate and review the basic principles of human ecology, cultural adaptation and resilience, as we debate whether ENSO phenomena are examples of long-term weather cycles or if the recent severe El Niño and La Niña events have been triggered by human actions.

Class Format: When we meet in class we will discuss the topics covered in the reading assignments, and in additional material from other sources. Students **MUST** complete reading assignments by the date listed on the syllabus and attend class for lectures and discussion. Groups of students will examine ancient ENSO events and human reactions to these climate and environmental changes in different regions of the world, and present oral and written summaries of their results. There will be a first and a final take-home exam on material covered in the course. Students are encouraged to draw on experiences from other classes (or their own research) during the discussion periods.

Information on climate change and ancient civilizations, the impact of recent and past El Niño/Southern Oscillation (ENSO) events, and human responses to sudden environmental change and natural disasters is available on the web and in a number of bibliographies and other resources that are available through the OSU University Libraries (<http://library.osu.edu/>). Students should use these resources to learn more about the topics covered in the class and to prepare for their presentations and written assignments.

Grading: *The final grade will be based on:*

First exam:	100 points
Final exam:	100 points
Three Exercises:	50 points
Class Projects (Oral and Written):	100 points
Class Attendance and Participation:	<u>30 points</u>
<u>TOTAL:</u>	380 points

COURSE OUTLINE

<i>DATE</i>	<i>TOPIC AND READING ASSIGNMENTS</i>
January 12	Introduction , form teams for group projects. Begin First Exercise : Choose a recent <i>natural catastrophe</i> . 1. Describe the event, 2. Summarize the most significant effects on human populations, 3. Describe some of the responses to the catastrophe, and 4. Describe how the event seemed to have changed the lives of the people involved. (20 points)
January 14	Ecological Perspectives: Read Reserve Reading A : Harris: Ecology and Ecosystems.
January 16	Human Ecology: Read Reserve Reading B : Campbell: Preface and Introduction in <i>Human Ecology</i> .
January 19	No Class

<i>DATE</i>	<i>TOPIC AND READING ASSIGNMENTS</i>
January 21	Ecological Anthropology: Read Kottak (1999) “The New Ecological Anthropology,” <i>American Anthropologist</i> 101(1):23-35.
January 23	Current Research in Ecological Anthropology (guest speaker)
January 26	First Exercise Due, Summary and Discussion
January 28	Understanding and Reconstructing Past Climates: Read Chapter 1 in <i>Paleoclimatology</i> , by R. S. Bradley, pp. 1-10
January 30	Climate and Climatic Variation: Read Chapter 2 in <i>Paleoclimatology</i> , by R. S. Bradley, pp. 11-46.
February 2	Reconstructing Past Climates: An Example from the Eastern Mediterranean Read Weninger et al. 2009, “The Impact of Rapid Climate Change on Prehistoric Societies during the Holocene in the Eastern Mediterranean.” <i>PDF on Carmen</i>
February 4	Dating Methods I: Read Chapter 3 and Appendix A in <i>Paleoclimatology</i> , by R. S. Bradley, pp. 47-90, 507-510
February 6	Dating Methods II: Read Chapter 4 in <i>Paleoclimatology</i> , pp.91-124
February 9	Dating Past Climate changes, some examples
February 11	Ice Cores: Read Chapter 5 in <i>Paleoclimatology</i> , pp. 125-190.
February 13	Lonnie Thompson and Ice Core Research by the Byrd Polar Research Center http://www.dispatch.com/content/stories/science/2013/05/19/lonnie-thompsons-second-chance.html http://researchnews.osu.edu/archive/lonthmpps.htm
February 16	Current Research on Ice Cores (guest speaker)
February 18	First Take-Home Exam will be Available on Carmen; in-class review
February 20	Marine Sediments and Corals: Read Chapter 6 in <i>Paleoclimatology</i> , pp. 191-283.
February 23	Geological Evidence for Climate Change: Read Chapter 7 in <i>Paleoclimatology</i> , pp. 285-335.
February 25	Biological Evidence of Climate Change I, Insects and Pollen: Read Chapters 8 and 9 in <i>Paleoclimatology</i> , pp. 337-396.
February 27	Biological Evidence of Climate Change II, Tree-rings and Historical records: Read Chapters 10 and 11 in <i>Paleoclimatology</i> , pp. 397-470.
<i>DATE</i>	<i>TOPIC AND READING ASSIGNMENTS</i>

