

Apparently there is a glitch in the system!

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Please, if you have trouble registering contact me  
renee.pennington@anthro.utah.edu  
or Shawn Carlyle  
shawn.carlyle@anthro.utah.edu  
for an add code.

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The glitch appears related to the way the course prerequisites were set up. Below is a brief statement about the actual prereqs you should have to succeed in the course followed by a preliminary syllabus for Spring 2024.

First, the course is designed for advanced undergraduate and graduate students who

- know what human evolution is and how it works, and
- know how to write a research paper.

If you are a junior, senior or graduate student who has had a university course about human evolution or knows how evolution works from a university course in an allied field you should be prepared to understand the course content.

Courses such as Anth 1010, 1020 or 1050 or Biol 1610 are examples of courses that cover human evolution or evolutionary principles.

Next, roughly one-third of the course grade is from a research paper. To succeed you should know how to write a research paper. This normally involves completion of WRTG 2010 (or equivalent). If you know how to cite sources in a write up of your research and produce an organized list of the sources from it you should be ok.

Please get in touch if you have any questions about the course!

A preliminary syllabus for Spring 2024 begins on the next page.

## **Maternal and child health (Anth 5433/6433) Spring 2024 3 credits**

**Meets Tuesdays & Thursdays 2:00–3:20 PM in BU C 106**

Instructor: Renee Pennington

Office: Gardner Commons, Room 4625

Office Hours: After class or by appointment

Anth Department Phone: (801) 581-6251 (I do not have a phone at my desk)

Web: Canvas

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

### **Prerequisites**

- Junior or senior standing for Anth 5433; Graduate standing for Anth 6433 and
- A course about evolution such as Anth 1010, Anth 1020, Anth 1050 or Biol 1610.

**Course Description** This class is an advanced course in human evolution. We try to figure out how nature designed humans to reproduce and care for children by looking at our biology. If you strip away culture, what does the biology predict? If you tinker with the design, what are the consequences?

The course includes an overview of infant and early child mortality rates and its causes. In particular we consider the influences of infectious disease, technology and human variation on health.

An emphasis of the course is hypothesis testing based on scientific methods. How do you know what you know? There are always (at least) two explanations for anything, and students may be surprised to find that some generally accepted beliefs are not evidence-based.

### **Topics**

1. Mammalian reproductive biologies. Reproductive physiology predicts reproductive strategies. Relationships among number of uterine horns, teats and litter size. Variation in structures of the placenta and consequences to health. Evolution of bipedalism, infant carrying (“park or ride” species), assisted childbirth.
2. Hormonal control of the female reproductive system. Energetic costs, lactational amenorrhea and birth spacing.
3. Placental transmission of immunity. ABO and Rh blood groups; malaria, sickle cell anemia, and fetal hemoglobin.

4. Maternal-fetal conflict. Menstruation, fetal loss, gestational diabetes, pre-eclampsia, and nausea and vomiting of pregnancy as consequences of genes in the fetus competing with genes in its mother.
5. Maternal-infant dyad. Relationships among infant carrying, breastfeeding, infant cry, co-sleeping and Sudden Infant Death Syndrome.
6. Rise of inflammatory disease. Diet, skin-tone and the maternal-infant microbiome. Loss of our “old friends.” How vaginal birth and breastmilk protect newborns.

## Course materials

I assign readings to complement and supplement my lectures and to compensate for unevenness in the background of students.

### Textbooks

1. *Ancient Bodies, Modern Lives*, by Wenda Trevathan. Oxford, 2010. (Required)
2. *Our Babies, Ourselves*, by Meredith Small. Anchor Books, 1999. (Required)
3. *Life's Vital Link*, by Y. W. Loke. Oxford, 2013. (Optional)

You will be reading most of *Ancient Bodies, Modern Lives* and *Our Babies, Ourselves* and should acquire a copy of each to use during the course. You will be assigned a couple chapters from *Life's Vital Link* but you do not need to buy it.

### Supplemental Readings

I will also assign readings from additional sources that supplement and update the content in the textbooks. Most likely these will be available through e-Reserve at Marriott Library or retrievable from internet sites.

However, I may instead ask the U bookstore to assemble a course packet of readings. The course packet would add an expense to the course but make accessing the readings more convenient. If you have an opinion about a reading packet please get in touch ASAP—I need to give them a decision by early December.

Here is a tentative list of supplemental readings:

1. “Integrating evolution into medical education,” by M. Power (2020). *Evolution, Medicine and Public Health* 2020(1): 60-67.

