ORIGINAL

University Studies
Cluster Course Addition
Adding an already approved "U" course to another cluster
(When addressing questions, please attach a separate sheet)

1. COURSE TITLE AND NUMBER: Climate and Water Resources GEOG 310

PROPOSING FACULTY (Name, signature, and department): Heejun Chang, _____ Geography

TO WHAT CLUSTER ARE YOU PROPOSING ADDING THIS "U" COURSE? Global Environmental Change

FOR WHAT OTHER CLUSTER(S) HAS THIS COURSE ALREADY BEEN APPROVED? Sciences - Liberal Arts

2. AVAILABILITY:
   Once per Year

3. GENERAL EDUCATION GOALS: SUITABILITY & CLUSTER INTEGRITY
   This class examines climate variability and change and the impacts on water resources. Global climate change is one of the major forces driving the availability and quality of water. I explicitly discuss the implications of global change in water resource management. With the incorporation of human dimensions of global change research in class discussion, the addition of this class to the global environmental change cluster will enhance students' understanding of the earth's environment in an integrative way. (A student who took this class in Spring 2003 gained a credit for global environmental change cluster.)

OBTAIN CHAIR AND CLUSTER COORDINATOR SIGNATURES BEFORE SUBMITTING

DEPARTMENT CHAIR(S): _____. DATE: 11/15/04.

_____. DATE: _____.

CLUSTER COORDINATOR: _____. DATE: 10/27/04.

THE ORIGINAL + 12 COPIES OF THE PROPOSAL MUST BE RECEIVED AT UNIVERSITY STUDIES (CH 163) BY NOVEMBER 1, 2004

PROPOSING FACULTY: Heejun Chang

COURSE TITLE AND NUMBER: Climate and Water Resources GEOG 310

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COURSE APPROVED FOR CLUSTER INCLUSION
All changes to Clusters must be approved by PSU's Senate Curriculum Committee.

CHAIR, CLUSTER COORDINATORS: _____. DATE: _____.

CHAIR, UNST COMMITTEE: _____ DATE: _____.

GEOG 310U/ SCI 333U

Climate and Water Resources

TR 10:00-11:50 413 Cramer Hall

Course Description

This course is intended to teach you to understand the main issues of climate variability and change and their impacts on water resources. We will cover such topics as the importance of water in the climate system, the global water cycle and regional hydroclimate, water resource impacts of climate variability (e.g., El Niño/Southern Oscillation and Pacific Decadal Oscillation) and change, and human responses to water resource hazards (floods and droughts) caused by extreme events and potential global climate change. Geog 310U/Sci 333U will be interdisciplinary and collaborative in nature, integrating real world examples with class discussion and linking theory with decision-making. Course participants are expected to engage in weekly readings and discussion and to write and present a research project.

Instructor

Dr. Heejun Chang
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Email: changh@pdx.edu
Phone: 503-725-3162
Office hours: T&R 12:30-13:30

Textbook

1) Collier, M and Webb, R.H. (2002) *Floods, Droughts, and Climate Change*, The University of Arizona Press (Available at PSU bookstore)

2) Lewis, W. M. ed. (2003) *Water and Climate in the Western United States*, University Press of Colorado. (Available at PSU bookstore)

3) IPCC (2001) *Climate Change 2001: Impacts, Adaptation and Vulnerability*, Cambridge University Press. (Available at http://www.grida.no/climate/ipcc_tar/wg2/index.htm)

Grading

Term project (40%), Quizzes (30%), Book and article reviews (20%), Participation (10%)

Term project: The term project asks you to collect data appropriate for this course and to critically analyze the data to support any aspect of the problem of interest. This project is a two- or three-person group project and is presented in the form of a poster at the end of the term. Late term project will not be accepted (Due date 10:00 AM Thursday, Dec 2nd).

Quizzes: There are three quizzes in this class. The tests will not be cumulative. Quizzes will consist of multiple choice and short answers. Materials will be from the assigned readings. A study guide will be posted on the class webCT. There will be no make-up quizzes except for ***documented*** medical or family emergencies. University policies on academic honesty apply.

Article Review: (Double-spaced, 12 fonts, 1 inch margin, 2 page limit, No late submission will be accepted). Journal articles are available at **http://psu-eres.lib.pdx.edu/courseindex.asp**

1) Appropriate citation (author, year, title, journal name, volume, page)
McDonald, G.M., Szeicz, J.M., Claricoates, J., Dale, K.A. (1998) Response of the central Canadian treeline to recent climate change. *Annals of the Association of Geographers* 88: 183-208.

2) Problem statement
- What question(s) do(es) the author(s) try to answer? What are the hypotheses?
- What goals and objectives are found in the article?
- Is this an important or a novel question?

3) Data/ Methods
- What kinds of data were used? Did the author(s) collect the data?
- What methods (e.g., statistical or GIS) were used?

4) Results
- What are the findings of the article? – What is most surprising?

5) Your own evaluation of the article
- Did the author(s) answer the hypotheses?
- Were the data enough to support the hypotheses?
- Was the method employed appropriate to answer the research questions?
- What do you find most interesting about the article?
- What remains unanswered?
- Would you like to replicate some of the approaches adopted in the article? If not, how would you like to approach differently?

Tentative lecture schedule

Date	Topic	Activities	Readings
09/28 – 09/30	Introduction to the course Hydrologic cycle		Collier and Webb 1,3
10/05 – 10/07	Climate system Climate variability	Poster assignment discussed (10/07)	Collier and Webb 5,6
10/12 – 10/14	Severe weather (Floods and droughts)	Quiz 1 (10/14)	IPCC 4.2 Collier and Webb 2
10/19 – 10/21	Teleconnections and Hurricanes	Poster assignment update (10/21)	Collier and Webb 8 – 10
10/26 – 10/28	Evidence of climate change	Article review due (10/28)	Collier and Webb 7, 11 – 14
11/02 – 11/04	Climate variations in the American West	Quiz 2 (11/02)	IPCC 1 Lewis 1 – 4
11/09 – 11/11	Climate impacts Veterans' day		IPCC 4.3 – 4.5 Lewis 6, 7
11/16 – 11/18	Responses to climate change	Drafts of poster content / layout due (11/16)	IPCC 4.3 – 4.5, 15.2.1 Lewis 9 – 12
11/23 – 11/25	Society, Institutions, water Thanksgiving	Quiz 3 (11/23)	IPCC 4.6 – 4.8 Lewis 13, 15
11/30 – 12/02	Society, Institutions, water Poster Presentation (12/02)	Book review due (11/30) Poster due (12/02)	IPCC 4.6 – 4.8 Lewis 16
12/07 (Tue) 10:15-12:05		Poster presentation	

University Studies
Cluster Proposal Cover Sheet
2005-2006

Cluster: Global Environmental Change

Title of course: Climate and Water Resources

Course Number: GEOG310

Proposing Faculty: Heejun Chang

Cluster Coordinator: Michael Cummings

Cluster Course to New Cluster X

Other clusters this course is assigned to:

Non 'U' course proposed to Cluster ____

Removal ____

UNST Committee-- PASS: Yes ☐ **No** ☐

If no, reason: _____

UCC Committee-- PASS: Yes ☐ **No** ☐

If no, reason: _____
