

ANTH 350 (LEC02)
Human Variation and Adaptation

GFC Hours 3-0
Fall 2023



Instructor: Dr. Warren Wilson

Lecture Location: ES 743

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Lecture Days/Time: Fri. 10:00-12:50

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Prerequisite: Anthropology 201

COURSE DESCRIPTION

Where, when, and how did humans originate? What can molecular and population genetics tell us about our past and present? What can we learn from the skeletal remains of prehistoric peoples? Can any of this help us to understand our world today? Might it help us to understand why [almost a fifth](#) of Canadian university students have difficulty functioning due to depression or anxiety? How should we [raise our children](#)? Are we unique among animals?

Why do we have such big brains? Why do we share so much in common with other primates and what might this tell us about who we are today? This course is designed to help us to answer these questions by providing a concentrated, hands-on introduction to human biology, the human place in the animal kingdom, and the evidence for human evolution.

We will begin with a consideration of the **scientific method** and **evolutionary theory** (Figure 2). A thorough understanding of both is essential as they provide the foundation upon which biological anthropologists base their work. We will then cover **human genetics** at the molecular and population levels. Next, we will learn to identify **human skeletal** remains, which will help us to understand the lives of prehistoric human populations and provide a basis for subsequent sections on the fossil evidence for human evolution. To further help us understand our place in the natural world and built upon the understanding that we share recent ancestors with other primates, we will then study non-human **primate ecology**. Primate ecology can help us to determine whether aspects of our behaviors and mental capacities reflect ancestral evolutionary heritage or are new features evolved or socially acquired by our lineage. Subsequently, we will cover **the evidence for human evolution** and the **major developments in the evolution of our species**. This consideration of the evolution of humans should help us to understand modern human biology, our relationship with the rest of the natural world, and possibly inform our future action as a species. In our last meeting, we will return to the consideration of contemporary human biological variation via **anthropometrics**, a suite of tools that biological anthropologists use to document variation in human well being.

In all of my teaching and research, I constantly ask does this matter? Does this material have any bearing upon our lives? I wouldn't teach this if I didn't strongly believe that it does. Do not, however, take my word for it. Ask these questions every time you engage with this course. I'll be curious to hear your answer when the course wraps up.

