

ANTHROPOLOGY 12 (Section 1) Code: 40023

Introduction to Human Evolution

COURSE DESCRIPTION:

Introduction to Human Evolution is a course designed to allow students to appreciate the evolutionary history of our species and the biological bases that are at the foundation of this process. The course is an introductory one; thus, no specific prior knowledge is assumed. However, during the semester students will acquire basic biological knowledge relating to molecular biology, cell reproduction, cellular and population genetics, the fundamental principles of micro- and macro-evolutionary theory (especially the role of natural selection and genetic drift), and the intellectual background leading to the development of evolutionary theory. This foundation will then be used to explore the specific evolutionary history of major groups of organisms, with a specific focus on human evolutionary history. Comparative perspectives will be incorporated so as to provide a basis for understanding how humans are related to other primates, and what this implies structurally, physiologically, and behaviorally. Furthermore, data provided directly by the fossil and molecular records will be comprehensively reviewed in tracing the major features of human evolution. In summary, this course attempts to place our species in a clear evolutionary context, and to ask some basic questions relating to human origins: 1) what kind of creature are we, and 2) how did we get to be this way?

ANTH 12 AS A GENERAL EDUCATION COURSE: Student Learning Objectives

Anth 12 is a Science GE offering (core GE, B2/Life Science). Students should be able to:

1. Use of methods of science and knowledge derived from current scientific inquiry in life or physical science to question existing explanations;
2. demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues; and
3. recognize methods of science in which quantitative, analytical reasoning techniques are used.

More specifically, Area B2 Life Science courses such as Anth 12 focus on:

- a. structures and functions of living organisms;
- b. levels of organization of living systems, from atom to planet;
- c. strategies for survival and reproduction;
- d. patterns of evolution;
- e. principles of genetics, including the basis for variation; and
- f. interaction of organisms and their natural environment.

SPECIFIC COURSE OBJECTIVES:

In addition to the above overall objectives of all life science GE courses, Anth 12 also has several more specific learning objectives. By the completion of this course, students should be able to:

- develop critical thinking skills;
- distinguish testable hypotheses from non-testable ones;
- distinguish among different kinds of explanations, especially how hypotheses differ from non-scientific explanations, as well as from more general theories;

- demonstrate an understanding of the methods and limitations of scientific investigation;
- recognize how evolutionary theory is part of a wider scientific approach to understanding the universe;
- recognize the nature of one's own biases and the methods scientists utilize to control for bias;
- appreciate the historical development of the Western scientific tradition, especially as related to the formulation of evolutionary theory;
- distinguish between the primary factors influencing evolutionary change (natural selection, sexual selection, mutation, gene flow and genetic drift), and recognize how these factors are integrated into a single, synthetic theory of evolution;
- differentiate and apprehend the interrelationships of basic life processes at the molecular, chromosomal, cellular, individual, populational, and species level;
- discern how basic life processes such as sexual reproduction and recombination influence genetic variation, and the role such variation plays in evolution;
- recognize how humans fit within an organic continuum and how this organic diversity is interpreted and organized in classification schemes;
- understand the relationships of humans to other organisms - especially the other primates;
- appreciate how patterns of human individual and populational diversity can (and cannot) be explained biologically; and
- distinguish science from pseudo-science and "pop-science", and apply a scientific approach to answer questions about the earth and environment.

ATTAINING THE COURSE OBJECTIVES:

At a general level, this course concerns primarily the nature of the evolutionary process - how it works - and how scientists have come to understand the process, (and even more generally, how science as a "way of knowing" seeks to comprehend and generalize about natural phenomena in the known universe). The specific evidence relating to understanding human evolution is then used to illustrate how these evolutionary biological processes operate. In addressing the fundamental questions relating to human origins, you will be challenged to think critically, apply sound scientific methodologies, understand and assess quantitative data, and communicate your knowledge in both oral discussion and written form.