- March 2 **FIRST TAKE-HOME EXAM DUE IN CLASS, Discussion of the exam**
- March 4 **Changing Human Ecosystems: *Read*** Preface and Chapter 10 in *Floods, Famines, and Emperors*, pp. xi-xviii, 180-202; **and** pp. 200-207 in *El Niño in History*. Also see:
<http://www.virtualprofessors.com/how-nature-conquered-the-vikings-of-greenland>
- March 6 **An Example from Crete: *Read*** Reserve Reading C: Jennifer A. Moody: The Cretan Environment.

Second Exercise: Is there a correlation between the “Little Ice Age” and environmental changes on Crete? 1) Summarize the evidence for such a connection, and 2) discuss the effects of “Little Ice Age” climates on the Cretan landscape and the ancient Cretan people. **(15 points)**
- March 9 **Understanding Past Climates: *Read*** Reserve Reading D: W. J. Burroughs (1992): The Global Climate, in *Weather Cycles, Real or Imaginary?*
- March 11 **Discussion**
- March 13 **What is El Niño? *Read*** Chapters 1, 2, 3, and 12 in *Floods, Famines, and Emperors*, pp. 3-54; 223-242; and Chapters 1, 2, and 6 in *El Niño in History*.

Third Exercise: Define the El Niño/La Niña/Southern Oscillation (ENSO) phenomenon. You will also summarize and discuss your definition in class. Cite all the sources you used to prepare your definition (books, articles, web sites, etc.). Type or print out your definition. Use *American Anthropologist* format for citations and bibliographies (see: <http://www.aaanet.org/publications/guidelines.cfm>). **(15 points)**
- March 16-20 **Spring Break, No Class**
- March 23 **Affects of recent El Niño/La Niña events. *Read*** National Geographic Vol. 195, #3 (March, 1999): *El Niño/La Niña: Nature’s Vicious Cycle*:
<http://www.nationalgeographic.com/elnino/mainpage.html>
and: *El Niño modulations over the past seven centuries* (2013):
<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate1936.html>
- March 25 **Discussion**
- March 27 **El Niño and Ice-Cores, *Read*:** Reserve Readings **E**: Thompson *et al.* 1992: Reconstructing interannual climate variability; and **F**: Thompson *et al.* 1994: Glacial records of global climate: A 1500-year Tropical Ice Core Record of Climate (web link).
- DATE TOPIC AND READING ASSIGNMENTS**
- March 30 **El Niño, the North Atlantic Oscillation, and Global Warming, *Read*** Chapters 4, 5, and 11 in *Floods, Famines, and Emperors*, pp. 55-97; 203-221.
- April 1 **Discussion**

- April 3 **El Niño, History, and Prehistory, *Read*:** Reserve Readings **G:** D. B. Enfield, 1992: Historical and prehistorical overview of El Niño/Southern Oscillation.
- April 6 **El Niño and Archaeology, *Read*** Chapters 5 and 8, pp. 89-109, 139-145, 216-249 in *El Niño in History*; and El Niño and the Archaeological Record in Northern Peru: <http://www.saa.org/Portals/0/SAA/publications/SAAbulletin/17-1/SAA9.html>
- April 8 **Oral Presentations of Group Projects I Moche**
ALL READ Chapter 7 in *Floods, Famines, and Emperors*, pp. 119-138
- April 10 **Oral Presentations of Group Projects II Inka/Tiwanaku**
ALL READ Chapter 6 in *Floods, Famines, and Emperors*, pp. 73-97.
- April 13 **Oral Presentations of Group Projects III Maya,**
ALL READ Chapter 8 in *Floods, Famines, and Emperors*, pp. 139-158
- April 15 **Oral Presentations of Group Projects IV Chaco Canyon**
ALL READ Chapter 9 in *Floods, Famines, and Emperors*, pp. 159-177
- April 17 **Oral Presentations of Group Projects V Nile Valley**
ALL READ Chapter 6 in *Floods, Famines, and Emperors*, pp. 99-117
- April 20 **Oral Presentations of Group Projects VI: China**
ALL READ: <http://www.earth.columbia.edu/articles/view/2674>
- April 22 **Discussion of Results of Group Projects**
Final Exam will be Available on Carmen
- April 24 **Responses to Sudden Environmental Change: Lessons from the Past**
Read: Introduction, Chapter 9: Social Evolution, Hazards, and Resilience, **and Chapter 10:** Global Environmental Change, Resilience, and Sustainable Outcomes, in *Surviving Sudden Environmental Change* (2012) edited by J. Cooper and P. Sheets,
<http://muse.jhu.edu/books/9781607321682>
- April 27 **Summary and Review for Final Exam**
****written summary of group project is due in class***
- May 4 **Take-Home FINAL EXAM due in my office 4008 Smith Lab, by 4:00 PM**