2. "Life history and reproduction" by Robert Martin. From *Grzimek's Animal Life Encyclopedia*, 2nd Ed. Volume 12, Mammals I, edited by Michael Hutchins, Devra G. Kleiman, Valerius Geist, and Melissa C. McDade. Farmington Hills, MI: Gale Group, 2003, pp. 89-100.
3. "Ch 4: Breastfeeding, Fertility and Population Growth," by Roger Short. From *Nutrition and Population Links - Breast feeding, Family Planning and Child Health*, pp. 31-44. Nutrition Policy Discussion Paper No. 11. United Nations, 1992. Here is link: Short (1992).
4. "Surviving the first cut" from *On Fertile Ground*, by Peter Ellison (Harvard: Harvard University Press, 2001).
5. "Embryo quality: the missing link between pregnancy sickness and pregnancy outcome," by S. Forbes (2017). *Evolution and Human Behavior* 38:265-278.
6. "Cooperation and conflict in human pregnancy," by D. Haig (2019). *Current Biology* 29(11):R455-R458.
7. Brooks, Rob (2020). War in the womb: The evolution of pre-eclampsia. Here is link: warinthewomb
8. Kotler J. (2016). Gestational Diabetes and Maternal-Fetal Conflict. In: Weekes-Shackelford V., Shackelford T., Weekes-Shackelford V. (eds), *Encyclopedia of Evolutionary Psychological Science*. Springer, Cham.
9. "Transport Response," by Aradia Wyndham, October 2017. Retrieve from <https://thebabyhistorian.com/2017/10/30/transport-response/>.
10. Egger G. (2012). In Search of a Germ Theory Equivalent for Chronic Disease. *Preventing Chronic Disease* 9:11030.
11. Jablonski, N., and G. Chaplin (2003). Skin Deep. *Scientific American* 13(2s): 72-79.

## Grading

### Anth 5433

Grades will be based on two midterm exams and a research project. The first midterm covers the first half of the course, and the second midterm covers the second half of the course. Each midterm will be worth about 1/3 of the course grade. The research project will consist of several components totaling the remaining part of the course grade.

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 6433 students**

Students enrolled in Anth 6433 should meet with me early in the semester about additional requirements for graduate credit. Normally Anth 6433 students take the same Midterms as Anth 5433 students but are graded on a different scale. The research project is normally a component of a student's thesis. It is expected to be more advanced than projects submitted by Anth 5433 students.

### **Plagiarism software**

You will submit your final write-up of your research project electronically to Canvas, which will use Turnitin software to analyze your work for text matches to other sources to help prevent plagiarism. Plagiarism is improper use of someone else's ideas or words, such as using a phrase or passage from a book as if you wrote it. Incorporating passages from the work of someone else and then changing a few words also constitutes plagiarism as is inserting copied phrases into your writing. We will use Turnitin as a learning tool. Students who submit their papers ahead of the due date will have an opportunity to correct any problems it identifies before I grade them.

### **Important dates and late work**

#### **Required attendance dates**

To be determined/finalized. Tentative dates:

≈ 23 January 2024 (Tuesday) - Lecture about research paper requirement - during the usual class time in the usual classroom.

≈ 29 February 2024 (Thursday) - Midterm One - during the usual class time in the usual classroom.

TBA - Library Day - waiting to schedule with librarian.

≈ 25 April 2024 (Thursday) - Midterm Two - from 1 to 3 pm in the usual classroom. This is the final exam period scheduled for this course.

### **Attendance Requirements**

Per University policy

(<https://regulations.utah.edu/academics/6-100.php>) I expect regular class attendance.

Outside the dates listed above (the 2 midterm dates, the day I lecture about the research project and the library day), attendance is not, technically, part of your grade.

However, I 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.

### **Missed due dates and late work**

Life happens. To you, and to me.

However, barring extreme circumstances, you must take the midterms on the scheduled days and submit all assignments by the due date.

If you somehow miss a midterm or are unable to submit your research paper by the due date, be sure to notify me in advance to request an extension. You will need to supply me with a compelling and documented excuse (such as an unexpected and severe illness) for missing a scheduled midterm or missing deadlines related to the research project to avoid a hefty late penalty ( $\approx 30$  percentage points). At that time we will arrange a new deadline for you.

Due to time constraints, I do not plan to accept late work after the end of classes  $\approx 24$  April 2024. In the event that you need, and are allowed, to submit late work after classes end, keep in mind that I may not be able to grade it as soon as you need me to. In that case, I will submit a grade for you in May based upon the work you submitted by end of classes and then update your grade when I return to campus, which may not be till August 2024.

In any case, should you encounter unusual difficulties that prevent you from completing an assignment on time, get in touch as soon as possible—preferably before the due date.

### **Time commitment**

A general rule of thumb is that students will need to spend about two hours outside of class for every hour in-class (e.g.

<https://regulations.utah.edu/academics/6-100.php>. Therefore, in addition to time spent attending class, students should plan to spend about six hours per week outside of class on readings and assignments.

### **Course objectives and learning outcomes**

At the end of the course students will be able to

- apply anthropological research methods to answer a question or solve a problem;
- evaluate and synthesize scientific hypotheses about human variation using empirical data; and
- explain aspects of human variation using evolutionary theory.

In particular, students will be able to

- identify the basic pattern of human reproduction and its natural variation in diverse human groups;
- use an understanding of human variation and the human past as a tool for investigating questions about fecundity and health;
- use evidence-based research and hypothesis testing to assess the reliability of information;
- interpret graphical representations of data.

### **Teaching and learning methods**

Lectures, class discussion and a research project. Ungraded online discussions.

## 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



(<http://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.