



Basic Course Information

Semester:	Fall 2023	Instructor Name:	Dr. Daniel Gilison
Course Title & #:	Human Genetics – BIOL 150	Email:	daniel.gilison@imperial.edu
CRN #:	11055	Webpage (optional):	http://www.imperial.edu/students/canvas
Classroom:	2732	Office #:	2770
Class Dates:	8/14 – 12/9	Office Hours:	M 2:30-3 PM (2770) T 12-1 PM (2711) W 10:30-11 AM (2770) R 9-11 AM (Zoom)
Class Days:	MW	Office Phone #:	(760) 355-5759
Class Times:	11:20 AM – 12:45 PM	Emergency Contact:	(760) 355-5759 or daniel.gilison@imperial.edu
Units:	3	Class Format/Modality:	Face-to-face

Course Description

A one semester course examining genetics from a human perspective. Discussion of pattern of inheritance, human genetic diseases and disorders, and the application of genetic technologies in other organisms for human use. (CSU) (UC credit limited. See a counselor.)

Course Prerequisite(s) and/or Corequisite(s)

Successful completion of Intermediate Algebra or appropriate placement as defined by AB705.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to: Answer exam questions that deal with population genetics. (ILO5)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Explain the function of cells and cell organelles.
2. Understand the patterns of Mendelian inheritance and analyze pedigrees.
3. Explain and give examples of exceptions to standard Mendelian inheritance.
4. Describe how genes are involved in sex determination.
5. Give examples of genetic traits caused by multiple genes, and explain how they are inherited.
6. Describe the structure of DNA and explain how DNA replication occurs.
7. Understand and describe the processes of transcription and translation.
8. Explain what causes DNA to mutate, and how gene mutations cause disease.
9. Describe chromosome structure, explain how chromosomal abnormalities occur, and give examples of diseases caused by chromosomal abnormalities.
10. Explain population genetics, and explain how the genetics of a population can be changed.
11. Understand the genetic basis of cancer.
12. Explain the current genetic technologies used in labs and in agriculture.
13. Describe the different ways to do genetic testing, and understand the field of genetic counseling.
14. Understand the field of genomics, including the human genome project.



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Textbooks & Other Resources or Links

Human Genetics: Concepts and Applications, 13th edition. Lewis. ISBN 9781260240894

Course Requirements and Instructional Methods

1. There will be **4** exams, worth **100 points** each (**400 points** total). Exams will consist of multiple choice/matching/true-false questions, and short answer questions. Figures from the lectures and textbook will appear on the exams. There will be no make-up exams, except for extreme circumstances. If you have a valid, documented reason for missing an exam, it is **your responsibility** to tell me about it and provide valid documentation **as soon as possible**, otherwise you will not have the opportunity to make up the exam, and will be given a **zero** for that exam.
2. There will be **11** homework assignments worth **160 points** total. Homework cannot be made up, except for extreme circumstances.
3. There will be **1** oral report worth **40 points**. This will be a 5-minute presentation on a genetics topic found in media related to the topics that we cover in class.
4. There will be **4 on-line** review quizzes for extra credit and they will be due on the date in the schedule listed at 11:59 PM. **Review quizzes will be found on the CANVAS site under the Modules link.**
5. Spelling and grammar count on all written assignments! You will lose up to **20% of the points** on each assignment if you have excessive spelling or grammatical errors.
6. There may be extra credit available on some assignments.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Course Grading Based on Course Objectives

4 exams	=	400 points
11 homework assignments	=	160 points
Oral report	=	40 points

Total	=	600 points

A	540 - 600 points
B	480 - 539 points
C	420 - 479 points
D	360 - 419 points
F	0 - 359 points

Artificial Intelligence – AI and Academic Honesty

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the



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course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Course Attendance Policies

- A student who fails to attend the first meeting of a class will be dropped by the instructor as of the first official meeting of that class.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- Only bottled water allowed in the classroom.
- **Electronic devices must be always turned off!** Ringing cell phones are a distraction both to me and to other students in the class. If you must use your electronic device during class, please take it outside, and then come back in when you are done. You should not be checking/using your electronic devices during lectures. If you are caught, you may be asked to leave for the day.
- **No talking during class!** Talking is a distraction to me and other students in the class. If you have questions during the lecture, please ask me! If you are caught talking, you may be asked to leave for the day.
- Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.
- The deadline for dropping a course without appearing on transcript is **Sunday, August 27**.
- The deadline for dropping a full-term class is **Saturday, November 4**.