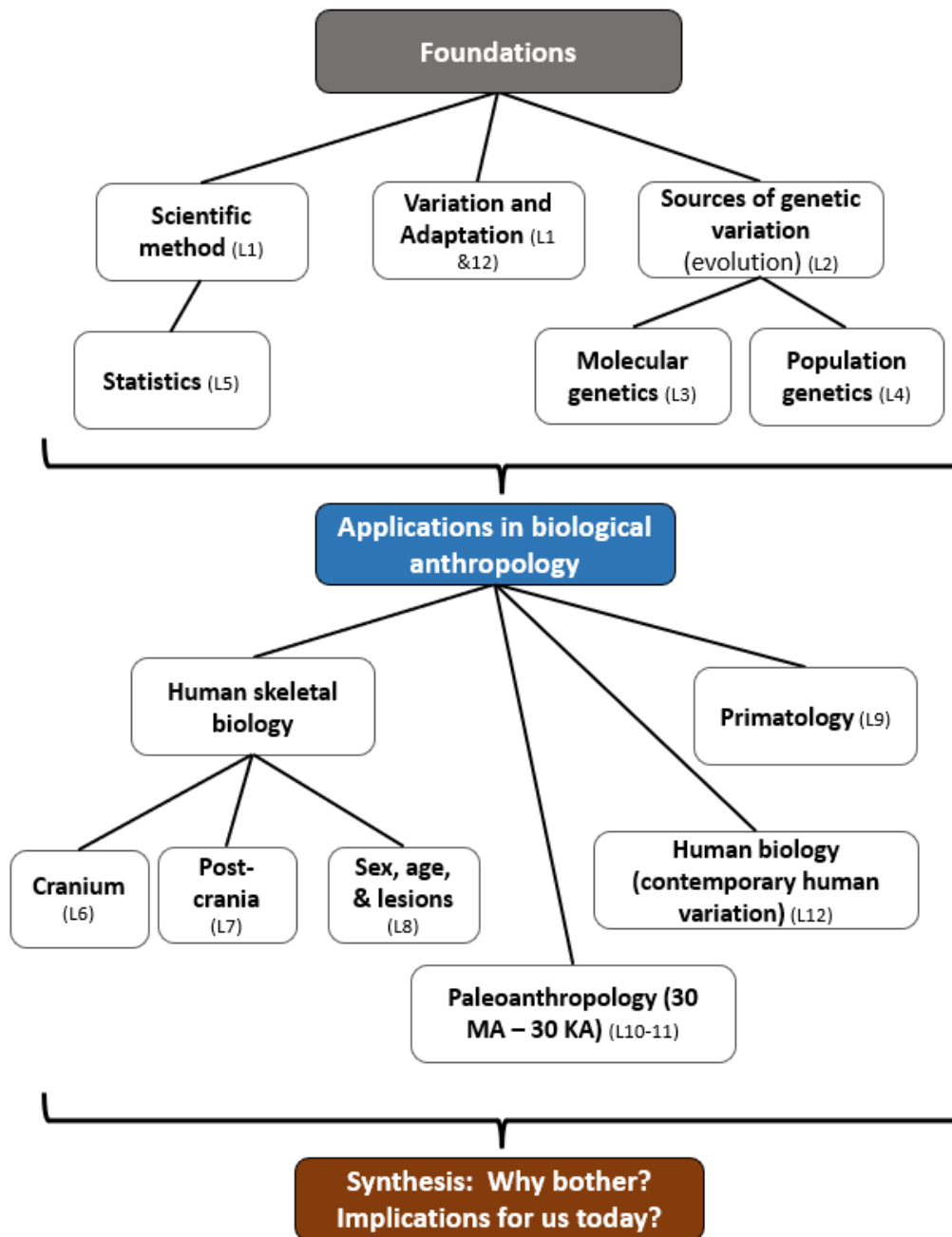


Figure 2: Course Map

READINGS AND TEXTBOOKS:

Your weekly labs and question sets, reading, video, and podcast assignments are be found in the schedule below and Course Bibliography in [D2L > Content](#). In addition to the required materials, optional readings, podcasts, and videos are often provided to enhance your knowledge of the subject in question. Keep in mind that *you are not finished with the reading, podcast, or video assignment until you thoroughly understand it*. There are a variety of strategies to improve your retention of material (e.g. [here](#), [here](#), and [here](#), etc....of these my students have told me [that Kaplan's series on how to do well in college](#) is particularly helpful).

LEARNING OUTCOMES:

The Department of Anthropology and Archaeology is committed to student knowledge and skill development.

Upon completion of this course, you should be able to:

- 1) list ways of knowing and use one of these, the scientific method, to critically evaluate conclusions made about the relationship between variables;
- 2) provide a clear explanation of cellular reproduction, protein synthesis, and the inheritance of traits;
- 3) provide a clear explanation and examples of the mechanisms that drive change in species over time (e.g. natural selection, sexual selection, genetic drift, gene flow, and mutation);
- 4) identify the types, features, sex, side, and several lesions of human skeletal remains;
- 5) be cognizant of cultural sensitivities, explain why we should *or* should not study human skeletal remains;
- 6) run a small experiment on non-human primate behaviour, explain why our government should or shouldn't fund such primatology research;
- 7) delineate the evidence for human evolution;
- 8) link the knowledge obtained in this course to your everyday life and events in the news.

REQUIRED TECHNOLOGY and EQUIPMENT:

You are required to have access to a computer or similar equipment to enable you to read and post assignments on the class D2L site.

COURSE REQUIREMENTS AND ASSESSMENT

The metrics used in this course are designed to assess different types of knowledge and to ensure that my TAs and I can determine if you might benefit from additional assistance to master the material. The marking components are as follows:

- Lab practicals (36%): Your knowledge of the material covered in this course will be evaluated, in part, in three lab practicals. In lab practicals you will have to identify actual items such as fossils, bones, structures of DNA, etc. that you've studied in lab. For example, you may be given a particular bone and asked to name it, the side of the body from which it came, and other information it might provide. On each practical you should expect some items that you haven't

seen in lab, such as a new model, a different bone, or fossil. The lab practicals will generally last about 25 minutes at the beginning of the class and be structured as “bell ringers”; that is, the questions will be laid out in stations around the lab and you will move from station to station in the lab every time a bell rings. In some cases, particularly in Lab Practical #1, your lab practical may also include an essay question. In all cases, lab practicals are closed book and you will not be allowed to consult notes during the practical.

