

Rowan University: *Human Variation*
Fall 2017

ANTH 02221
M/W 12:30-1:45; 2:00-3:15
Robinson Hall 205

Instructor:

Raquel Fleskes, Ph.D. Student
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Office Hours:

Mon & Wed 10:00 am-Noon;
James Hall Room 3033
If this time does not work for you, email me to
set up an appointment (see above) – note that I
am only on campus Monday and Wednesday.

Required Texts:

You will be required to purchase the following book – available on Amazon or Barnes and Noble:

1. Nelson, A. *The Social Life of DNA*. (Beacon Press, 2016).

Any other additional reading materials will be posted on Blackboard – we will be reading a variety of book chapters from the following textbooks. Do not worry about purchasing these textbooks, but I have provided the information if you would like to read beyond what is required:

- Brown, D. E. *Human Biological Diversity: An Introduction to Human Biology*. (Prentice Hall, 2009). *Noted as “HBD” on Blackboard.*
- Jobling, M. A., Kivisild, T. & Tyler-Smith, C. *Human Evolutionary Genetics*. (Garland Science, 2014). *Noted as “HEG” on Blackboard.*
- Herron, J. C. & Freeman, S. *Evolutionary Analysis*. (Pearson, 2014). *Noted as “EA” on Blackboard.*
- Larsen, C. S. *Our Origins: Discovering Physical Anthropology, Second Edition*. (W. W. Norton, 2011). *Noted as “OO” on Blackboard.*
- Reece, J. B., & Campbell, N. A. *Campbell biology*. (Pearson, 2011). *Noted as “CB” on Blackboard.*

Other Course Materials:

All course materials can be found on the site’s Blackboard page, except for the required course books. There are folders where you will find the additional course readings, syllabus, and powerpoint lectures. All assignments and weekly quizzes will be submitted through Blackboard. In addition, all grades will be posted on Blackboard.

COURSE SUMMARY

Course Content:

1. Evolution and Anthropological Genetics: You will learn the basics of human evolutionary theory and how genetics is intimately intertwined with the evolutionary history of our species.
2. Human Variation and Adaptation: You will understand how the environment has shaped human genetic and physical variation, resulting in differences in disease susceptibility, body shape and size, and allowed us to adapt to certain environments more successfully. You will also learn how this information is applied to fields of public health, genetics, and forensic anthropology.

Course Objectives:

1. Develop skills of critical thinking, effective communication, research and collaboration.
2. Develop student research skills which strengthen their ability to grasp the scientific aspects of human variation.
3. Develop student ability to read, interpret and evaluate original sources in the scientific literature.
4. Develop student foundational understanding of scientific methodology and reasoning in a way which allows them to intelligently discuss and assess competing theories.
5. Provide knowledge of cultural factors which impact human biology and the natural world.

Student Learning Outcomes:

1. Demonstrate general knowledge of evolutionary theory, human genetics, biochemical and disease variation, human adaptations, and environmental impact on human growth and development.
2. Demonstrate ability to research and write on a topic in the scientific literature pertaining to human variation.
3. Demonstrate ability to integrate information from multiple venues such as readings, in class (lab) exercises, lectures, and films.

Student Learning Outcomes will be achieved via:

1. In-class exercises which will illustrate and develop an understanding for the forces of evolution.
2. Writing Assignments to demonstrate student's ability to synthesize information and connect it to course content.
3. Weekly quizzes and tests which assess student's understanding of human variation and Anthropological genetics.
4. Research reports in forms of writing and class presentations which will demonstrate a student's ability to understand and present academic literature sources related to concepts in human genetic and disease variation.

