



BERINGIA: ITS PLEISTOCENE ENVIRONMENTS AND PALEOECOLOGY

INSTRUCTOR: Tyler Kuhn
OFFICE HOURS: By appointment
OFFICE LOCATION: TBA
TELEPHONE/E-MAIL: *provided in class*
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COURSE OFFERINGS

DAYS & TIMES: **When:** Monday & Wednesday
 Time: 9:00 – 10:30am
 Room: TBD

COURSE DESCRIPTION

This course presents a natural history overview of the subcontinent of Beringia—the unglaciated landmasses of eastern Siberia, Alaska and the Yukon that were connected via the Bering Land Bridge during glacial periods. We will cover a variety of topics ranging from the geologic formation of Beringia and the evolution of its flora and fauna to the history of human inhabitation. The objective of lectures will be to synthesize a variety of primary data and scientific theory so students can develop an understanding of the physical, climatological, ecological and biogeographical mechanisms shaping Beringia's landscapes and ecosystems.

LEARNING OUTCOMES

Upon successful completion of the course, students will:

- a. *understand the geologic formation of Beringia and its place in the world*
- b. *better understand the evolution and ecology of Beringia's animals, plants, and ecosystems, including their history of extinctions and appearances*
- c. *be able to define and explain major geological, climatological, biological, and archaeological events in Beringia prehistory*
- d. *understand and critically evaluate the types of data and analyses used by paleo-scientists to reconstruct events in the past and to test paleo-hypotheses*
- e. *be able to explain the forces shaping Beringia's modern landscapes*

- f. *be able to use their knowledge of Beringia 's prehistory as context to better understand and evaluate current issues facing Yukon and the north, especially resource management issues*

DELIVERY METHODS/FORMAT (3-0-0)

Lectures are 1.5 hours long, on Monday & Wednesday mornings.

COURSE PREREQUISITES

Second year standing in Science or permission of instructor.

COURSE REQUIREMENTS/EVALUATION

Assignments:

Each week will be composed of a lecture class discussing a particular topic, and a discussion class of an assigned reading related to the lecture topic. Most of the readings will be general syntheses or review papers chosen for readability, but a few come from the primary literature, so students will develop a feeling for the methods and data used in Beringian research. Some papers will be a challenge to read, and rather than getting bogged down in an intense study of each paper, students are advised to do their best to read through each one to gain familiarity with the broader questions, approaches (methods), types of data, and conclusions being discussed.

For each assigned reading, students will receive a set of key questions related to that assigned reading. Students will submit typed answers to the questions at the start of the next class. Typically, this will entail 3-4 questions that should be answered in 1-2 pages (total). There will be one assignment each week. Assignments will be graded mostly to determine whether students are reading the papers and can extract key points from these readings. Students will be expected to provide analyses and discussions at a level consistent with topics covered during the lecture class.

Examinations:

There will be one midterm examination (Wednesday, February 20th, 2013) and a final exam written during the designated exam period at the end of term. The exams will be a combination of short and long essay questions based on materials presented in lectures and emphasized in the assigned readings. The final exam will focus on subject matter presented after the midterm, but will build on all concepts discussed in class. Students will be allowed ample time to write their essays.

Evaluations:

Final exam	30%
Midterm exam	30%
Weekly assignments	40%

Plagiarism:

Plagiarism involves representing the words of another writer or thinker as your own without citing the source from which the material is taken. If the words of others are directly quoted or paraphrased, they must be cited according to standard procedures. Resubmission of a paper for which you have previously received credit and the submission of the same paper for two courses also constitute plagiarism and academic dishonesty.

Plagiarism will not be tolerated. It is a serious academic offence and will result in a mark of zero in the course. It may also lead to further discipline, including dismissal from the College. Do not jeopardize your academic future by plagiarizing.

COURSE MATERIALS:

There is no textbook for this course. Each week, students will receive digital copies of 1-2 assigned readings (papers) relevant to the following week's lecture.

EQUILAVENCY/TRANSFERABILITY

UBC Eosc 1st yr (3)

SFU Geog 1xx (3)

UNBC Nors 2xx (3)

UR Non-science elec. (3)

UAF Biol Fin

UVIC Biol 200L (1.5)

UAS Biol S2 Elec. (3)

COURSE SCHEDULE AND WEEKLY LECTURE TOPICS

- Week 1 (Jan 7)** Course introduction
Geologic Setting—Building Early Beringia
- Week 2 (Jan 14)** The Mesozoic Era-- Early Land Bridges, Tropical Climates, and Arctic Dinosaurs
- Week 3 (Jan 21)** The Tertiary Period-- Early Mammals in the Far North and Climatic Cooling
- Week 4 (Jan 28)** Cenozoic cooling, glaciations and Ice Age geography
- Week 5 (Feb 4)** Pleistocene Vegetation and Ecosystems
- Week 6 (Feb 11)** The “*Mammoth Steppe*”

Midterm exam Feb 13 (up to week 5)

- Week 7 (Feb 25)** Pleistocene Mammals

No classes March 4 - March 8 for Reading Week

- Week 9 (Mar 11)** Pleistocene Mammals
- Week 10 (Mar 18)** Human Pre-History in Beringia
- Week 11 (Mar 25)** The Pleistocene-Holocene Transition and Extinctions

No class Apr 1 (Easter Monday)

- Week 12 (Apr 3)** Post-Glacial Landscapes and Holocene Ecosystems
- Week 13 (Apr 11)** Field Trip to Beringia Centre (*TBD*)
- Week 14 (Apr 18)** Final exam (date/time to be announced)