- Question sets (23%): Weekly, you will receive short questions about the content of reading assignments, as well as questions that ask you to reflect on what you are learning, such as describing the most interesting thing you learned from the reading. Weekly, we will discuss your answers in small groups then as a class. How long should your answers be? This depends, but answers must show that you gave each question a lot of thought and responded accordingly. Some can be answered with a brief sentence, while others require more. For example, if you answer question one of question set one ("How is social science research done?"), by stating that "It seeks to understand how humans operate as social animals without overgeneralizing on the basis of personal experience." --that would be a good start and would merit a score of 6/10, but a few more sentences, including an example, would be required to demonstrate that you understand this way of knowing and nudge your mark closer to 10/10. In some cases, there will be no single or clear answer. In answering these questions, do not cut and paste text from the readings, get assistance from a classmate or former students, or any artificial intelligence applications; rather, answer the questions in your own words. In evaluating your question sets, first we will determine whether you have answered all of the questions assigned. If, for example, you answered only 8 of 11 assigned questions, we will deduct 27% (3/11) from your overall score. Second, we will carefully assess your work on 2 to 5 of the questions. Assuming you have completed all of the assigned questions, your work on the questions we carefully assess will determine your overall question set score. Your answers to the weekly question sets must be uploaded to [D2L>Dropbox>Question Sets>Question Set #X](#) no later than 9:00 AM on Friday.

- Participation in class discussions & labs (12%): The first hour of each class meeting is dedicated to a discussion of the class material. During this time, I will rarely lecture; rather, I will lead discussions of the material you covered and questions you answered in your weekly question sets. This generally will mean that I will ask you to think about a question, have you discuss the question with your lab partners for a few minutes, then share what you and your group concluded with the rest of the class. Hence, it's in your best interest to come to class prepared. Note that if you feel awkward chatting with those sitting around you and your class at large, you are not alone. I do this not to torment you but because this method has been found to improve student engagement, differentiate instruction, and give you more of a voice in a large class where you otherwise might have none. Furthermore and likely counterintuitive to some, [talking to strangers is good for your mental health](#) (yes, [this is true even if you are shy](#)). As your participation is a critical part of the learning process, you must arrive on time and be prepared for discussion. **If you miss 5-9 minutes of class by arriving late or leaving early** without permission from your TA or me, your maximum participation score for that day will drop by 10%. **If you arrive/leave 10-14 minutes late/early**, your score will automatically drop

20%. If you arrive/leave 15 minutes late/early, you will earn a zero for participation for that day.

- Lab work (24%): Weekly, we will evaluate your work in the lab via the lab report that you turn in at the end of each lab. Your TA will generally collect your lab each week and return it to you in class the following week. To evaluate your work, your TA will first check to see that the lab is complete. If the lab has 18 questions and you've answered only 15, we will deduct 17% (3/18) from your mark. Your TA will then mark those questions that require a synthesis of your findings. Assuming that you answer all of the questions, your TA's assessment of these questions will determine your overall mark on your lab report. For *any* credit, your lab report must be clearly written, exhibit intellectual investment, critical thinking, be supported with findings from your lab work where required, and be written in *your own words*, not those of your lab partners.

- Primate ethology lab (5%): This lab will be completed on your own time at the Calgary Zoo with the purpose of providing you with exposure to the study of non-human primate behavior. The observation of the nonhuman primates will generally require 3-5 hours at the zoo. Your primate ethology lab report must be uploaded to [D2L>Dropbox>Question Sets>Primate ethology lab](#) no later than 9:00 AM on Friday, November 3.

Your final grade will be calculated as follows:

Item	Weight
Lab practicals	36%
Weekly question sets	23%
Class participation	12%
Lab reports	24%
Primate ethology lab	5%

Missed lab practicals, late lab reports, or question sets cannot be made up without the approval of the instructor. Work in this course may only be deferred in the case of serious illness or medical emergency, religious observance, or domestic affliction (<https://www.ucalgary.ca/registrar/exams/deferred-final-exams>). Upon submitting a request for a makeup lab practical or extension for a missed lab report or question set, students may be asked to provide supporting documentation for an exemption/special request. This may include, but is not limited to, a prolonged absence from a course where participation is required, a missed course assessment, a deferred examination, or an appeal. Students are encouraged to submit documentation that will support their situation. Supporting documentation may be dependent on the reason noted in their personal statement/explanation provided to explain their situation. This could be medical certificate/documentation, references, police reports, invitation letter, or a statutory declaration, etc. The decision to provide supporting documentation that best suits the situation

is at the discretion of the student. Students cannot be required to provide specific supporting documentation, such as a medical note. Falsification of any supporting documentation will be taken very seriously and may result in disciplinary action through the Academic Discipline regulations or the Student Non-Academic Misconduct policy.