Additional Help

1. Make sure you come on time to all lectures! Arriving late or missing a class for any reason (excused or unexcused) can cause you to miss lecture material, and will only put you at a disadvantage in this class.
2. Make sure you know what will be happening each day for class! Keep the class schedule handy.
3. Skim through or read the chapter before coming to lecture. You will have a general feel for the subject matter, which will help your understanding of the material during lecture
4. Pay attention during lectures! I will say things during lecture that are not written on the PowerPoint slides or the board that will be on the exams. Make sure you take good notes during lecture. Don't just mindlessly write down word-for-word what is on the slides. Listen to what I have to say, and take notes on that also!
5. Study, study, study! You should spend at least 4 hours studying for this class each week. You should study in an area where there are no distractions (television, radio, computers, music, other people, etc.). However, you should also spend time studying with other students (online, of course!). Nothing makes you learn the material better than having to explain it to someone else!
6. Spend time doing the homework! It is there to help you learn the material, so not doing it, or waiting until the night before to start the homework will only hurt your grade in the class.
7. Don't cram! It is better to spend some time each day studying as compared to saving it all until the night before the exam.
8. It is not enough just to memorize facts! On the exams, you will be responsible for using the information learned and applying it to new situations. You need to understand what these facts mean!
9. When answering homework/exam questions do not overcomplicate the question! Students tend to think that questions are more difficult than they really are. Just answer the question being asked! However, make sure that you read the questions very carefully to make sure that you are starting the problem correctly!

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.



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Anticipated Class Schedule/Calendar

Week	Monday	Wednesday
8/14	Introduction to the class	Chapter 1 – Overview of Genetics
8/21	Chapter 2 – Cells	Chapter 3 – Meiosis and Development HW 1 due – Ch. 1
8/28	Chapter 9 – DNA Structure and Replication HW 2 due – Ch. 2/3	Chapter 10 – Gene Action: From DNA to Protein
9/4	LABOR DAY – NO CLASS	Chapter 4 – Single-Gene Inheritance HW 3 due – Ch. 9/10 Exam 1 Review Quiz due
9/11	Exam 1 (Ch. 1-3, 9, 10)	Chapter 4 – Single-Gene Inheritance
9/18	Chapter 4 – Single-Gene Inheritance	Chapter 5 – Beyond Mendel’s Laws Oral report topics due
9/25	Chapter 5 – Beyond Mendel’s Laws	Chapter 6 – Matters of Sex HW 4 due – Ch. 4
10/2	Chapter 12 – Gene Mutation	Chapter 13 – Chromosomes HW 5 due – Ch. 5/6
10/9	Chapter 7 – Complex Traits HW 6 due – Ch. 12/13 Exam 2 Review Quiz due	Exam 2 (Ch. 4-6, 12, 13)
10/16	Chapter 8 – Genetics of Behavior	Chapter 15 – Constant Allele Frequencies HW 7 due – Ch. 7/8
10/23	Chapter 16 – Changing Allele Frequencies Oral report summary due	Chapter 20 – Cancer Genetics HW 8 due – Ch. 15/16
10/30	Chapter 21 – DNA Technologies HW 9 due – Ch. 18 Exam 3 Review Quiz due	Exam 3 (Ch. 7, 8, 15, 16, 20)
11/6	Chapter 21 – DNA Technologies	Chapter 22 – Genetic Testing and Treatment
11/13	Chapter 22 – Genetic Testing and Treatment HW 10 due – Ch. 21	Chapter 14 – Genomes
11/20	THANKSGIVING BREAK – NO CLASS	THANKSGIVING BREAK – NO CLASS
11/27	Oral reports	Oral reports HW 11 due – Ch. 22/14
12/4	Oral reports Exam 4 Review Quiz due	Exam 4 (Ch. 21, 22, 14)