At SJSU students are encouraged to recognize that education is a participatory experience. Thus, each student is expected during the semester to contribute to further refining the course objectives (so better to articulate your individual expectations and needs), to give feedback to the instructor regarding the adequacy of your learning and how well the course assessment tools measure that learning, and how these assessment tools might be improved. Finally, each student is challenged to be engaged in the exploration of the fascinating material covered in this course, to participate in class discussions, to ask questions, and to relate in assignments and exercises how you can apply these concepts to your own life; that is, to be an active participant in your own education. The most important contribution this course can make to your education is to provide you with greater ability to *think critically*. As a result, this skill will contribute permanently to your further education; that is, for the remainder of your lifetime. Never consider your education completed when you leave the University, but continue to build your knowledge by using and refining the skills learned here.

DEPARTMENT OF ANTHROPOLOGY OBJECTIVES.

The Department of Anthropology seeks to enhance student knowledge and skills in a number of areas. Each course offered by the department fulfills one or more of the following ten objectives:

1. Understanding culture as the distinguishing phenomenon of human life, and the relationship of

human biology and evolution.

2. Awareness of human diversity and the ways humans have categorized diversity.

3. Knowledge of the significant findings of archaeology, cultural anthropology, and physical anthropology, and familiarity with the important issues in each subdiscipline.

4. Knowledge of the history of anthropological thought and its place in modern intellectual history.

5. Comprehension of migration, colonialism, and economic integration as significant phenomena shaping contemporary global society.

6. Ability to access various forms of anthropological data and literature.

7. Awareness of the importance and value of anthropological knowledge in contemporary society, and the ability to apply it to social issues.

8. Knowledge of the research methods of the subdisciplines of anthropology, and the ability to apply appropriate research methods in at least one subdiscipline.

9. Ability to present and communicate anthropological knowledge and the results of anthropological research to different audiences.

10. Knowledge of political and ethical implications of social research

CLASS SESSIONS:

MW: 9 - 10:15 am in WSQ 04. There will also be an optional review session before each exam.

OFFICE HOURS, PHONE AND EMAIL:

M: 3-6 pm **and by appointment in CL 404J**. You may also leave messages for me in my mailbox in CL 469 (the Anthro Dept) or at my office in CL 404J (**924-5721**), or by email: (Jonathan.Karpf@sjsu.edu). The departmental FAX is 924-5348. Students are **encouraged** to attend office hours; if you are unable to attend, please let me know and we can try to arrange alternative times and days.

TEXTBOOKS:

1) Exploring Biological Anthropology: The Essentials, (1st ed) Craig Stanford, John Allen and Susan Anton., (2008).

2) Darwin For Beginners, Jonathan Miller (1982) **begin reading this book immediately.**

3) The Cartoon Guide to Genetics, Larry Gonick and Mark Wheelis (1992)

4) Required handout packet/reader sold in the **5th** class (**W 9/10**) for \$8.00, tax included. In addition to handouts, this reader includes some articles, all your out-of-class **writing assignments**, the two **practice exams** to be used to prepare for your two midterms, as well as 3 **practice quizzes**. If you don't purchase it in class that day, you may purchase it after that date at Maple Press, San Carlos St. between 10th & 11th. In addition, you are encouraged - but **not** required - to purchase the **recommended** Human Evolution Coloring Book, especially if you are a primarily visual learner.

COURSE REQUIREMENTS:

Students will be asked to complete both in-class examinations as well as take-home assignments. Your final

grade will be based on a possible **560 points**. The bulk of your final grade will be determined by your performance on **two** midterms worth 100 points each, and a minimally cumulative final exam worth 150 points. In addition, there will be **three** take-home quizzes handed out on Wednesdays and due (at 9 am **sharp**) the following Monday, for a total of 150 points. All of the exams and quizzes will require **T&E 0200 scantron forms** and a #2 pencil, so you will need to purchase a total of **6 T&E 0200 scantron forms**. All exams and quizzes will consist of 5-option multiple choice questions. Finally, because this is a core GE class, part of your grade will be based on doing at least 6 pages (1500 words) of written work, which will be assessed for correctness, clarity, and conciseness. In these assignments, you will have a chance to explore your own responses to the ideas and information you encounter in the class, as well as to deepen your understanding through discussion, reflection, analysis, and research. Some of these will be based on participation in in-class activities (including small-group discussions and class exercises) and on doing both in-class and at-home writing assignments; in particular a comprehensive research exercise which will include data collection, analysis and interpretation of results, and a written report. Complete instructions regarding the research exercise/report and all writing assignments will be handed out in class. All of these assignments and exercises will require you to practice analytical, composition, and critical thinking skills, and will be worth a total of 60 points. Some of these will be 5 pt. in-class assignments and you must be in class for these! **Note: There will be significant penalties for late papers, and all assigned work must be completed in order to pass the course.**