REQUIRED WORK

1. **Tests:** There will be a NON-CUMULATIVE midterm and final for this course. The midterm will be taken in-class, and the final taken during the designated time/location set by the University during finals week. The questions will consist of multiple choice, fill in the blank, matching, true/false, and short answer questions. Each exam will count for 15% of your grade. There will be no regrades for exams. Study guides will be given for each of the tests.
2. **Disease Group PowerPoint Presentation:** The class will be divided into teams of two students each and each team will be assigned a genetic disease on which they will make a short Powerpoint presentation to the class at the end of the term. Diseases will be assigned to each team early in the term to give you ample time to prepare. Guidelines for the presentation will also be provided. Your presentation is worth 15% of your final grade.
3. **Writing Assignments:** Over the course of the semester there will be two additional writing assignments you will need to complete, each counting for 5% of your grade. These assignments will help you improve your writing, analytical, and research skills. I am a picky grader when it comes to writing assignments, and improper grammar will result in points taken off. *You can always send me a draft of your assignments 1 week ahead of time if you would like feedback on your writing or work!* These assignments will consist of the following:

- I. *What Darwin Never Knew – Film Response: (750 words, double spaced)*
- II. *Mini-mtDNA Research Paper: (750 words, double spaced)*

Directions and rubrics for each assignment will be posted on Blackboard. All assignments should be turned on through Blackboard. Any late submissions without an appropriate excuse will result in -.5pts per day.

4. **Lab Activities:** You will complete two lab activity worksheets: One on Hardy Weinberg Equilibrium, and the other as a take-home discussion on book *The Social Life of DNA*.
 - I. The **Hardy Weinberg Equilibrium worksheet** will be handed out in class and will be due at the end of the class period. There is no work due at the beginning of class for this activity, aside from the daily reading.
 - II. **The Social Life of DNA worksheet** will be available at the start of the semester. You should use this worksheet to answer questions about the book as you are reading it. This will not only help you to think about the book's themes, but will help remind you of things that you thought were interesting during the class book discussion. This worksheet must be completed by the book discussion date (Nov. 27th).

Attendance is mandatory during lab activity days to receive credit for the assignment – the dates of the Lab Activities are marked on the course schedule. You cannot be absent during these days without a valid excuse/doctors note.

5. **Weekly Quizzes:** You will be required to take weekly quizzes ONLINE on Blackboard. These quizzes are designed to help you review the course material, and also boost your grade! They will consist of 5-10 relatively easy questions based on material from the week's lectures. They will be open note and you can take as long as you like to answer them. They will be due each week by 11:59 PM on Sunday, so you have time to complete them over the weekend. At the end of the semester, your two worst scores out of 10 quizzes will be thrown away, and the best 8 will be kept. Each quiz will count for 2.5% of your grade, totaling to 20%
6. **Attendance and Participation:** The deans of Rowan University require that attendance be taken at every class and I am required to report on your attendance to the Rowan RSN system. Non-attendance, especially for freshmen, can affect federal tuition funding.

You are allowed two unexcused absences over the course of the semester. Any absences over that number will require a written and dated excuse **OR** you will lose a portion of your class participation grade. Missing any class is not advisable. This is a heavily lecture-dependent class and missing will deprive you of information and experience you will need to pass the course. No make-ups or postponed assignments without an **official, dated excuse** from a doctor, a dentist, a judge, an arresting officer, a funeral home director (only for funerals for a member of the family)

In cases of inclement weather (tornadoes, hurricanes, flooding, snow and ice storms) call (856) 256-INFO to find out if the university is closing.

If you have a religious observance during the semester and will miss class, let me know ASAP. This counts as an excused absence and I will help you with the missed material.

Class participation is also an important part of your grade. I often ask questions about the topics I am lecturing about – and I expect to hear from you! If you have done your readings before class, you should be prepared to answer. It doesn't matter if you get it wrong, I just want to know you are making an effort to prepare and participate in class. If you have not done the readings and are not prepared your class participation grade will suffer. Attendance and Participation is worth 10% of your final grade.

GRADING BREAKDOWN	
Midterm (non-cumulative)	15%
Final (non-cumulative)	15%
Disease Group PowerPoint Presentation	15%
Writing Assignments (2 total)	20% (10% each)
Lab Activities	10% (5% each)
Weekly Quizzes (10 total, count best 8)	20%
Attendance and Participation	5%
TOTAL	100%

Grade scale: 95 and \geq A, 90-94=A-, 87-89=B+, 84-86=B, 80-83=B-, 77-79=C+, 74-76=C, 70-73=C-, 67-69=D+ 64-66=D, 60-63=D-, 59 and \leq F

HOW TO DO WELL IN THIS CLASS:

1. *Do the readings!* Take notes on them before each class. These readings have been specifically picked for the topic, and are not designed to fill space or give you erroneous work. This will be your first exposure to the course information and prime you for lecture.
2. *Come to class!* Takes notes, ask questions, be involved. This will be your second exposure to the course information.
3. *Take the weekly quizzes!* They will help you study and will boost your grade at the end of the semester. This will be your third exposure to the course information during the week. Learning is best accomplished through multiple reviews of course material. Readings, lectures, and quizzes will help you digest the information 3x more than if you just passively sit through lecture.
4. Take time to write your writing assignments! The worst thing you can do is write an assignment in 1 hour and then immediately turn it in. Often times, you miss grammar mistakes or realize that you aren't actually answering the question. Write your assignment, leave it for a day, and then come back to it. This will dramatically improve your writing and often boost your grade! Or, you can start the assignment early. I will look at drafts of your written assignments 1 week before they are due and give you feedback. I won't look at anything that's later than that though.
5. Start studying 2 weeks before the exam. Review it a small amount every day, if you can. You are more likely to remember information and think more clearly for the test if you have studied over a longer period of time, than crammed it in with a 5 hour energy.
6. Come to office hours if you are struggling with the course content. I am more than willing to walk you through concepts that are tough. **This is not an easy A course.** We will be going through some pretty advanced concepts for an intro-level class. But everyone can do well in this class if they do the work and put in the time/effort.

OTHER IMPORTANT INFORMATION:

Electronics/Computer Policy:

There is a strict NO ELECTRONICS policy for this class. That means all phones, tablets, computers, ipads, ect are not allowed to be out during lecture. If I see anyone using their smart phones, tablets, laptops, iWatches or whatever electronic gadget you favor during lecture or discussion more than once, that student will lose their class participation grade, which is 10 percent of their final grade. If you find that you are incapable of leaving your smart phone alone and need help meeting this course requirement, I can hold your phone for you while class is in session and give it back to you when class is over

Now you might tell me – “Prof. Fleskes, but I take notes on my laptop! It helps me study!” - Well, you actually learn information better by handwriting notes rather than typing them:

http://www.fastcodesign.com/3029713/the-best-way-to-remember-something-take-notes-by-hand?utm_source=fastcompany.com&utm_medium=pubexchange

“But, I won’t be able to copy down all the notes in time!” - This class will not give you an overwhelming amount of information that you cannot possibly write down in time. I will make sure to give ample time for everyone to take notes. In addition, the Powerpoints will be posted on Blackboard the night before, so you can print them off and write all over them if you so desire. I find that this helps!

☹ – Electronics in class do more harm than good. Online shopping, facebook, Instagram, twitter, Bachelor in Paradise news, all are things that you can do *outside* of class. In class, these things will distract you from learning, and will distract your peers around you:

<http://www.psychologytoday.com/blog/everybody-is-stupid-except-you/201305/close-laptop-in-class>
<http://www.nbcnews.com/technology/students-cant-resist-distraction-two-minutes-neither-can-you-1C9984270?franchiseSlug=technolog>

If you need to take a call or use your phone at all, please step into the hallway to do so.

Behavior:

You are a student in a university and you know how behave like an adult. Being rude to your instructor or fellow classmates is not acceptable and you will be asked to leave the class (or in extreme cases, drop the class) if you indulge in immature behavior. Under no circumstances will I tolerate disrespectful language or behavior on the basis of any personal, cultural, ethnic, political or any other perceived difference between students. Good (and adaptable!) hominids show group cohesiveness.

If you must get up to use the restroom during class or leave the room for whatever reason, exit around the back of the room so as not to disrupt lecture or discussion.

Library Skills:

In addition to writing in correct style, a major criterion for grading your written work is that you demonstrate an ability to use the analog and digital resources of the university library in a scholarly manner. It IS possible to use the Internet to do serious research, provided you are aware of the differences between scholarly resources and sites written and supported by enthusiasts or special interests.

Archaeology is a fascinating topic to many people, most of whom have no formal training, and websites maintained by these people do not make reliable sources for information. As a class, we will conduct a library workshop before your first writing assignment is due.

Class Cancellation due to Weather/Emergency:

If class is canceled for any reason, you will still be responsible for completing any readings and assignments listed in the Lecture Schedule. This material will also still be covered on any upcoming midterm or exam.

