BIO A 382: Human Population Biology
Autumn 2007

Instructor: Dr. Steven Goodreau
Office: Denny 140
E-mail: goodreau@u.washington.edu
Phone: (206) 685-3870
Office Hours: Thurs 2-3 and upon request

Class meeting time: Tues, Thurs 12:30-1:50
Class meeting place: Parrington 106
Class homepage: faculty.washington.edu/goodreau/bioa382

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Catalog description: Human population biology with reference to capacity for growth in population size. Interaction of human biology, population structure, and culture in promoting such growth. Effects of economic, demographic, medical, and ecological factors.

Full description: Human population biology is at the core of many of the most pressing issues facing the human species today: overpopulation, the changing age structure of economically developed societies, cross-cultural differences in mortality, and emerging infectious diseases, to name just a few. This course will explore the relationships between these population-level phenomena and events in the individual lifecourse. Insights from evolutionary theory (both biological and cultural) will be emphasized throughout. Students will obtain an overview of some of the many sets of tools needed to understand these phenomena, including demography, epidemiology, and population genetics. Students should develop a qualitative understanding of the theoretical issues involved as well as an ability to analyze these issues using quantitative methods.

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Prerequisites: BIO A 201, BIOL 161, BIOL 180, or BIOL 220, or similar. In other words, a general familiarity with biological concepts, especially evolutionary theory. A general comfort with mathematical concepts is also helpful, especially basic probability. (We will review these briefly at the beginning of the quarter). We will not be engaging in any complex mathematics, although we will learn how to represent demographic, social and biological concepts mathematically.

Readings: The text book for this course is *Human biology : an evolutionary and biocultural perspective*, edited by Stinson et al. It is available at the UW bookstore; there is also a copy on reserve at Odegaard. The text is rather dense so readings are relatively short. The lectures will tend to emphasize "big concepts" found in the readings, using some of the detail from the readings to do so. Note that you will remain responsible for all of the readings even when not directly covered by the lecture.

Course assignments: There will be two **problems sets,** two **short response papers,** a **midterm exam,** and a **final exam**.

Problem sets: Each problem set will be handed out during lecture and will be due one week later. Problem sets will include both quantitative problems and short written answers. They are designed to help you integrate the material we have covered. They may be worked on collectively, since collective problem solving (if done properly) can lead to some of the deepest learning. If you work in a group, please indicate your work partner(s) on your paper. Each of you should hand in a separate answer set, which you will be graded on separately. Please do not work in groups larger than 3 or 4. You may also use any books or notes you wish.

Short response papers: These will also be handed out during lecture and will be due one week later. They are expected to be 2-3 pages double-spaced. They are designed to integrate the material in the more qualitative sections of the class. Although you may use any books or notes you wish and consult with each other, you are expected to work individually and independently on the writing.

Midterm and Exam: The midterm will cover material in the first half of the class, and the final exam the latter half. Much of the material in the latter half builds upon foundations in the first half, so in that sense material in the first half may be covered in the final. The midterm and final will be weighted equally.

Midterm: Thurs, 08 November in class
Final: Thurs, 13 December from 10:30-12:20 in the classroom

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Course Policies:

Grading:

Problem sets 12.5% each *x* 2 =	25%
Short papers 12.5% each *x* 2 =	25%
Midterm	25%
Final	25%

Late assignments: Grades for late assignments will depreciate by 10% per day, including any fraction of a day late. For example, if you would have gotten a 95% on the problem set, it depreciates to 85.5% for being one day late, 77% by for 2 days late, and so on. I will not accept assignments more than a week late.

Other Policies: Use common sense, be respectful of each other and yourself, and follow the University's Student Conduct Code (http://www.washington.edu/students/handbook/conduct.html) and policies on Academic Honesty (http://depts.washington.edu/grading/issue1/honesty.htm), which it is your responsibility to be familiar with.

Dates	**Topic**	Questions	Readings	Assignments
Thu 27-Sep Tue 02-Oct	Introduction	What is human pop biology, and why do we study it? What are the basic tools we will use?	1-23 (*ignore big figures & box 1.2)*	
Thu 04-Oct Tue 09-Oct	Formal Demography	How do we tabulate lifecourse events? What can we learn from the patterns that emerge?	507-517 (incl. boxes!)	
Thu 11-Oct Tue 16-Oct Thu 18-Oct Tue 23-Oct	Fertility	What are the proximate determinants of fertility? How does fertility vary across societies? How is fertility regulated, biologically and culturally? What are the ultimate determinants of fertility?	559-570 570-582	 PS 1 due
Thu 25-Oct Tue 30-Oct Thu 01-Nov Tue 06-Nov	Mortality	How do we understand causality in morbidity/mortality? How do infectious diseases spread through populations? How have humans evolved in response to pathogens? What are the ultimate determinants of chronic diseases?	225-235, 255-257, Box 7.2 260-266 273-280 257-260	 Paper 1 due
Thu 08-Nov	Midterm			Midterm
Tue 13-Nov Thu 15-Nov	Pop Size and Regulation	How has human demography changed through time? How does this relate to cultural change?	553-559 517-522, 528-533	
Tue 20-Nov *Thu 22-Nov* Tue 27-Nov Thu 29-Nov	Pop Gen	What are the basics of genetics as relates to population? *THANKSGIVING* How do fertility and mortality relate to evolution? How do population size and migration relate to evolution?	47-64 (mostly review) 87-93 93-100 (exc. Box 4.2)	Paper 2 due
Tue 04-Dec Thu 06-Dec	Human Pop Diversity	How does genetic diversity relate to culture and history? What does “race” mean from a biocultural perspective?	78-81, 103-105	PS 2 due
Thu 13-Dec				FINAL