Anthropology 4111
PREREQUISITE: ANTH 1100 or permission of instructor.
Spring 2013

Instructor: Dr. Kathryn Hicks
Office: MN 300A
Email: kahicks2@memphis.edu
Office hours: W 11-12am or by appointment.

Course description: In this class we will explore the nature, diversity, and complexity of human adaptation to the environment. We will begin with a discussion of basic evolutionary theory including forces of evolution, genetics, stress and adaptation, and the importance of culture in shaping human biology. We will consider recent modifications to this theory based on our evolving understanding of inheritance and phenotypic plasticity across the lifespan. We will then move on to discuss long-term adaptations shared by all humans such as reliance on intelligence and sociality, and how local ecological pressures lead to variability in phenotypic expression. Throughout the course, we will emphasize the importance of understanding our evolutionary heritage for combating current health problems.

Assigned Books:

Sean B. Carroll. 2005. Endless Forms Most Beautiful: The New Science of Evo Devo and the Making of the Animal Kingdom. New York: W.W. Norton & Company.

Eva Jablonka and Marion J. Lamb. 2006. Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral and Symbolic Variation in the History of Life. Cambridge: The MIT Press.

Richard Lewontin. 2000. The Triple Helix: Gene, Organism, Environment. Cambridge: Harvard University Press.

Course Assignments:

**Attendance and participation** (20%): In order to get full marks you should attend regularly, and actively participate in class discussions and activities. Most importantly, this involves doing the weekly readings in advance so that everyone benefits from class discussion. You will not be penalized for missing up to two classes, excused or unexcused, but will lose four points on your participation grade for each subsequent absence. Frequent lateness will also affect your participation grade.

**Reading assignments** (30%): In advance of each weekly reading assignment I will post some questions designed to help you pick out the important points, synthesize the readings, and critically evaluate them. This means that some of the questions will be based on understanding the material, and others will require you to think about the readings and come up with your own ideas. These questions will serve as a basis for class discussion and as a means of helping you understand and remember the material better.

I do not expect you to look for specific quotes or statements from the text, but to present the material as you understand it. You can use some quotes to help support your point, but most of your answer should be in your own words. In addition, you are free to develop your own ideas and opinions, but you must be able to support your opinions with information from readings or lecture material. For example, if you think an author was particularly effective or ineffective at making their argument, be prepared to defend this point using specific examples.

You should submit your answers to turnitin before class. We will have a total of 12 weeks of reading, and each student will be responsible to submit answers for 10 weeks of your choice. You should still do the readings for the other weeks, and be prepared to discuss them. These assignments will be graded out of 10 points, and averaged to get your percent score. Just bear in mind that you can buy some time for busier weeks by starting early.

Note: You will need to sign up for a turnitin account using the following information.
Human Adaptations
ID: 6025147
Password: adapt

**One mid-term** (25%) **and one final exam** (25%): The exams will be a mix of short answer and essay questions. Each week you will be given a list of important terms and definitions from the readings and lecture. Short answer questions will be drawn from this list. One week before each mid-term exam I will post a list of four essay questions, two of which will show up on the exam. We will have group review sessions the class before each of these exams.

Honors Students: you will write one book review (roughly 8-10 pages double-spaced). I will provide some examples to help you approach the assignment, and a list of relevant books from which you can choose. Your review will be due no later than the final day of class.

Your grades will be calculated as follows:
Attendance and Participation: 20%
Reading Assignments: 20%
Exams: 50% (25% each)
Review: 10%

Course Policies:

I encourage you to come see me during office hours whenever you have questions about course material. I'm more than happy to talk through concepts or class policies with you, but I rely on you to seek me out.

The lecture material is as important as the readings. I will use lecture partly to talk about what we have read, but also to provide additional context not present in the course texts. Please plan to take notes. I will put important terms and ideas on powerpoint slides, but I also use these to present visual information to help you better understand the material. You will also need to pay attention to the points I make that are not on the slides. To help you with this, I will do my best

to post powerpoint slides at least a couple hours in advance of class so you can print them off and use them as a guide.

This class will involve considerable small and large group discussion. Please be respectful of other students when making your points, and make sure that you refer to course readings and lecture to support your arguments.

This class draws heavily on evolutionary theory. You do not have to believe in evolution to take part in this class, but you do have to understand it if you want to do well. While I am happy to talk with students outside of class about reservations and concerns regarding the course material, class time will be reserved exclusively for discussing topics introduced in readings and lecture.

There will be no unexcused makeup exams. If you cannot attend the exam for acceptable documented health or school related reasons, you must speak with me before the exam, and make alternate arrangements. If you have an emergency the day of the exam, you should contact me no later than 5:00 the day of the exam. In either case, expect to provide documentation. Please note that make-up exams will be different than in-class exams.