THIS MATERIAL IS AVAILABLE IN ALTERNATIVE FORMATS UPON REQUEST. STUDENTS WITH DISABILITIES ARE RESPONSIBLE FOR MAKING THEIR NEEDS KNOWN TO THE INSTRUCTOR, AND ARE

RESPONSIBLE FOR SEEKING AVAILABLE ASSISTANCE FROM THE OFFICE OF DISABILITY SERVICES (ODS) AT 292-3307, Webpage: <http://ods.osu.edu/> AS SOON AS POSSIBLE, AND CERTAINLY PRIOR TO THE FIRST EXAMINATION.

Academic Misconduct:

All students should become familiar with the rules governing alleged academic misconduct. It is the responsibility of the **Committee on Academic Misconduct** to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. *Academic misconduct* includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). Additional information about can be found in the Code of Student Conduct (http://studentlife.osu.edu/pdfs/csc_12-31-07.pdf).

Ignorance of the rules governing academic misconduct or ignorance of what constitutes academic misconduct is not an acceptable defense.

Please Note: In case of unexpected instructor absences information will be posted on the Carmen page. In the event of a campus closure and class cancellation, University Communications will attempt to notify the campus and the media by 3 p.m. Verification of media announcements may be done by consulting multiple official sources, including residential cable and tuning to WOSU 89.7 FM Radio or at <http://wosu.org/> Do not call the Department of Anthropology.

Recommended readings:

An, Zhisheng and L.G. Thompson (1998). Paleoclimatic change of monsoonal China linked to global change. In: IGBP Publication Series 3: *Asian Change in the Context of Global Climate Change: Impact of Natural and Anthropogenic Changes in Asia on Global Biogeochemical Cycles*, edited by J. N. Galloway and J.M.Melillo, pp. 18-41.

Clark, A. J. (2008). *El Niño and the Southern Oscillation*. New York: Academic Press.

Couper Johnston, R. (2000). *El Niño: The Weather Phenomenon that Changed the World*. Hodder & Stoughton.

Diaz, H. F., and V. Markgraf, eds. (1992). *El Niño: Historical and Paleoclimatic Aspects of the Southern Oscillation*. Cambridge: Cambridge University Press.

Glantz, M. (2001). *Currents of Change: Impacts of El Niño and La Niña on Climate and Society*. Cambridge: Cambridge University Press.

Liu, K.-b, Z.Yao and L.G. Thompson (1998). A pollen record of the Holocene climate changes from the Dunde ice cap, Qinghai-Tibetan Plateau, *Geology*, 26(2): 135-138.

Liu, Y and Ding, Y. (1992) Influence of El Niño on weather and climate in China. *Acta Meteorologica Sinica*, Vol.6, No. 1, pp. 117-131.

Nash, J. (2002). *El Niño Unlocking the Secrets Of The Master Weather Maker*. Warner Books.

Sandweiss, D. H., et al. (2009). *El Niño, Catastrophism, and Culture Change in Ancient America*. Cambridge: Harvard University Press.

Thompson, L.G., V. Mikhalenko, E. Mosley-Thompson, M. Durgerov, P-N Lin, M. Moskalevsky, M.E. Davis, S. Arkipov, and J. Dai. Ice core records of recent climatic variability: Grigoriev and It-Tish ice caps in central Tien Shan, Central Asia. In: *Data of Glaciological Studies*, Number 81.

