



## HUMAN ECOLOGICAL ADAPTATIONS

Anthropology 411 01431-5

Autumn, 2008

T-R 10:30-12:18, Bolz Hall 314

Prof. Jeffrey K. McKee

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Office Hours: Tuesday 12:30-1:30,

Thursday 12:30-2:30 and by appointment

4068 Smith Laboratory

**OVERVIEW:** This course focuses on the interactive relationships between humans and their environments, past and present. Starting with an evolutionary perspective, the ecological forces shaping human origins will be covered along with potential ecological roles and impacts of our earliest known hominid ancestors. This leads to a study of modern human adaptations of morphology and physiology, as well as the role of material culture in the growth of the human population. Demographic considerations will be covered in some detail, including the possible effects on our adaptability. Today humans shape their own environments, affecting the conditions of natural selection and ongoing evolution of our species. We will study how our unique ecological role is important in determining disease vectors and our adaptations to disease. The course will conclude with a theoretical look at possible scenarios for future human ecological adaptations and impacts.

**OBJECTIVES:** The students should become familiar with the place of humans in nature and nature's place in humans. They will be expected to have a basic grasp of the conditions of human evolution and the types of environmental interactions that still affect our species today.

**READING:** Required text books: Kormondy, E.J. & Brown, D.E. (1997) *Fundamentals of Human Ecology* (Prentice Hall); McKee, J.K. (2003) *Sparing Nature* (Rutgers U. Press)  
Additional required readings are listed on the syllabus. Further outside readings from recent articles and/or web sites will be recommended to keep up to date with new research and issues, and assigned in conjunction with an essay project

## Details, Details, Details

**EVALUATION:** Grades will be assessed on the basis of a midterm exam and comprehensive final exam worth 40% each. Exams will cover both lecture material and readings on the syllabus. An assigned essay worth 20% of the total will be based on an assessment of issues in the current academic literature; it will be a minimum of ten typed pages, and include at least 5 references from sources other than the regular assigned readings.

Grading percentages: Final grades will be distributed as follows: A 92-100; A- 90-91; B+ 88-89; B 82-87; B- 80-81; C+ 78-79; C 72-77; C- 70-71; D+ 68-69; D 60-67; E<60.

*Students with disabilities* are responsible for making their needs known to the instructor, and are responsible for seeking available assistance, as soon as possible, and certainly prior to the first examination.

*Academic Misconduct:* All students should become familiar with the rules governing alleged academic misconduct. All students should be familiar with what constitutes academic misconduct, especially as it pertains to plagiarism and test taking. Ignorance of the rules governing academic misconduct or ignorance of what constitutes academic misconduct is not an acceptable defense. Alleged cases of academic misconduct are referred to the proper university committees.

*Class Cancellations:* In case of unexpected instructor absences the information will be posted on the following departmental website. This site should be consulted during inclement weather to check for possible class cancellations or delays. Do not call the department, check the website. <http://anthropology.osu.edu/news/coursenews.php>

*Disputed Term Paper Grades:* In case of a dispute concerning a term paper grade, the student is encouraged to meet with the instructor to reconcile the matter. At that time, the student must present notes used in writing the paper, earlier drafts and copies of bibliographic material cited.

This course is a core course in the **Evolutionary Studies minor**. Information regarding the minor and its requirements may be found online at <http://artsandsciences.osu.edu/interdisciplinary>

OUTLINE: Human Ecological Adaptations (Anthropology 411)

Week

- 1 **Introduction**  
9/25 - The human place in nature and nature's place in humans.
  
- 2 **Perspectives of Evolutionary Ecology**  
9/30 - Historical perspectives. Principles of ecology and evolution.  
10/2 - A convenient film  
*Reading:* Kormondy & Brown Chapters 1, 2.
  
- 3 **Evolutionary Ecology of the Hominins**  
10/7 - Hominin origins in African environments.  
10/9 - Early hominin adaptations and adaptability.  
*Reading:* Kormondy & Brown Chapter 12.
  
- 4 ***Homo sapiens* biocultural adaptations**  
10/14 - Geographic spread and ecological diversification of *Homo*.  
10/16 - Biological and cultural adaptations to new biomes.  
*Reading:* Kormondy & Brown Chapters 6.
  
- 5 10/21- Ecological & development adaptations of morphology and physiology. I.  
10/23- Ecological & developmental adaptations of morphology and physiology. II.  
*Reading:* Kormondy & Brown Chapters 7, 8.
  
- 6 10/28 - Review Session  
10/30 - **Midterm exam** (covers lectures and readings from weeks 1-5.)
  
- 7 **The "ecological transition"**  
11/4 - Human survival and subsistence choices. VOTE!  
11/6 - Domestication of other life forms.  
*Reading:* Kormondy & Brown Chapters 11, 14, 16.

Essays assigned. (Essays drawn from scientific literature in consultation with lecturer)

- 8     **Pestilence**  
11/11 - Adaptations to disease. Human spread of disease.  
11/13 - Adaptations to designed environments.  
*Reading:* Kormondy & Brown Chapter 9, 10.
- 9     **Human population dynamics**  
11/18 - Human population growth since the Pliocene.  
11/20 - Environmental carrying capacity, and film.  
*Reading:* Kormondy & Brown Chapters 4, 5; McKee Chapters 1, 2, 3, 4.  
Hardin, G. 1968 The tragedy of the commons. *Science* 162: 1243-1248.  
<http://www.sciencemag.org/cgi/content/full/162/3859/1243>
- 10    **Human disease and future populations.**  
\*11/25 - Impact on wild populations  
11/27 - **NO CLASS** (Thanksgiving)  
*Reading:* McKee Chapters 5, 6.
- \*Essays due 11/25
- 11    12/2 - Environmental impact.  
12/4 - Demographic, ecological and evolutionary projections. **REVIEW**  
*Reading:* Kormondy & Brown Chapter 18; McKee Chapters 7, 8, 9.

**Final Exam Monday December 8, 9:30-11:18** (Note day and time!!!)  
(Covers all work, focusing on weeks 7-11)