To summarize, your final semester grade in this course will be based on the following:

- Take-home quizzes: **3** X 50 pts. = 150 (26.8%)
 - Midterm exams: **2** X 100 pts. = 200 (35.7%)
 - 6 pgs of quantitative exercise, report, & other writing assignments = 60 (10.7%)
 - Final exam: 150 (26.8%)
- TOTAL POINTS: 560 (100%)**

GRADING:

Grading will be based on percent mastery, with 88-100% = A, 78-87% = B, 65-77% = C, 50-64% = D, and lower than 50% = F. However, should the performance of the class fall below these arbitrary grade cutoffs, then students will be ranked according to the total points accrued and the course grade will be assigned according to a normal distribution with the average performance given a middle "C" and the grade ranges determined by the standard deviation. Therefore, only A's and B's will be awarded if no class member receives less than 78% of the total points, and students will not be competing with each other. However, even if no one receives 88% of the total possible points, the highest ~8-15% will still receive A's. Plus grades are given to those within 1% point of a major grade change, while minus grades are only given to students bumped up to a higher grade based on improvement on the final exam.

EXAMS:

Midterm #1 will cover sessions 1 through 13, and is on **Monday, October 13**.

Midterm #2 will cover sessions 15 through 23, and is on **Monday, November 17**.

The final exam will be minimally cumulative (i.e, previous midterm questions), with an emphasis on the last 7 sessions and readings, and will be held on **Friday, Dec. 12** from 7:15-9:30 am. **Note:** The time of the final is not my choice; all classes that begin earlier than 10:30 have finals that begin at 7:15 am. So if you don't want 7:15 finals, don't enroll in classes that begin earlier than 10:30. :)

You will need to memorize a fair amount of specialized vocabulary, and to think through biological ideas which are unfamiliar to you; both of these activities require time and effort. You are expected to take notes in class and to do the reading on time, so that you can follow the development of ideas and information, and so that you can bring questions and comments to class and to the instructor's office hours in a timely fashion.

MAKE-UP POLICY:

Make-up exams will **not** be given unless 1) a **phone** message AND an email are left before the scheduled time of the exam, 2) the reason for missing the exam is **important, beyond your control** and 3) is **verifiable by a reliable source**. In the case of illness, an official note from a physician or nurse-practitioner is required. There will only be **one** make-up exam given, and it will be different than the original exam. If you are going to hand written work in late, you must also notify the instructor **before** the due date of the written assignment. There will be a penalty for written work handed in late if the reason is not important, beyond your control and verifiable by a reliable source. **All assigned work - especially writing assignments - must be completed in order to pass the course.**

ATTENDANCE:

After the first few weeks, roll will not be called. Dropping the course is **your** responsibility, and I will not do it for you should you vanish during the semester. Pay attention to the drop deadline in the online Schedule of Classes. Attendance is both necessary and expected, and it is exceedingly unlikely that you will get anything out of the class - including a passing grade - should you miss many lectures. Class will begin on time and tardiness should be avoided, although you are strongly encouraged to attend lecture even if quite late: if unavoidable, come in quietly and take a seat towards the rear; don't just blow off class if you're late. I also have no problem with you recording class sessions, but you'll probably want to sit up front for good auditory reception.

IMPORTANT CAVEATS AND NOTES:

Cell Phones: Students will turn their cell phones off or put them on vibrate mode before they enter class, and they will put them away. They will not answer their phones in class. Students whose phones disrupt the course and do not stop when requested by the instructor will be referred to the Judicial Affairs Officer of the University.