Cheating or other academic misconduct will result automatically in failure in the course and notification of the Office of Student Judicial and Ethical Affairs. I encourage you to discuss the course material with other students, whether in-class or in study groups. Talking with others about the material helps you learn it better and come up with new ideas. When it comes to written assignments and exams, however, you must complete the work on your own, without collaboration with others, and without copying material from other students or published sources. Please note that letting others copy from you is also academic misconduct.

Please be respectful of other students and your professor by listening while others are talking, keeping your cell-phone stowed until class breaks, and coming in quietly if you are late for class. The only purpose of these policies is to ensure that everyone who wants to listen and participate can do so without distraction.

| Week | Date | Topic | Readings |
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| **1** | Jan 23 | Introduction | Syllabus |
| **2** | Jan 30 | Review: modern synthesis | Ridley. 1996. The Darwin Reader. Chapter 4: The Origin of Species, 84-135 |
| **3** | Feb 6 | Modifications to the modern synthesis: what have we learned about genes? | Jablonka and Lamb. 2005. Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life. Chapters 1-2, 9-78 |
| **4** | Feb 13 | Modifications to the modern synthesis: alternative forms of inheritance | Jablonka and Lamb. 2005. Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life. Chapters 3-4, 79-154 |
| **5** | Feb 20 | Modifications to the | Jablonka and Lamb. 2005. Evolution in Four |

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| | | modern synthesis: alternative forms of inheritance | Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life. Chapters 5-6, 155-232 |
| **6** | Feb 27 | Modifications to modern synthesis: evo-devo | Carroll. 2005. Endless Forms Most Beautiful: the New Science of Evo Devo. Chapters 1-3, 17-107 |
| **7** | March 6 | Modifications to modern synthesis: evo-devo | Carroll. 2005. Endless Forms Most Beautiful: the New Science of Evo Devo. Chapters 5-8, 109-219 |
| **8** | March 13 | Spring break | No class |
| **9** | March 20 | First Exam | |
| **10** | March 27 | Adaptation; Encephalization, language, and the emergence of modern behavior | Frisancho. 1993. Human Adaptation and Accommodation. Chapter 1: The Study of Human Adaptation, 4-18<br>Lewontin. The Triple Helix: Gene, Organism and Environment. Chapter 2: Organism and Environment, 41-68<br><br>Dunbar. 2003. The Social Brain: Mind, Language, and Society in Evolutionary Perspective. Annual Review of Anthropology. 32: 163-81.<br><br>Wong. 2005. The Morning of the Modern Mind. June: 88-95 |
| **11** | April 3 | Variation in human diets | Eaton et al. Paleolithic Nutrition Revisited. Evolutionary Medicine. 313-327<br><br>Leonard et al. 2003. Metabolic correlates of hominid brain evolution. Comparative Biochemistry and Physiology Part A. 136: 5-15<br><br>Leonard. 2002. Food for Thought. Scientific American. Dec: 108-115 |
| **12** | April 10 | Evolution of human growth and development | Bogin. 1999. Evolutionary Perspective on Human Growth. Annual Review of Anthropology. 28: 109-153.<br><br>Adair et al. 2001. Maternal Energy Stores and Diet Composition During Pregnancy Program Adolescent Blood Pressure. Circulation. 104: 1034-1039 |

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| | | | Rutherford. 2009. Fetal signaling through placental structure and endocrine function: illustrations and implications from a non-human primate model. American Journal of Human Biology. 21(6): 745-753. |
| **13** | April 17 | Human reproductive ecology | Trevathan. 2010. Ancient Bodies, Modern Lives: How Evolution has Shaped Women's Health. Chapters 1-3, 23-74<br>Bribiescas. 2002. Reproductive Ecology and Life History of the Human Male. Yearbook of Physical Anthropology. 33: 148-176. |
| **14** | April 24 | Stress and chronic disease | Sapolsky. 2004. Social Status and Health in Humans and Other Animals. Annual Review of Anthropology. 33: 393-418.<br><br>Adair. Child and Adolescent Obesity: Epidemiology and Developmental Perspectives. Physiology and Behavior. 94: 8-16<br><br>Kuzawa and Sweet. 2009. Epigenetics and the Embodiment of Race: Developmental Origins of US Racial Disparities in Cardiovascular Health. American Journal of Human Biology. 21: 2-15 |
| **15** | May 1 | Evolution of skin | Jablonski. 2006. Skin: A Natural History. University of California Press: Berkeley. Chapters 1-7, 9-111. |
| | May 8 | Final exam | 5:30-8:30 pm |