Accommodation for various disabilities:

Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact me. Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the third floor of Savitz Hall. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. We all look forward to working with you to meet your learning goals.

The objective of the above statement is to encourage you to come forward and discuss this matter as early as possible in the semester, to demonstrate to you that I and the University are more than willing to work with you and to provide the necessary accommodations, to help you to focus on your academic success and to provide you with further resources, including web links, offices and people who can help. To be legally eligible for these services, however, you must register with the Academic Success Center (phone number above).

Once you qualify with the Academic Success Center for accommodations, you are not required to disclose your particular disability to anyone, including your professors, unless you want to.

Plagiarism/Honesty:

If you are dishonest, cheat or plagiarize anyone else's work you will receive a 0 for the assignment and may face disciplinary action by the university. Cutting and pasting text and images from the internet without giving proper credit counts as plagiarism. For a more detailed rundown of the consequences of violating the university's academic integrity policy see this website:

<http://www.rowan.edu/provost/policies/AcademicIntegrity.htm>

Drop/Add, and Incompletes:

You may **add or drop this course** freely from Sept. 5-11th. Once this period is over, the **late withdraw** period begins (9/12-10/28) – during this time you may **withdraw** from this class with my signature before the midterm (10/25) with either a passing or failing grade depending on where you stand at the time.

If you wait until later than the midterm (10/25), both I, and James Abbott, Chair of the Department of Sociology and Anthropology, will have sign off on your withdrawal. If you wait until the last four weeks of the semester I, the Chair of Sociology and Anthropology Dept., and Dean of Liberal Arts and Sciences will have to agree to allow you to withdraw. If you wait until too late in the semester, they may not permit you to withdraw at all without a hardship that is completely beyond your control. See page the Registrar office's document on registration related dates for the **Fall 2017 Semester** for important deadlines and information. Here's the link:

<http://www.rowan.edu/provost/registrar/forms/F17Registration-relatedDates.pdf>

Doing only some of the work for this course is not an option. Those who do not complete all the work will receive either an **Incomplete** or a **Failing** grade for the course, even if they are taking the course for **pass/no credit**. If I agree to give you an incomplete, the work for the course must be completed by the end of the following semester or the **IN** on your transcript automatically becomes an **F**. This is Rowan's policy.

Pass/No Credit:

This course offers the P/NC option. If you elect this option, you decide that you will take a “P” as your final grade. You can get the necessary form from the registrar or it can be found at: http://www.rowan.edu/provost/registrar/forms/Pass_No_Credit.pdf. You have to fill it out, have me sign it and return it to the registrar by the end of the drop/add period. If you are doing well and later decide you want a grade, I may be able to change this option for you – but there are no guarantees.

To get a P in this course, you need a minimum average of 60. A “P” means that you get 3 credits when you complete this course and it goes on your transcript as a “P”. However, it doesn’t affect your GPA (grade point average) at all: it neither raises it nor lowers it. Keep in mind that you can only take a set percentage of all of your courses as P/NC ; usually this is 10%, but it may differ in different majors. Consult your major adviser as soon as possible to find out.

If you score below an average of 60 in this course, and you have elected the P/NC option, that means you get “NC” (no credit). As far as your transcript goes, it’s as if you never took the course at all and it doesn’t affect your GPA, though you also don’t get the 3 credits. If you have not elected the P/NC option and you earn a grade of less than 60, you will get an F.

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Lecture Schedule (Tentative) – some lectures may be changed/canceled in the course duration. Any changes will be provided on an updated syllabus. Due dates for tests, assignments, and weekly quizzes will *NOT* be changed.

When assigned, all online quizzes will be uploaded by the end of the day on Wednesday, and due at the end of each week, by **11:59 PM on Sunday**.

Reading Key:

OO = Our Origins
HEG = Human Evolutionary Genetics
EA = Evolutionary Analysis
HBD = Human Biological Diversity
CB = Campbell's Biology

all readings will be provided on BLACKBOARD

You will be responsible for all reading materials assigned to each lecture.