Computer Use: In the classroom, faculty allow students to use computers **only** for class-related activities. These include activities such as taking notes on the lecture underway, and finding Web sites to which the instructor directs students during the lecture. Students who use their computers for any other activities will be asked to leave the class and will lose participation points for the day, and, at a maximum, will be referred to the Judicial Affairs Officer of the University for disrupting the course. (Such referral can lead to suspension from the University.) No other electronic devices are allowed in class; this mean no Ipods, Mp3 Players, sidekicks, PDAs, Blackberries, Raspberries, etc. Any student who has one of these devices out in class will be asked to leave the classroom.

Classroom behavior: Expectations about classroom behavior; see Academic Senate Policy S90-5 <<http://www2.sjsu.edu/senate/s90-5.htm>> on Student Rights and Responsibilities.

Finally, in the 31 years that I have been teaching at the university level, I have cancelled class a total of **2** times. Therefore, if you come to class and see a door sign indicating that class is cancelled, you should **assume it is a hoax** and wait outside the class for a minimum of 15 minutes before leaving. This 15 minute rule is a general rule for **all** classes, as professors can also run late.

Campus policy in compliance with the **Americans with Disabilities Act**: "If you need course adaptations or accommodations because of a disability, or if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability."

You are responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at <http://info.sjsu.edu/home/schedules.html>

SJSU ACADEMIC INTEGRITY POLICY:

Academic integrity statement (from Office of Judicial Affairs): "Your own commitment to learning, as evidenced by your enrollment at San José State University and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Student Conduct & Ethical Development. The policy on academic integrity can be found at

http://sa.sjsu.edu/student_conduct.

Academic integrity is essential to the mission of San José State University. As such, students are expected to perform their own work (except when collaboration is expressly permitted by the course instructor) without the use of any outside resources. Students are not permitted to use old tests or quizzes when preparing for exams [**NB: this is expressly allowed in all of Prof. Karpf's classes**], nor may they consult with students who have already taken the exam. When practiced, academic integrity ensures that all students are fairly graded. Violations to the Academic Integrity Policy undermine the educational process and will not be tolerated. It also demonstrates a lack of respect for oneself, fellow students and the course instructor and can ruin the university's reputation and the value of the degrees it offers.

We all share the obligation to maintain an environment which practices academic integrity. Violators of the Academic Integrity Policy will be subject to **failing this course** and being reported to the Office of Student Conduct & Ethical Development for disciplinary action which could result in suspension or expulsion from San José State University.

CHEATING:

At SJSU, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

Copying in part or in whole, from another's test or other evaluation instrument; submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy; submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by departmental policy; altering or interfering with grading or grading instructions; sitting for an examination by a surrogate, or as a surrogate; any other act committed by a student in the course of his or her academic work which defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

PLAGIARISM:

At SJSU plagiarism is the act of representing the work of another as one's own (without giving appropriate credit) regardless of how that work was obtained, and submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

The act of incorporating the **ideas**, words, sentences, paragraphs, or parts thereof, or the specific substances of another's work, without giving appropriate credit, and representing the product as one's own work; and representing another's artistic/scholarly works such as musical compositions, computer programs, photographs, painting, drawing, sculptures, or similar works as one's own.

If you would like to include in your paper any material you have submitted, or plan to submit, for another class, please note that SJSU's Academic Integrity policy S04-12 requires approval by instructors.

POLICY ON CHEATING AND PLAGIARISM:

Please familiarize yourself with the Policy on Academic Integrity included above and in the online schedule (<http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-360.html>). In this class there are severe penalties for cheating (on exams) and for plagiarism (i.e., copying directly or close to directly someone else's words and representing them as your own). Plagiarism is cheating. There will be a zero tolerance for cheating in any form, with an immediate "**F**" in the course and an academic dishonesty report made to the Dean of Undergraduate Studies. Receiving two such reports is grounds for suspension or expulsion from the university. Please refer to **item 15** on page 9 (the writing guidelines).

