

# Evolution of Numan Nature (Anthropology 1050-001)

## Spring 2008

**Meeting time:** Tuesdays & Thursdays 9:10–10:30 a.m.  
**Classroom:** Stewart 104  
**Prerequisites:** None

**Prof:** Dr. Renee Pennington  
**Office:** Stewart 213E  
**Hours:** After class till 11:05 a.m., M and W 1:15 till 1:45 p.m., and by appointment  
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### Description

This is a course in human evolution. Students learn about the biological basis of cooperation and competition in animals and use the same basic principles to understand the evolution of human behavior.

We examine the relationships between humans and other primates, focusing on when, why and how characteristic human features, such as hunting and our mating systems, emerged using the evidence of fossils, the cultural remains of our ancestors, and observations about other animals. We also consider some of the unique and interesting features of the human life cycle, such as how we age and why we parent the way we do.

The goal of the course is to provide students with a basic understanding of evolutionary ecology, scientific methods for testing hypotheses about how humans evolved, and human diversity.

The course is for anthropology majors, students who need a course to satisfy the University's Physical and Life Science Intellectual Explorations Area (SF) requirement, or anyone simply interested in how humans evolved. There are no prerequisites.

### Requirements

Your grade is based on five quizzes (but your lowest score doesn't count), a comprehensive final exam and a book report:

Date	Requirement	Weight
January 24	Quiz 1	125 points
February 12	Quiz 2	125 points
February 28	Quiz 3	125 points
March 25	Quiz 4	125 points
April 15	Quiz 5	125 points
	Drop lowest quiz score	-125 points
April 22	Book report	150 points
April 25	Final Exam	350 points
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Total		1000 points

Each quiz is worth 125 points. Only your four best scores count towards your grade (500 total quiz points possible). Everyone must take the final exam. It covers the whole course and is worth 350 points.

The book report is on the ethnography *Women of the Forest*, by Yolanda and Robert Murphy. It is worth 150 points and is due the last day of class. You must follow the book report instructions and turn it in by April 28th to receive full credit for it. The assignment is about sex differences in reproductive strategies among the Mundurucú people described in the book. Most of you will want to start reading the book after the third or fourth quiz.

Test formats will be multiple choice, matching, and short answer/essay. A portion of each quiz may have a take-home component. For example you may be asked to write an essay about videos viewed in class. The final exam may include questions about *Women of the Forest*.

You must take the quizzes and final exam as scheduled, but a missed quiz can count as your lowest quiz score. If you need to take a makeup quiz, you must have documented and compelling reasons for missing two quizzes. I will accommodate students who need more time to prepare for the first quiz as it occurs so early in the semester.

## Readings

There is no text book to buy. Instead, you will be required to read:

1. *The Selfish Gene* (30th Anniversary edition) by Richard Dawkins, Oxford University Press, Oxford, 2006. (This edition is the newest but is not much different than older ones.) Available from the University Bookstore.
2. *Women of the Forest* (30th Anniversary edition) by Yolanda Murphy and Robert Murphy, Columbia University Press, New York, 2004. (This edition is the newest but is not much different than older ones.) Available from the University Bookstore.
3. About 25 articles and book chapters on electronic reserve at Marriott Library. Most of these are short articles from magazines like *Natural History* and *Scientific American* (see list below). You can access all of the items electronically.

If you are off campus, or on campus using your own computer, you will need software (such Adobe Reader) that can open PDF files. You can get Adobe Reader free at <http://www.adobe.com/products/acrobat/readstep2.html>.

## Attendance

Class works best when students prepare for and participate in it. Plan to spend about 6 hours per week outside of class reading and studying for this course. Ask questions if you don't understand something (everyone else will be grateful) or want to know more about it. I encourage you to share articles, books and news items (or references to them) that you find during the semester that are relevant to human evolution and behavior.

If you must miss a class, get notes from another student in the course and check the course web page for lecture notes.

## Make-up work

Extra credit is also a great way to for me to reward students who want to learn even more about things we cover in the course. Students may propose projects (or ask me for suggestions) to earn from 10 to 50 extra points (1/3 letter grade maximum increase). I must approve your project.

In the past students have read popular science books about evolution or wrote a research report about something relevant to the course.

The make-up work will help students who missed a few points on an exam or land in between grades at the end of the semester. Most students can improve their grades more by using the time to study for the quizzes and the final exam.

## Schedule

We will follow the topic outline below as time permits (test dates will not change). The readings are on e-Reserve at Marriott library.

