

**Population Issues in Anthropology (Anth 5234/6334)
Fall 2022
3 credits (QI, SUSL)**

Instructor: Renee Pennington

Office: GC 4625

Hours: MW after class; Zoom by appointment or announcement

Email: Canvas (the best way to reach me) or renee.pennington@anthro.utah.edu

Department Phone: (801) 581-6251

Web: Canvas

Classroom: GC 5750

Anth 5234 and Anth 6334 meet together MWF 9:40–10:30 AM in GC 5750.

Description

This is an advanced course in biological anthropology. It is about the history and dynamics of the human population. Topics include changes in numbers of people and their age distributions; land use, residence patterns and density; epidemiology of pre- and post-industrial cultures; history of the human diet; the Industrial Revolution and its social and evolutionary consequences.

Prerequisites

The course is for juniors and seniors (Anth 5234) who have some background in anthropology and for graduate students interested in advanced concepts in biological anthropology (Anth 6334).

The course involves use of quantitative methods so you will need some basic math skills to succeed. In addition, I strongly recommend that students enrolled in this course know how to use software such as Excel (or any programming language) to produce solutions to iterative equations.

Anth 5234

- Math 1030 or higher; and
- either Anth 1010, Anth 1020, Anth 1030 or Anth 1050

Anth 6334

- Math 1030 or higher; and
- Graduate standing

Course materials

There is no textbook to buy as you will be following in-class lectures about how to do simple (though perhaps tedious) quantitative measurements of population;

you will then use the methods you learn to interpret data. I post my notes and assign articles about their relevance to anthropology on Canvas as we go.

Students can do the course problems using a scientific hand calculator and graph paper, but I recommend you use something like a spreadsheet program such as Excel to do many of them.

In sum, to do this course you will need

- Internet to access online readings and course notes.
- A basic (i.e. inexpensive) scientific hand calculator such as the Texas Instruments TI-30XA to use for the midterms as no phones allowed during exams. Most students can do the calculations on the midterms by hand, if they have learned the concepts.
- Graph paper.
- Access to software such as MS Excel or program that can do similar computations.

Grading

Anth 5234

Assuming we are able to do the course in-person as anticipated, 60% of the course grade will be from homework, and 40% from 2 midterms.

The course will be divided into five or six sections. In each section we focus on significant and interesting issues in human population dynamics and learn a quantitative approach to understanding more about the issue.

Each of the sections has a large homework assignment, due about every 2 weeks. The assignment will be distributed in class and posted on Canvas about one week before it is due.

For each assignment students typically prepare a short, neatly written report in which they

- analyze data using a quantitative method learned in class;
- produce graphical representation of the quantitative analysis; and
- write a page or two about the connection between the math, the graph and the population issue in anthropology.

Assume the following percentages for grades: > 93 A, 90-93 A-, 87-89 B+, 83-86 B, 80-82 B-, 77-79 C+, 73-76 C, 70-72 C-, 67-69 D+, 63-66 D, 60-62 D-, and < 60 Fail. I may curve the grades at the end of the semester.

Anth 6334

Students enrolled in Anth 6334 should meet with me early in the semester about additional requirements for graduate credit. Normally Anth 6334 students complete a research project in addition to the Anth 5234 requirements. The research project is normally a component of a student's thesis. The homework and midterms are graded on a separate scale.

Dates

The first midterm will be during class Wednesday, October 19. The second midterm will be during the final exam period for this course, which is Tuesday, December 13, at 8 am. The midterms may incorporate short “take home” writing assignments.

The first homework assignment is due Friday, September 9. Subsequent homework assignments will be due about every two weeks, depending on the pace of the course. Assignments can be submitted in person (preferred) or electronically through Canvas. They may also be submitted in advance of the due date.

Attendance Requirements

Per University policy (<https://regulations.utah.edu/academics/6-100.php>) I expect regular attendance at all class meetings, but attendance is not, technically, part of your grade. I do however give an extra credit point here and there to students who participate in class. Class participation includes asking questions or providing commentary during class time as well as responding to (or initiating) discussions in Canvas about course content. I also reward students who notify me of errors in course content (such as typos, broken links). Increases to final course grades are normally limited to one-third of a letter grade.

Late work

I will accept late homework but students will be penalized 20 percentage points for any submitted after the due date. You will receive a zero on any homework assignments not submitted by Friday, December 9.

Students must take the midterms as scheduled. If you somehow miss an exam get in touch immediately. If you have a documented and compelling excuse (such as an unexpected and severe illness) for missing a midterm, I may allow you to take it an alternative time. In most cases you will be expected to take a missed exam immediately. In the event you miss Midterm 1 and refuse take it in a timely manner (and certainly no later than our last class on Wednesday, December 7), you will receive a zero on it. If you miss Midterm 2, and I allow you to take it an alternative time, I may not be able to grade it until January 2023.