DROP POLICY AND THE "W" SYMBOL (action by the university president, 8/3/98)

1. The consequences of dropping a course are to be determined by the following schedule:
 - Drop Deadline: Last day to drop a class without a "W" grade. **(Friday, 9/5)**
 - Add Deadline: Last day to add a class, make grading changes, submit academic renewals and instructor drops. **(Friday, 9/12)**
2. After Friday, 9/5, a student may withdraw from class only for "serious and compelling reasons" which shall be

defined as circumstances and genuine emergencies beyond the student's control.

3. These circumstances must be documented with such evidence as death certificates (or equivalent) of immediate family members, letters from employers, or notes from doctors. Failure, or anticipated failure, or non-attendance, is not a valid reason for withdrawing from a course.
4. The Vice President for Student Affairs shall develop a list of acceptable circumstances and guidelines for certification of said circumstances, petition forms to be issued to all colleges (which shall include space to state the reasons for the proposed withdrawal, and the current grade the student is earning), and appropriate sanctions for those submitting fraudulent certification.
5. The President shall appoint one individual (in accordance with Executive Order 268) to administer course and university withdrawals. This individual will be responsible for distributing and receiving petitions, verifying certification, and approving withdrawal from the University.
6. In the case of course withdrawals, students must first obtain the faculty member's signature. This signature indicates that the student has been advised of his/her options regarding the course. Students will be advised about the possible negative impact of the "W" on their transcript and where appropriate, be encouraged to consult with the Student Resource Center. If a faculty member does not sign the petition, the matter will be resolved by the President's appointee. The President's appointee will verify the certification that the student uses to indicate "serious and compelling" reasons for needing to withdraw before signing the petition.
7. When a "W" appears on a student's transcript, the transcript will contain a notice that withdrawals at San Jose State University are given only for circumstances beyond the student's control, and not for any other reason, including academic performance. The "W" will remain uncouncted in the student's GPA, as before.
8. The option of the Incomplete remains, as before.
9. Nothing in the above prevents an instructor from dropping a student who has neither attended class nor contacted the instructor by the "Instructor Drop" deadline which is Census Day.
10. A "U" (as of F'02, a "WU") remains appropriate to assign when a student, who is enrolled on Census Day, does not successfully petition for a "W" but fails to complete course requirements, and those assignments which were completed were insufficient to make normal evaluation of academic performance possible.

GUIDELINES FOR ALL OUT-OF-CLASS WRITING ASSIGNMENTS:

1. Do **not** put any sort of cover or title page on your papers.
2. **Staple** the pages together in the upper left-hand corner. **Note:** a paper clip is not a staple...
3. In the upper **right-hand** corner of the **first** page **only**, please provide the following info:
 - **Your name** (first name **first**, last name **last**)
 - **Anth 12(1)**
 - **Paper #X** (this semester your 2 out of class papers will be papers #4 and #6)
 - **The due date**
4. This **4 line** block of information should be **single-spaced** and as close to the upper margin of the first page as possible. The paper itself should be **double-spaced**.
5. Nothing else should appear at the top of the paper; **no** title, **not** my name: **nothing**.
6. Skip **one** line only (i.e. a double space) and begin the body of your paper. The first sentence of the first paragraph should indicate the topic of the writing assignment.
7. Do **not** worry about formal paper construction, i.e., an introductory paragraph, a formal concluding paragraph or whatever; simply **address the questions asked**.
8. **Number** your pages at the bottom middle of each page.