Day	Topic	Reading
Jan 8 (Tu)	Course introduction	Dawkins ch. 1 ('Why are people')
Jan 10, 15 (Th, Tu)	Language of genes	Dawkins ch. 2, 3 ('The replicators,' 'Immortal coil')
Jan 17, 22 (Th, Tu)	About primates	
Jan 24 (Th)	QUIZ 1	1 A tale of three chimps
	Primate taxonomy	2 The 2 percent difference
Jan 29 (Tu)	Reproductive strategies	3 Primate reproduction
Jan 31, Feb 5, 7 (Th, Tu, Th)	Primate demography	4 Transformation of the Kalahari !Kung
Feb 12 (Tu)	QUIZ 2	5 Female choice in mating
Feb 14 (Th)	Sexual selection	6 Disturbing behaviors...
Feb 19 (Tu)	Behavior and genes	Dawkins ch. 4 ('The gene machine' ) 7 It's only a game
Feb 21 (Th)	Game theory	Dawkins ch. 5 ('Aggression: stability and ...') 8 <i>In our genes</i> (optional) Webct: <i>Math. of the Hawk Dove Game</i> (optional)
Feb 26 (Tu)	Kinship and altruism	Dawkins ch. 6 ('Genesmanship') 9 Divided we fall... 10 When brothers share a wife
Feb 28 (Th)	QUIZ 3 Parent conflict	Dawkins ch. 7 (skim), 8 ('Family planning,' 'Battle of the generations') 11 Genetic battle of the sexes
Mar 4, 6 (Tu, Th)	Parenting games	Dawkins ch. 9 ('Battle of the sexes') 12 Early puberty, promiscuity in girls... 13 How many fathers are best...
Mar 11 (Tu)	The first hominins	Webct: Summary of fossils
Mar 13 (Th)		14 Early hominid fossils from Africa 15 Out of Africa again...and again?
Mar 17-22	Spring break	
Mar 25 (Tu)	QUIZ 4	16 Diet and primate evolution
Mar 27 (Th)	Body size and scaling	
Apr 1, 3 (Tu, Th)	Food and the brain	17 Food for thought 18 A worm's view of human evolution
Apr 8 (Tu)	Mating systems	19 Outward signs of breeding 20 Faithful ancestors 21 <i>Testis weight... (optional)</i>
Apr 10 (Th)	Foraging theory	23 Hunter-gatherers of the New World
Apr 15 (Tu)	QUIZ 5	24 What are men good for? Dawkins ch. 10 'You scratch my back...'
Apr 17 (Th)	Book reports due	22 Why women change
Apr 22 (Tu)	Human life span	25 Sex differences in mortality rates 26 Differential mortality by sex
Apr 25 (Fri)	Final exam 8:00-10:00 a.m.	

### Readings on e-Reserve at Marriott Library

1. "A tale of three chimps," by J. Diamond. (Ch. 1 of *The Third Chimpanzee*, pp 15–31. NY: Harper, 1992.)
2. "The 2% Difference," by R. Sapolsky. (*Discover*, April 2006.)
3. "Primate reproduction," by R. Martin. (In S. Jones, R. Martin and D. Pilbeam (eds.), *The Cambridge Encyclopedia of Human Evolution*, pp. 86–90. Cambridge: Cambridge University Press, 1992.)
4. "Transformation of the Kalahari !Kung," by J. Yellen. (*Scientific American*, April 1990, pp. 96–105.)
5. "Female choice in mating," by Meredith Small. (*American Scientist*, vol. 80, 1992, pp. 142–151.)
6. "Disturbing behaviors of the orangutan," by A. Maggioncalda and R. Sapolsky. (*Scientific American*, June 2002, pp. 60–65.)
7. "It's only a game." (*Economist*, April 13, 1996, p78, 2pp.)
8. "In our genes," by H. Harpending and G. Cochran. (*PNAS*, vol. 99, Jan. 2002, pp. 10–12.)
9. "Divided we fall: Cooperation among lions," by C. Packer and A. Pusey. (*Scientific American*, May 1997, pp. 52–59.)
10. "When brothers share a wife," by M. Goldstein. (Originally published in *Natural History*, March 1987, pp. 39–48.)
11. "The genetic battle of the sexes," by R. Mestel. (*Natural History*, February 1998, pp. 44–49.)
12. "Early puberty, promiscuity in girls abandoned by dads: A biological explanation?" (*Crime Times* vol 8, no. 4, 2002. Retrieved from <http://www.crime-times.org/> on 8/17/2005.)
13. "How many fathers are best for a child?" by M. Small. (*Discover*, April 2003, pp. 54–61.)
14. "Early hominid fossils from Africa," by M. Leakey and A. Walker. (*Scientific American Special Edition: A New Look at Human Evolution*, Summer 2003, pp. 14–19.)
15. "Out of Africa again...and again?" by I. Tattersall. (*Scientific American Special Edition: A New Look at Human Evolution*, Summer 2003, pp. 38–45.)
16. "Diet and primate evolution," by K. Milton. (*Scientific American*, August 1993, pp. 86–93.)
17. "Food for thought," by W. Leonard. (*Scientific American Special Edition: A New Look at Human Evolution*, Summer 2003, pp. 62–71.)
18. "A worm's view of human evolution," by P. Shipman. (*American Scientist*, vol. 90, no. 6, 2002, pp. 508–510.)
19. "Outward signs of breeding," by R. Martin and R. May. (*Nature*, vol. 293, 1981, pp. 7–9.)
20. "Faithful ancestors," by B. Bower. (*Science News*, vol. 167, no. 24, June 11, 2005, p. 379, 2p, 1c.)
21. "Testis weight, body weight, and breeding system in primates," by A. H. Harcourt, P. H. Harvey, S. G. Larson and R. V. Short. (In *Evolution Now*, J. Maynard Smith, ed., pp. 227–233. (This is an optional reading. This article is the scientific paper that the required reading (#19) discusses.)
22. "Why women change," by J. Diamond. (*Discover*, July 1996.)
23. "Hunter-gatherers of the New World," by K. Hill and A. M. Hurtado. (*American Scientist* vol. 77, 1989, pp. 436–443.)
24. "What are men good for?" by J. Diamond. (*Natural History*, May 1993, pp. 24–29.)
25. "Sex differences in mortality rate," by Ian P. F. Owens. (*Science* 297, pp. 208–209 + 1 p. correction, 2002.)
26. "Differential mortality by sex, especially in humans," by R. Trivers. (Chapter 12 of *Social Evolution*, pp. 301–314. Menlo Park, Calif.: Benjamin/Cummings Pub. Co, 1985.)

### Disclaimer

This document is a fair representation of course content, requirements, and scheduling. However, I reserve the right to modify course content, exam scheduling and format, my office hours, and anything else.