Climate-Change Literacy: Ice Ages to Carbon Management

An Integrated, Interdisciplinary Course Sequence on Climate and Climate Change

GOAL: Create a two‐semester integrated sequence of course modules that survey our current understanding of past and future climatic changes on planet Earth, and explore the implications of these changes for Life, including humans.

RATIONALE: An increasing number of climate change courses are being offered in various departments and disciplines at UAF. Instead of multiple, semi‐overlapping discipline‐based courses, we propose one cooperatively taught, *interdisciplinary yet carefully integrated course sequence.* Such a course will integrate key climate concepts with contributions from faculty climate change experts to produce students who are broadly but soundly literate in climate change processes and issues. Departments could then offer more specialized courses that build upon this basic climate change literacy. The world‐class expertise and resources on the UAF campus, *integrated* through a course series like this one, could potentially draw outside students, agency scientists, and others who find themselves in need of greater 'climate change literacy'.

AUDIENCE: Senior undergraduates and graduate students in all departments. Climate change affects a wide range of Earth systems, so the subject is inherently interdisciplinary. The wider the mix of students, the better the class. This course is designed to serve as a Senior Capstone for Geography majors and also to serve as a 'climate change primer' for graduate students embarking on climate‐related projects. We are especially interested in involving students from the Resilience and Adaptation Program.

COURSE DELIVERY: In order to adequately provide both breadth *and* depth this will be a two semester course, composed of four 'modules'. While the semester course will be managed by a lead instructor, the goal is to include faculty from different disciplines into the modules or as guest lectures. The four modules are as follows:

i. Lessons from Climate History
ii. Climate Dynamics and Climate Modeling

Fall Semester

iii. Observations of Current Climate Change
iv. Adaptation and Mitigation

Spring Semester

The overall idea is to begin with the study of climate change patterns from the past, then move toward a deeper understanding of the processes inherent in climate dynamics and modeling. The second semester will explore recent and current evidence of climate change, and finally arrive at efforts that are underway to mitigate and adapt to climate changes. Modules are intended as organizational units, but the course will *remain integrated by design*. Key concepts and issues will visited in different modules from different disciplinary perspectives.

MODULES AND CREDIT STRUCTURE:
Course could be delivered as four modules of two credits each (two 4 credit semester courses). Undergraduates will need to take it as full 4 credit semester course, graduates my take separate modules.