Thompson, L.G., T. Yao, M.E. Davis, K.A. Henderson, E. Mosley-Thompson, P.N. Lin, J. Beer, H.-A. Sinal, J. Cole-Dai, and J.F. Bolzan (1997). Tropical climate instability: The last glacial cycle from a Qinghai-Tibetan ice core. *Science* 276: 1821-25.

Thompson, L.G., T. Yao, E. Mosley-Thompson, M.E. Davis, K.A. Henderson and P.-N. Lin. (2000). A high-resolution millennial record of the South Asian Monsoon from Himalayan ice cores. *Science*, 289, 1916-1919.

Wang Ninglian, Yao Tandong, L.G. Thompson, K.A. Henderson, M.E. Davis. 2002. Evidence for cold events in the early Holocene from the Guliya Ice Core, Tibetan Plateau, China. *Chinese Science Bulletin*, 47(17): 1422-1427.

Whetton, P. and Rutherford, I. (1994) Historical ENSO Teleconnections in the Eastern Hemisphere. *Climate change*, 28, pp. 221-253.

Yao, T., L. G. Thompson, Y. Shi, Q. Dahe., K. Jiao, Z. Yang, L. Tian and E. Mosley-Thompson, 1998. Climate variation since the Last Interglaciation recorded in the Guliya ice cores. *Science in China* (Series D), 40(6), 662-668.

Zhang, X., Song, J. and Zhao, Z. (1989) The Southern Oscillation reconstruction and Drought/Flood in China. *Acta Meteorologica Sinica*, Vol. 3, No. 3, pp. 290-301.

Rationale for changing the GE status of *The Prehistory of Environment and Climate*, (ANT 4597.03H) to include Social Science (Individuals and Groups and Human, Natural, and Economic Resources) and Global Studies GE categories as well as Open Options (Cross-Disciplinary Seminar)

Why does this course qualify for GE status in the Social Science (Human, Natural, and Economic Resources) and Diversity (Global Studies) GE categories?

In this course, currently listed as an Open Options Cross-Disciplinary Seminar in the GE, students will study the relationship between human behavior and decision-making in contemporary and ancient societies across the globe by examining how these diverse societies responded to environmental and climate changes. The course will focus on El Niño and Southern Oscillation (ENSO) phenomenon and the environmental calamities that have been attributed to ENSO events. The responses of individuals and societies in Mesoamerica, South America, China, the Nile Valley, and the U.S. to these calamities in the past and the present will be examined in several group projects. How decisions that were made in response to rapid climate change altered the sustainable use of human, natural, and economic resources will be examined. Paleoenvironmental records from coastal Peru contain evidence for El Niño events spanning the last 5,000 years. Recent studies have shown how ENSO events are “teleconnected” and transform the weather around the world. These events often trigger devastating storms and disasters. Students will learn how ENSO events and other climatic and environmental changes are reconstructed, examine the evidence for significant ancient climate changes, and examine how they may have affected ancient societies across the globe. We will outline the methods that are used to reconstruct the past environment and climate and review the basic principles of human ecology, cultural adaptation and resilience, and human organization and debate whether ENSO phenomena are examples of long-term weather cycles or if the recent severe El Niño and La Niña events have been triggered by human actions. This topics covered in the course are global in scope. Students will gain an appreciation of human diversity and the use of human, natural, and economic resources in time and space by using information from Anthropology, Geography, and Meteorology to study environmental change and human responses, by preparing detailed oral and written reports on an ancient ENSO event and human responses and reactions in different regions of the world, by working with students from different major programs on these group projects, and by drawing on their diverse backgrounds and experiences to complete the coursework.

NB: This course has been listed as a recommended **Social Science** course in the *Honors Guides to General Education Requirements for the BA and BS degrees*, and has been used as both a Cultural Anthropology and Archaeology elective for Anthropological Sciences (BS) and Anthropology (BA) majors.

How the course objectives for Anthropology 4597.03H address the five expected learning outcomes for Social Sciences (Human, Natural, and Economic Resources) and Diversity (Global Studies) in the assigned readings, course topics, and oral and written assignments is summarized below.

Expected learning outcomes for Anthropology 4597.03H:

A. Social Science Human, Natural and Economic Resources GE requirement:

A1. Students understand theories and methods of social scientific inquiry as they apply to the study of the use and distribution of human, natural, and economic resources and decisions and policies concerning such resources.