Students who miss a lab practical, weekly question set, or lab report have up to **48 hours** to contact the instructor to ask for a makeup lab practical or to defer turning in the weekly question set or lab report. Students who do not schedule a makeup lab practical, weekly question set, or lab report with the instructor within this 48-hour period forfeit the right to a makeup practical or to turn in a late question set or lab report and will receive a mark of zero on the lab practical, weekly question set, or lab report. Once approved by the instructor, the student must upload their **missed weekly question set, or lab report to D2L within one week of the original weekly question set or lab report due date**. Once approved by the instructor, the student must write the **makeup lab practical within two weeks of the missed lab practical** on a day/time scheduled by the makeup exam invigilators in the Department of Anthropology and Archaeology. **Makeup lab practicals will be 100% essay format and may use illustrations of lab material as opposed to the actual lab materials and may differ significantly in content** from the regularly lab practical.

Should a student request to defer term work exceed the end of the term, they must complete a Deferral of Term Work form and submit it to the Office of the Registrar. The deferral will be recorded on the student record. Deferrals are granted at the discretion of the Dean or designate and are normally granted for 30 days beyond the last day of the term. Should circumstances warrant, the maximum time that may be granted for a deferral of term work is one additional term. Approved extensions must be sent to the Office of the Registrar. Application information is available at: <https://www.ucalgary.ca/registrar/student-centre/student-forms>. Deferral of the registrar-scheduled final exam requires Registrar approval (<https://www.ucalgary.ca/registrar/exams/deferred-final-exams>).

Reappraisal of Graded Term Work: <http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

Reappraisal of Final Grade: <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

Department of Anthropology and Archaeology Grading Scheme:

A+	95 – 100%	B+	80 – 84.9%	C+	67 – 70.9%	D+	55 – 58.9%
A	90 – 94.9%	B	75 – 79.9%	C	63 – 66.9%	D	50 – 54.9%
A-	85 – 89.9%	B-	71 – 74.9%	C-	59 – 62.9%	F	< 50%

No extra credit or 'make up' work is available in this class. A passing grade is not required on any particular component for the student to pass the course as a whole; that is, a student may fail, for example, Lab Practical #1 or any other component and, assuming their overall average percentage earned for the course is above 50%, they will pass the course.

Land Acknowledgement

The University of Calgary, located in the heart of Southern Alberta, both acknowledges and pays tribute to the traditional territories of the peoples of Treaty 7, which include the Blackfoot Confederacy (comprised of the Siksika, the Piikani, and the Kainai First Nations), the Tsuut'ina First Nation, and the Stoney Nakoda (including Chiniki, Bearspaw, and Goodstoney First Nations). The City of Calgary is also home to the Métis Nation of Alberta Region 3.

Acknowledgment and Respect for Diversity

The Department of Anthropology and Archaeology views diversity of identity as a strength and resource. Your experiences and different perspectives are encouraged and add to a rich learning environment that fosters critical thought through respectful discussion and inclusion.

COURSE POLICIES

1. My teaching philosophy¹: In short, I encourage students cultivate their sense of skepticism about the status quo, to make connections among seemingly disparate phenomena, and to see things from another's point of view. I have no interest in telling you what you must think. Instead, I will provide evidence that you should consider [skeptically](#). Moreover, I do not seek to provide you with an intellectually safe space, but to challenge you with new ideas with which you will have to engage to reach your own, informed conclusions. The free exchange of ideas is a fundamental part of democratic society. That said, civility and mutual respect are vital to all of us, and freedom of expression does not mean the freedom to harass or threaten others. I consequently expect you to be engaged in evidence-based, rigorous debate, discussion, and even disagreement with one another and me. At times, this may challenge you and even cause discomfort. Indeed, as we will consider some of the most horrific acts of inhumanity that have arisen due to human variation, such as sexual and physical violence and assault, racism, sexism, discrimination based on sexual orientation, genocide, war, the physical and psychological abuse of children, suicide, and drug and alcohol abuse, this course should be unsettling. Our consideration of these domains is not gratuitous: a failure to understand the basis and potential for such acts puts us at risk of repeating them.