9. No **margin** should be larger than 1"; that means **all** margins: left, right, bottom (and the top of all pages other than the first page).
10. If the assignment is for 3 pages, this means 3 **complete** pages; not 2 and 1/2, not 2 and 3/4, but 3 full pages. Points will be deducted for short assignments. It is probably to your advantage to go a few sentences over the minimum if you aren't certain about length.
11. **Left justify only**. Do **not** justify the right margin; leave it ragged.
12. Use "standard" fonts, and do not use any font larger than 12 point or smaller than 9 point.
13. Use **5-space indentations** for new paragraphs; do **not** use line-breaks between paragraphs.
14. **DO NOT QUOTE!** All of the writing should be in your own words. If you need to summarize the content of another person's writing, identify your source and paraphrase. This is good practice; if you can paraphrase accurately, then you understand what the person is saying. **NO QUOTES!**
15. **DO NOT PLAGIARIZE!** There are SEVERE penalties for plagiarism (i.e., copying directly or close to directly someone else's words and representing them as your own). Plagiarism is cheating. Cheating at the university is grounds for: receiving an M for the assignment, receiving an M in the course, and/or suspension or expulsion from the university. So do not use direct quotes and **do not plagiarize**; instead, respond in your own words. If there is any hint of plagiarism (including two students turning in substantially similar papers) you will receive an "M" in the course and I will file an academic dishonesty report which can lead to your expulsion from the university. **NOTE: I utilize 4 different plagiarism software programs, including 3 which search the net**. Please familiarize yourself with the Policy on Academic Dishonesty in both the online schedule of classes, the online course catalog (<http://info.sjsu.edu>) and the handout in class. You have **no** reason to go to the internet for these papers; please do not make me fail you...
16. We will be using Turnitin.com this semester. Begin by surfing to <http://www.turnitin.com> and setting up a student account. You will need the **class ID#**, which for Anth 12(1) is: **2319267**. Please also take the plagiarism training which you can find at: http://www.turnitin.com/research_site/e_home.html.
17. **Proof-read** your paper. Points will be taken off for sloppy grammar, syntax and spelling. Especially if English is not your first language, it may be useful to have your paper proof read by a native English speaker who writes well, or at the Learning Center in Student Services.
18. Points will be taken off for not following instructions.
19. Points will be taken off for late papers that are unexcused; 1/2 of the points if turned in within 2 days of the due date. Any later will fail to earn points but will count towards the GE minimum.

COURSE OUTLINE

<u>Session Date</u>	<u>Topic</u>	<u>Text</u>
	Ch/pp = Stanford, et al.	textbook
	DFB = Darwin For Beginners	
	CGG = Cartoon Guide to Genetics	
1. M 8/25	Course logistics	DFB: 3-45
2. W 8/27	An introduction to anthropology	DFB: 46-81
	In-class writing assignment#1 & survey #1 Ch. 1	
	[These will address GE Learning Objectives #1 & #2]*	
-- M 9/1	LABOR DAY (CAMPUS CLOSED) HONOR LABOR! LOOK FOR THE UNION LABEL!	
3. W 9/3	The nature of realities	DFB: 82-100
	Introduction to the scientific method	
	Religious vs. scientific explanations	
-- F 9/5	LAST DAY TO DROP A CLASS!	
4. M 9/8	Science as a way of knowing:	DFB: 101-137
	Small group activity: hypothesis formulation [Addresses GE Learning	Objectives # 1 & #3]*
5. W 9/10	A brief history of evolutionary thought	Ch. 2

-- **F 9/12 LAST DAY TO ADD A CLASS OR CHANGE GRADE OPTIONS!**

6. M 9/15 Darwin's evidence: Beagles, tortoises and finches Ch. 9
7. W 9/17 The Pliocene hominid origin, or: "Look ma, no hands!" Ch. 10
Genus Australopithecus, or: I love Lucy
8. M 9/22 More evidence: embryology, the comparative approach, and vestigial structures
Read instructions for O.C. Paper #4

9. **W 9/24** Fitness, natural selection, moths, tapeworms Ch. 5
and measures of species success
Take-home Quiz #1 (50 pts.)
[Addresses GE Learning Objectives #1, #2 & #3]*

10. **M 9/29** Darwin's problems: To blend, or not to blend... CGG: 37-78
Take-home Quiz #1 DUE!