In this course students will learn how past climates, environments, and socio-economic systems are reconstructed, and how environmental change and human responses to those changes are studied. By completing the reading, and course topics, students will learn how Anthropologists, Geographers, and Meteorologists reconstruct past climates, environments, and socio-economic systems, and study environmental change and human responses to those changes. By preparing detailed oral and written reports on an ancient ENSO event and human reactions in different regions of the world, students will see how these methods and theories are applied.

A2. Students understand the political, economic, and social trade-offs reflected in individual decisions and societal policymaking and enforcement and their similarities and differences across contexts.

Students will understand how devastating recent catastrophes like the El Niño/ Southern Oscillation (ENSO) phenomenon have been. They will also understand how political, economic, and cultural differences among the past societies and present nations of the world have affected their responses to environmental and climate changes and their use of human, natural, and economic resources. The assigned reading, course topics, and oral and written assignments will help students understand why a global response to natural and human-induced environmental crises is needed and how cooperation between nations is needed to alleviate the impact of these events.

A3. Students comprehend and assess the physical, social, economic, and political sustainability of individual and societal decisions with respect to resource use.

The assigned reading, course topics, and oral and written assignments will help students understand how different individual and societal decisions in response to these events have affected sustainable human, natural and economic resources, and how similar events may have had an impact on prehistoric societies in different parts of the world.

B. Diversity Global Studies GE requirement:

B1. Students understand some of the political, economic, cultural, physical, social, and philosophical aspects of one or more of the world's nations, peoples, and cultures outside of the U.S.

In this global seminar, students will gain an appreciation of the human condition in time and space by using resources and information from different disciplines like Anthropology, Geography, and Meteorology to study environmental change and human responses, by preparing detailed oral and written reports on an ancient ENSO event and human reactions in different regions of the world, by working with students from different major programs on the group projects, and by drawing on their diverse backgrounds and experiences in class discussion and in group projects where contemporary and prehistoric societies in Mesoamerica, South America, China, and the Nile Valley are studied. The assigned reading, course topics, and oral and written assignments will help students understand how these political, economic, and cultural differences among the past societies and present nations of the world have affected their responses to environmental and climate changes and their use of human, natural, and economic resources.

B2. Students recognize the role of national and international diversity in shaping their own attitudes and values as global citizens.

The assigned reading, course topics, and oral and written assignments will help students understand why a global response to natural and human-induced environmental crises is needed and how cooperation between nations is needed to alleviate the impact of these events. The lessons that they learn from the past actions of diverse societies in Mesoamerica, South America, China, and the Nile Valley covered in the group projects will help them become informed citizens who are aware of the impacts of these events across the globe.

Assessment plan for ANT 4597.03H (*The Prehistory of Environment and Climate, Honors*)

Assessment: This course will use two instruments to assess learning outcomes. First, we will use a pre and post course test to gauge the body of knowledge obtained over the course of the semester. The eight questions on the test will address each of the four course goals and expected learning outcomes (see rationale for change in GE status). The test will be delivered on the first and final day of classes and graded anonymously. In addition, embedded questions will be used in the midterm and final examinations during the semester. Results of these questions – scored as a part of regular examinations – will be tracked annually and will provide a longitudinal signal of class performance. Results (paper and electronic) of both assessment tools will be archived in the Department of Anthropology. NB: we have used both of these instruments in our assessment of current GE courses (e.g., ANT 2201 – *Introduction to Archaeology*) as well as core courses (e.g., ANT 3401 – *Fundamentals of Archaeology*) within our majors. Both have proven to be highly effective. Based on the last six years of assessment activities in our department, the percentage of “correct” student responses to the embedded questions clusters around 80%: we will therefore use this standard for assessing embedded questions in the ANT 4597.03H course. Pre and post course testing of expected learning outcomes will use 80% as the standard during the first year of administration. If an insufficient number of students achieve this standard, The course will be revised in order to focus more on those areas (e.g., theories and methods of social science inquiry, relationships between human behavior and environmental and climate changes, comprehending and assessing individual social values and decision-making processes during crises, understanding political, economic, cultural, physical, and social differences among the nations of the world., etc.) that students find problematic.