2. Discussion & Lab: In order to meet the goals of the course you have to come regularly to class and ON TIME. This is particularly important given the discussions we'll hold in the first hour of the class meeting. Be prepared by reading what is assigned for the day. You are responsible for lecture material and any announcements concerning changes in schedule, etc.

¹ For more on my teaching philosophy, please see: [D2L > Content > Course Outline > Teaching Philosophy](#)

Please note that in those classes where I give lectures, they are generally not a summary of the material presented in the assigned materials.

3. Flipped classroom: All of us are familiar with traditional teaching in which the teacher talks at students, with, perhaps a bit of interaction from the students. This course takes a different approach. Our discussions will use [flipped classroom](#) approach. In short, this means that while I may provide recorded lectures for you to watch prior to the class, I will rarely lecture in the class. Instead, you should arrive prepared to discuss the concepts covered in the weekly question set. In class discussions, I will endeavor to gauge your understanding of the material, the intellectual effort you've made to master it, and to develop your critical thinking skills. It's sometimes messy and may leave you with more questions than you started. I take this approach as data obtained in a wide range of academic settings and a wide range of academic disciplines show that learning gains nearly triple with an approach that focuses on the student and interactive learning ([Fagan et al. 2002](#), [Lasry et al. 2008](#)) . As such, dive into the assigned materials and do the required intellectual heavy lifting before showing up in class each week.

4. How can you get in touch with the TAs or me? If you have a question, it may already be answered in this syllabus, course assignment documents, course rubrics, or D2L. Check there first. If you have questions about the class material *that are not answered in these domains*, please contact me. If you have questions about technical aspects of the class that are not answered elsewhere, please contact a TA. If you have a question about a mark earned, arrange to meet with me in person to discuss this. If you would like to meet with me, please suggest some possible times when writing to me. When sending your TA or me an email, please write 'ANTH 350' in the 'Subject' portion of the email. In the body of your message please provide your first and last name and use proper, not text-message, grammar. By identifying the subject of your email and writing a clear message, you will help your TA and me to reply more efficiently to your emails. We will do our best to reply within one business day to your message.

5. What does my grade mean? Per the [University of Calgary Calendar](#), an "A" is earned for "excellent-superior performance, showing comprehensive understanding of subject matter". Superior performance is, by definition, rare; that is, superior is defined as "highest in quality". More common is the grade of "B" which is earned for "clearly above average performance with knowledge of subject matter generally complete". More common still is the grade of "C" which is earned for a "satisfactory - basic understanding of the subject matter". If you require clarification on letter grade assignments, please contact me within the first two weeks of the semester. Keep in mind that, you have paid for the opportunity to learn, not a grade. As such, my teaching assistants and I do our utmost to ensure that you have the best possible learning opportunity in this course.

6. Office Hours: I enjoy conversations with students. Whether you would like to discuss in greater detail something that was touched on in class or the assigned material or are having difficulty with some aspect of the course, both your TAs and I are happy to meet with you.

7. Recording class lectures: Unless you have my permission to do so via an Academic Accommodation, you may not record our class lectures.

UNIVERSITY POLICIES

ACADEMIC ACCOMMODATIONS

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit <https://live-ucalgary.ucalgary.ca/student-services/access>. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor or the Department Head. The full policy on Student Accommodations is available at <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>.

ACADEMIC INTEGRITY POLICY

Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. The University Calendar includes a statement on the principles of conduct expected of all members of the university community (including students, faculty, administrators, any category of staff, practicum supervisors, and volunteers), whether on or off university property. This statement applies in all situations where members of the university community are acting in their university capacities. All members of the university community have a responsibility to familiarize themselves with the principles of conduct statement, which is available at: www.ucalgary.ca/pubs/calendar/current/k.html.

ACADEMIC MISCONDUCT

The University of Calgary is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect.

