Geography 418 and Biology 618 – BIOGEOGRAPHY
Autumn 2014
Lecture section (no lab) 3 credits

Time/Place: 1-2 PM Murie Building room 103

Instructor: Dr. Daniel Mann, Department of Geosciences, UAF
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Office Hours: immediately after lecture

Course Description
Biogeography is the Geography of Life. This is a large field with relevance to many other disciplines. This lecture course emphasizes the biogeography of the polar, and alpine regions. We pay special attention to the effects of climate change on biogeography. Geography 418 and Biology 618 are taught concurrently. Biology 618 requires extra readings and class presentations.

Course Prerequisites: BIOL 271 Ecology, GEOG 339 Mapping and Landscape Analysis, GEOS 401 Geomorphology, or instructor’s permission. Enthusiasm is also required.

Course Objectives: This is a ‘synthesis’ course for upper division Geography, Geology, and Life Sciences undergraduates and graduate students. Students will gain a foundation in basic biogeography. Throughout, I emphasize the inevitable influences that human ecology has on the biogeography of other species. Lectures emphasize aspects of biogeography most pertinent to Alaska. The textbook and additional journal articles contribute to a geographically broader perspective.

Instructional / Teaching Methods: This is a lecture course that relies on students keeping up with assigned readings. There will be 3-5 guest lecturers over the course of the semester. All students will write term papers after developing a proposal describing the topic they wish to explore. Graduate students present their term paper topics in class. There will be 3-4 optional field trips offered during this semester. Some of these are in conjunction with Geography 493, Ice-Age Alaska.

Learning Methods / Student Assignments: Lectures and readings will give students a sound background in biogeographic processes and patterns. All students will submit a term paper on a topic of their choice. In addition, graduate students will present a ½ hour-long lecture. Graduate students are required to read additional scientific papers.

Required Text: Lomolino et al BIOGEOGRAPHY, 4th edition. Additional readings will be posted on the class DROPBOX.
SCHEDULE OF LECTURES, EXAMINATIONS, AND TERM PAPER

(NOTE: check the class DROPBOX frequently for updated versions of this schedule)

Week 1: Friday Sept 5: Introduction, Requirements

Week 2: Sept 8, 10, 12: Solar radiation, Temperature, Moisture, Microclimate

Week 3: Sept 15, 17, 19: Soil Basics, Soil Development in the Arctic

Week 4: Sept 22, 24, 26: Soil Development in Southeast Alaska; Soil Development in the Boreal Forest; Species Ranges 1

Week 5: Sept 29, Oct. 1, 3: Disturbance 1; Species Ranges II; Primary Succession 1

Week 6: Oct 6, 8, 10: Treelines; Primary Succession in Boreal Forest; Primary Succession at Glacier Bay

Week 7: Oct 13, 15, 17: Fire Disturbance; Vegetation-Fire Interactions in Alaska; the geography of carbon

Week 8: Guest Speakers and Midterm:
   Monday Oct 20: Glenn Juday: Ecological effects of Alaskan fires
   Wednesday Oct 22: Dave Klein: Biogeography of Bering Sea Islands
   Friday Oct 24: MIDTERM EXAMINATION

Week 9: Oct 27, 29, 31: Historical biogeography, Continental drift, History of the biosphere

Week 10: Nov 3, 5, 7: Climate change, Ice ages
Week 11: Nov 10, 12, 14: Dispersal in general, Human dispersal as a case study, Island biogeography

Week 12: Nov 17, 19, 21: Biogeography of evolution and extinction

Week 13: Nov 24, 26: Megafauna extinctions in the Arctic; New Zealand extinctions; ice age refugium

Week 14: Dec 1, 3, 5: Biogeography of solar systems; conservation biogeography

Week 15: Dec 8, 10, 12: graduate student presentations

Electronic copy of term paper due at 5 PM, Friday December 12

Monday Dec 15: FINAL EXAMINATION
Class presentations: Graduate students will make a 1/2 hour presentation of their term paper topics.

Term Paper: A 5-10 page term paper (including illustrations) is required. Topics vary according to individual students' interests. Detailed guidelines for the term paper will be given in lecture.

Assignments and Grading:
Quizes on readings: 25%
Midterm Exam: 25%
Final Exam: 25%
Class Participation (attendance + discussion + (for graduate students) class presentation): 5%
Term Paper: 20%

Attendance: attendance at lectures is mandatory.

Course grades will be assigned as indicated at the table below. Course %’s are for THIS course only and may vary with different instructors. Grade point values are indicated on the table as well. Please see “Academics and Regulations” section of UAF 2007-2008 Catalogue.

grade % GP
A+ 100-97 4.0
A 96-92 4.0
A- 91-90 3.7
B+ 89-87 3.3
B 86-82 3.0
B- 81-80 2.7
C+ 79-77 2.3
C 76-72 2.0
C- 71-70 1.7
D+ 69-67 1.3
D 66-62 1.0
D- 61-60 0.7

Course Grading Scale: All grades are determined on an absolute score (with no curve) according to the following scale:
A = 90-100 percent: outstanding work, mastery of topic
B = 80-89 percent: above average work, all assignments completed well
C = 70-79 percent: average, all or most assignments completed, most work satisfactory
D = 60-69 percent: pass, unsatisfactory or missing work
F = less than 60 percent: failure to meet requirements of course
Support and Disabilities Services: The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. The course instructors will work with the Office of Disabilities Services to provide reasonable accommodation to students with disabilities. Please notify the instructor of any special needs.

Plagiarism/Academic Integrity: University Standards and Policies apply (see UAF Catalog).

Extra Credit: Extra credit is not an option in this course except under unusual circumstances.

Information on Exams and Assignments: Examination format will include a mixture of multiple choice, short answer / diagram / map, and essay.