Douglas E. Crews
T Th 12:30-2:18 PM

Course Syllabus

BIOLOGY OF SENESCENCE

Anthropology 640.05
Spring Quarter 2006

Instructor: Douglas E. Crews
217 C Lord Hall
Phone: 292-1329

Meeting Time & Place: 235 Lord Hall
Email crews.8@osu.edu
Fax: 292-4155

Prerequisites: Anthropology 200 or another basic science course.

Textbooks Required: Arking, R. (2005) Biology of Aging: Observations and Principles, 3rd edition, Sinauer Press.
Crews, DE (2003) Human Senescence: Evolutionary and Biocultural Perspectives. Cambridge University Press.

Course Description: This is a biological anthropology course on human senescence. Non-human models are used to illustrate aspects of human variation in senescence. A wide variety of experimental data are only available on non-human animal models. However these data must be interpreted with caution when applied to human kind. The two texts chosen for this course cover both aspects of senescence. Dr. Arking's volume presents the non-human data in great detail, while Dr. Crews closely examines how these data may or may not apply to human senescence. Society and culture have profound influences on human health and longevity and how we perceive aging and senescencing individuals. By the end of this course, you should be able to describe differences among senescence, aging, and longevity; detail evolutionary theories and mechanistic models of senescence; explain differences between humans and non-humans in senescence; detail biocultural influences on senescence; and debunk multiple proposed "anti-aging interventions".

Anyone who feels they may need an accommodation based on the impact of a disability should contact me to arrange an appointment as soon as possible. At the appointment we can discuss the course format, anticipate your needs and explore potential adaptations to meet your needs. I rely on the Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously contacted the Office for Disability Services, I encourage you to do so. They are located in 150 Pomerene Hall, 614-292-3307.

Conduct of the Course: There will be a midterm the 4th and 7th or 8th week of class. These each count for 25% of your final grade. There is a final term project (25%), and an in-class presentation (10%), which together will count for 35% of your final grade. Attendance and participation will count for 5%, while 2 quizzes will count for 5% each.

Assignment	Due	% of grade
Midterm	Week 4	25
Midterm	Week 7/8	25
Paper	Week 9/10	25
Presentation	Week 9/10	10
Quizzes	Week 2-6	10
Attendance/Participation	Week 1-10	5
		Total- 100 pts.

Grading: Final grades are based on standardized distribution, using the total number of points for the course. A general guide to how you are doing is A> 92; 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

Research Project: Your term project will be an in-depth review of the literature on a topic of your choice in the biology of senescence. Your final 8-page paper will be a double-spaced, typed manuscript with 1-inch margins in Times New Roman or Ariel 10 point font. Please limit it to 8 pages of concise text. Include as many **additional** pages of illustrations and tables as you need to document the text and have a minimum of 15 references. No more than 4 references should be from the course materials. No more than 5 references should pre-date 1985. No more than 5 should refer to books or book chapters. Books are notoriously out-of-date and developments in research and laboratory methods have been overwhelming in the last decade. Do not rely upon websites[1] for your references. A limit of 4 websites of the "nsf.gov" type may be included. These are government documents that are as reliable as the primary literature. An in-class 10-20 minute presentation of your project will be conducted during the last weeks of class.

Attendance will be taken the first 2 weeks of class to determine who is attending and who will be automatically dropped after the 1st or 2nd week to allow others already wait-listed to enroll through Brutus. During weeks 3-8 attendance will be taken an additional 4-6 times on randomly selected days to determine who is regularly attending class. During the final weeks of the term when presentations are being made by you and your fellow students, attendance will be taken each day and 1.0 attendance point deducted from your total score for each day missed. The presentations are an important part of the overall class and educational experience. Each of you will have invested a substantial amount of time in your paper and its oral presentation and you deserve an audience and your classmates need to take this opportunity to learn from your research. These in-depth reports are a highlight of such classes.

All papers are due the 10th week of class. Failure to turn any assignment in on the due date will result in a lowering by one letter grade.

[1] "Websites" refers to pages on the Internet. You may use search engines such as Ohio Link, ISI Web of Science and similar web-servers. You may not google your topic and then report results of that search.

Course Outline:

Week	Lecture Topic	Text[2] Chaps.	Assignment Due Date
1	Introduction to the Course: What are Senescence, Aging, and Longevity? Aging Populations and Senescing Individuals	A 1-3 C 1	
2	Why Senescence? Evolutionary & Comparative Biology Slow and Fast Senescing Species	A 3-5 C 2	
3	Senescence and Age-Related Changes in Humans. Empirical Methods of Modifying the Rate of Aging.	A 5-6 C 3	Quiz 1 5 pts
4	Genetic Mechanisms of Life Span Regulation In Laboratory Model Organisms and Humans	A 7-8 C 4	Midterm 25 pts.
5	What are the mechanistic bases of senescence? Stochastic Mechanisms and Senescence	A 9-10	
6	Metabolic & Mitochondrial Mechanisms of Aging	A 11	Quiz 2 5 pts
7	Senescence as a Breakdown of Intracellular Regulatory Processes	A 12-13	
8	What can we do about it? Common Mechanisms of Senescence, Human Prolongevity Interventions, Societal Goals and the Search for a Fountain of Youth	A 14-15 C 5-6	Midterm 25 pts.
9	Presentations		10 pts
10	Presentations		Paper 25 pts.

Note: Please be sure to read all assigned chapters prior to the week they will be discussed in class. This will provide you with an overview of the topic before class lecture. Then you will be able to not only participate in the lecture, but also understand the highlights that are covered during lecture.

[2] A = Arking C = Crews