Academic dishonesty is not an acceptable activity at the University of Calgary, and students are **strongly advised** to read the Student Misconduct section in the University Calendar at: www.ucalgary.ca/pubs/calendar/current/k-3.html. Often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are (1) presenting another student's work as your own, (2) presenting an author's work or ideas as your own without adequate citation, and (3) using work completed for another course. Such activities will not be tolerated in this course, and students suspected of academic misconduct will be dealt with according to the procedures outlined in the calendar at: <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-academic-misconduct-procedure>

For students wishing to know more about what constitutes plagiarism and how to properly cite the work of others, the Department of Geography recommends that they attend Academic

Integrity workshops offered through the Student Success Centre:

<https://www.ucalgary.ca/student-services/student-success/learning/academic-integrity>

INSTRUCTOR INTELLECTUAL PROPERTY

Course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the professor(s). These materials may NOT be reproduced, redistributed or copied without the explicit consent of the professor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing. Information on Instructor Intellectual Property can be found at

<https://www.ucalgary.ca/legal-services/university-policies-procedures/intellectual-property-policy>

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

COPYRIGHT LEGISLATION

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks, etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

SUPPORTS FOR STUDENT LEARNING, SUCCESS, AND SAFETY

Please visit the Registrar's website at: <https://www.ucalgary.ca/registrar/registration/course-outlines> for additional important information on the following:

- Wellness and Mental Health Resources
- Student Success Centre
- Student Ombuds Office
- Student Union (SU) Information
- Emergency Evacuation/Assembly Points
- Safewalk

TENTATIVE CLASS SCHEDULE

Date	Lab	Topic	Reading ¹
Sep. 8	1	Physiological homeostasis, stress, science, and human variation	your syllabus! Zimmer & Emlen (2016)- Ch. 1
Sep. 15	2	Forces of Evolution: Natural Selection	Zimmer & Emlen (2016)- Ch. 2, Creation (2009 film), HHMI (ND, finch video)
Sep. 22	3	Natural Selection (cont.) & Molecular Genetics	Bragg (2001)-podcast, Zimmer & Emlen (2016)- Ch. 5, HHMI (ND)- finch video, film: "Creation"
Sep. 29	4	Population genetics & Inheritance of traits	Lewis (2020)- Ch. 15
Oct. 6	5	Forces of Evolution: Hardy-Weinberg, Genetic Drift (Founder Effect)	BBC & Rosling (2010), Smith (2014), Anywhere Math (ND), article of choice
Oct. 13	6	Lab Practical # 1 (covers Labs 1-5); Human skeletal biology I: cranium	Grimaldi, J (2009), BBC (2010), Salt (2009), Written in Bone, Keenleyside & Lazenby (2015)
Oct. 20	7	Human skeletal biology II: post-crania	Keenleyside & Lazenby (2015), Barry (2017), 2 articles of choice
Oct. 27	8	Human skeletal biology III: aging & sexing skeletons, skeletal lesions	Preston (2014), Thompson (2015), articles of choice
Nov. 3	9	Lab Practical #2 (covers Labs 6-8); Primatology- You go to the zoo on your own any time prior to Lab 9. When we meet for Lab 9, we will discuss your findings.	Williams (2010)- Ch. 5, Marks (2018)
Nov. 10	10	Paleoanthropology: Oligocene to Pliocene	First Primates (2008), Marks (2018)
Nov. 24	11	Paleoanthropology: Genus Homo	Your Inner Monkey (2014), Wilson (2003), Warinner (2013)
Dec. 1	12	Lab Practical # 3 (covers Labs 8-11 and evolutionary mechanisms considered in Class 3/Lab 2); Human Biology - Anthropometry & Epi-Info	Keenleyside & Lazenby (2015), Wilson (2018)

¹ Details concerning the assigned readings, podcasts, and videos can be found in the Question Sets for each week in D2L. Readings, podcasts, and videos assigned may change during the semester if I find a better source. Both the Question Sets and your labs will be posted in D2L at least one week prior to each lab. Note that **you must read the lab for each week prior to coming to class**. It will be obvious to your TA if have not and will compromise your participation mark for the class.

IMPORTANT DATES

M Sept 4	Labour Day, No Classes
T Sept 5	Start of Classes
R Sept 14	Last day to drop a class without a financial penalty
F Sept 15	Last day to add or swap a course
F Sept 22	Fee payment deadline for Fall Term full and half courses.
S Sept 30	National Truth and Reconciliation Day
M Oct 9	Thanksgiving Day, No Classes.
M Nov 13	Remembrance Day Observance
Nov 12-18	Reading Break. No classes.
W Dec 6	Fall Term Lectures End. Last day to withdraw with permission from Fall Term half courses.
Dec 9-20	Fall Final Exam Period.
Dec 25-31	Holiday Observance, University Closed.

<https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html#fall2017>