#	Date	Lecture Topic	Assignments	Readings
1	Sept. 6	Class Introduction Review Syllabus, Assignments	Begin reading "Social Life of DNA" and accompanying worksheet	
2	Sept. 11	Development of Evolutionary Theory		OO p. 25-41 HBD p.7-13
3	Sept. 13	Evidence for Evolution	Quiz 1 due Sept. 17	HBD p.13-25;
4	Sept. 18	Mechanisms of Evolution by Natural Selection: Mendelism		CB Ch. 14
5	Sept. 20	Mechanisms of Evolution by Natural Selection: Modern Synthesis & Structure of DNA	Quiz 2 due Sept. 24	HBD p.26-30
6	Sept. 25	Chromosomal Structure & Genetic Markers <i>Review mtDNA project, resources & Assign mtDNA groups</i>		HBD p. 48-65

7	Sept. 27	NO CLASS Watch “ <i>What Darwin Never Knew</i> ” – link on blackboard	Film Questions Due Sept. 29 th , midnight	Watch Film
8	Oct. 2	DNA Replication: Mitosis <i>Form groups for Genetic Disease Project</i>		CB Ch. 12
9	Oct. 4	DNA Replication: Meiosis <i>Library Research Workshop</i>	Quiz 3 due Oct. 8 (on lectures 6, 8, 9)	CB Ch. 13
10	Oct. 9	Protein Synthesis & Expression		CB p.325-331 HBD p. 31-33
11	Oct. 11	Environmental influences on Human Genetic Variation	Quiz 4 due Oct. 15	EA p. 147-157
12	Oct. 16	Forces of Evolution: Mutation, Selection		OO p.94-110;
13	Oct. 18	Forces of Evolution: Genetic Drift, Gene Flow/Migration, Assortative Mating	Quiz 5 due Oct. 22 mtDNA Primary & Secondary Resources Due Oct. 18 th , midnight – SEND VIA EMAIL.	OO p.110-118; HBD 43-47;
14	Oct. 23	Testing the Forces of Evolution: Hardy-Weinberg Equilibrium <i>Hardy Weinberg Lab</i>		HBD p. 40-43; EA p.180-197
15	Oct. 25	MIDTERM		
16	Oct. 30	Quantitative Genetics & Heritability		OO p.82-83; EA Ch. 9
17	Nov. 1	Human Biochemical Diversity	Quiz 6 due Nov. 5	HBD p.116-127
18	Nov. 6	Using Genetic Variation to Trace Human Migrations		HBD p.127-141
19	Nov. 8	Skin Color Adaptation & Race	Due: mtDNA mini-research report due Nov. 10 th , midnight. Quiz 7 due Nov. 12	HBD p.89-102; HEG p. 485-493;
20	Nov. 13	Evolution of Human Disease <i>Review Genetic Disease project and resources</i>		HBD p. 238-250; EA p.535-548
21	Nov. 15	Heat/Cold Adaptation	Quiz 8 due Nov. 19	HBD p. 201-216; OO p. 136-139

22	Nov. 20	High Altitude Adaptation	Disease Topic, Primary & Secondary Resources Due Nov. 20 th , midnight – SEND VIA EMAIL	HEG p. 495-496; HBD p. 216-220
23	Nov. 22	NO CLASS - Read <i>The Social Life of DNA!</i>		
24	Nov. 27	Diet and Nutritional Adaptation <i>30-minute Discussion: The Social Life of DNA</i>	Social Life of DNA Questions Due Nov. 27 th during the class period. Turn in Paper copies.	HEG p. 500-506; HBD p. 226-238
25	Nov. 29	Human Environmental Impacts: Stress, Chronic Disease & Adiposity	Quiz 9 due Dec. 3 (lectures 22, 24)	HBD Ch. 13
26	Dec. 4	Variation in Life History & Skeletal Growth		OO p. 125-132, 151-153; HBD p. 161-189
27	Dec. 6	Genetic Disease PowerPoint Presentations	Quiz 10 due Dec. 10 (lectures 25, 26)	
28	Dec. 11	Genetic Disease PowerPoint Presentations	Presentations Due Dec. 10 th by midnight on Blackboard	
	TBD	FINAL EXAM		

I, _____, have fully read and understand the above syllabus for Human Variation Fall 2017. I agree to adhere to all course requirements and principles described above.

Signature

Rowan Student ID Number

Date