If you experience unusually difficult circumstances such as a prolonged illness or family tragedy that prevent you from doing school work, please get in touch about a possible extension in advance of the missed deadline.

Time commitment

A general rule of thumb is that students will need to spend about two hours outside of class for every credit hour in-class. Therefore, in addition to the

time spent going through lecture material I post, students should plan to spend about six hours per week outside of class on readings and assignments.

Course objectives and learning outcomes

By the end of the class students will be able to • apply anthropological research methods to answer a question or solve a problem and • explain aspects of human variation using evolutionary and social theory.

A central goal of the course is to teach students how to make powerful inferences about human population history using simple models.

Teaching and learning methods

Lectures, graded and ungraded homework, exams and possibly online discussions.

Topics

Below is a list of topics I plan to cover in the course and approximate due dates of the associated homework assignment. Readings will be assigned as we go and listed on Canvas.

We will spend about two weeks on each topic. Since I prefer to follow the interests and strengths of students in the class rather than a strict schedule, I may end up shifting things around a bit.

1. Population growth models and projection. Exponential growth of populations associated with changes from small hunter gathering groups to larger farming communities. Calculating and interpreting intrinsic growth rate, doubling time and half-life of populations. Applications to understanding the use of models in anthropology, especially stable population models and population projection, and effects of heterogeneity (frailty) on population composition. (Homework 1 due Friday, 9/9.)
2. Life table models. Estimating expectation of life from death rates (or the inverse - survival rates) of populations. The exponential formula as a failure time model. Applications to quantifying changes in death rates associated with human population expansions. (Homework 2 due about 9/23.)
3. Logistic growth models. Carrying capacity, maximum sustainable yield and resource depletion. r- and K- species. Applications to prey items available to prehistoric peoples as well as modern herders and hunters. (Homework 3 due about 10/7.)
4. Infectious disease and population size. The SIR model and disease epidemics. Herd immunity and vaccination. This is the math behind why large populations can spread deadly infectious diseases faster than small, dispersed populations and why they are more likely to persist in large populations (compared to small populations). (Homework 4 due about 11/4.)
5. Disease ecology. How altering our habitat (e.g chopping down trees) causes critters that make us sick to be more successful. Applications to creation of new ecotones, loss of K-species habitats and spread of r-species disease vectors associated with human population expansions. (Homework 5 due about 11/18.)
6. Either 1) Food, energy, and nutrition in human history. Nutritional disease associated with agriculture and dependence on few crops and energy, nutritional needs of humans in general. Land use. Or 2) Population pyramids. What the age structure of a population reveals about it's history and vital rates. (Homework 6 due about 12/7.)

Each homework assignment is normally equally weighted. If we get through all 6 topics each will be worth 10% of the course grade.

If we get through just 5 topics the due dates will shift and each will be worth 12% of the course grade.

Boiler Plate Items

Faculty and student responsibilities

Please respect everyone's right and expectation to learn in the classroom. This means all of us should engage in respectful discussion with each other during class time and avoid behaviors that distract others.

You are responsible for making sure I receive assignments before the deadline and that you can access readings and other course materials well before you need them.

University and department policies

ADA Statement: The Americans with Disabilities Act. The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit <https://safeu.utah.edu>.

Addressing Sexual Misconduct: Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Wellness Statement: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness (<https://wellness.utah.edu>; 801-581-7776).

Student Code: (Policy 6-400) All students are expected to maintain professional behavior in the classroom setting, according to the Student Code (<https://regulations.utah.edu/academics/6-400.php>). Students have specific rights

in the classroom as detailed in S. II of the Code. The Code also specifies standards of behavior (S. III) and academic conduct (S. V). “Students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one’s work, and/or inappropriately collaborating” (S. VB). According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors. Students have the right to appeal such action to the Student Behavior Committee.

Incomplete Policy: An “I” will only be given for work not completed because of circumstances beyond the student’s control, providing the student is passing the course and needs to complete 20% or less of the work. Valid reasons for an “I” grade include: (a) An illness (documented by a medical statement) that precludes the ability of the student to perform; (b) an accident or situation that prevents the student from physically being present (documentation may be required); (c) Extreme emotional or other mental circumstances that are severe enough to interfere with a student’s normal academic performance. If you do receive an “I”, do not register for the course again. You must complete the required work in the time agreed by you and the instructor. If the work is not completed within one year, the grade will change to an “E”. Faculty will not accept additional work to change the grade after that one-year period. If a student has a problem with the course, please deal with it immediately. It is the student’s responsibility to contact instructors and submit necessary forms. If you delay, your instructor may have left the University or be out of the country. In such a case, you may find that there is nothing the Department can do.

Repeating a Course: Any course taken at the University may be repeated. If you wish to attend a class again, you must register for it and pay tuition for that semester. Note that some courses may be taught infrequently or discontinued.

Note: The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.