Session Date TopicText

11. W 10/1 Mendelian genetics: Sex and the single gene... Ch. 4
12. M 10/6 Mendelian genetics, or What's an allele?CGG: 79-96
13. **W 10/8** Segregation, independent assortment & crossing over CGG: 97-10
REVIEW SESSION FOR EXAM #1: (R or F: Time TBA)

14. **M 10/13 MIDTERM EXAM #1** (Have your T&E 0200 form filled out correctly!)
[Addresses GE Learning Objectives #1, #2 & #3]*

15. **W 10/15** Mendelian genetics: modes of inheritance
In-class writing assignment#3
[Addresses GE Learning Objective #3]*

16. M 10/20 Mendel reconsidered: polymorphism, linkage, dosage and codominance

17. **W 10/22** Intro to cell biology and a molecule called DNA Ch. 3
O.C. Paper #4 DUE! [Addresses GE Learning Objectives #1, #2 & #3]*

18. M 10/27 DNA structure: Purines, pyrimidines, and nucleotides CGG: 104-128

19. **W 10/29** DNA function: RNAs, protein synthesis and gene products CGG: 129-163
Take-home Quiz #2 (50 pts.) [Addresses GE Learning Objectives #1 & #3]*

20. **M 11/3** Still more on DNA, or What's **really** an allele?
Take-home Quiz #2 DUE!
OC Paper #6 (Quantitative Assignment) discussed in class

21. W 11/5 Amplification, gene regulation, telomeres and Dolly the sheep CGG: 164-210

22. M 11/10 Evolution in human populations: Sickle Cell Anemia Ch. 6
Lactose "Intolerance", or Milk **isn't** good for everybody
23. W 11/12 More on Natural Selection and the other forces of evolution Ch. 5
Genetic Drift: fruitflies, bottlenecks and cheetahs...
REVIEW SESSION FOR EXAM #2: (R or F: Time TBA)
24. M 11/17 **MIDTERM EXAM #2** (Have your T&E 0200 form filled out correctly!)
[Addresses GE Learning Objectives #1, #2 & #3]*
25. W 11/19 Modern human "racial" variation in an evolutionary perspective Ch. 13
In-class writing assignment#5 (5 pts.) pp. 112-121
[Addresses GE Learning Objectives #1, #2 & #3]*

Session Date Topic Text

26. M 11/24 Modes of Selection and the "Coolidge Effect" Ch. 7
Take-home Quiz #3 (50 pts.) [Addresses GE Learning Objectives #1 & #3]*
27. W 11/26 On the origin of species, or: Did you hear the one Ch. 5
about the Chihuahua and the Great Dane?
Take-home Quiz #3 DUE!
28. M 12/1 Macroevolutionary principles, or Whence species? Ch. 5
Modes and tempos in evolution: Red Queens and hopeful monsters
OC Paper #6 (Quantitative Assignment) DUE!
[Addresses GE Learning Objectives #1 & #3]*
29. W 12/3 The origin of life, terrestrial vertebrates & mammals Ch. 7
30. M 12/8 The origin of the primates: trees and/or insects? Ch. 11
Macroevolution: Adaptive radiation, extinction, convergence,
homology, tectonics and cladistics
31. W 12/10 The transition to genus Homo and the spread of culture Ch. 11
Homo ergaster and Homo erectus or : Out of Africa Ch. 12
Neanderthals and the origin of Homo sapiens
The origin of modern humans, or: mtDNA and All about "Eve"
SURVEY #2 [Addresses GE Learning Objectives #1, #2 & #3]*
- W 12/10 **Review Session for Final Exam** (5:30-7:30 pm/Place TBA)
- F 12/12 **FINAL EXAMINATION (7:15-9:30 am)** NOTE THE TIME DIFFERENCE!
(Have your T&E 0200 form filled out!)
[Addresses GE Learning Objectives #1, #2 & #3]*

* [NOTE: Chapters 8, 14, and 15 are quite interesting and may be read for interest, although they are not required and no exam questions will be based on them.]

***GE Area B2 Student Learning Objectives:**

Students should be able to:

1. Use of methods of science and knowledge derived from current scientific inquiry in life or physical science to question existing explanations;
2. demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues; and
3. recognize methods of science in which quantitative, analytical reasoning techniques are used