

Imperial Valley College Course Syllabus – BIOL 150 – Human Genetics

| Basic Course Information | | | |
|--------------------------|----------------------------------|--|--|
| Semester | Fall 2019 | Instructor Name | Dr. Daniel Gilison |
| Course Title & # | Human Genetics – BIOL 150 | Email | daniel.gilison@imperial.edu |
| CRN # | 11619 | Webpage | http://imperial.blackboard.com |
| Room | 2721 | Office | 2770 |
| Class Dates | 8/19-12/14 | Office Hours | MTWR 1-2 PM |
| Class Days | MW | Office Phone # | (760) 355-5759 |
| Class Times | 9:40-11:05 | Office contact if student will be out or emergency | (760) 355-5759 or daniel.gilison@imperial.edu |
| Units | 3 | | |
| 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)

Appropriate placement as defined by AB705; or MATH 098 or MATH 091 with a grade of “C” or better.

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.

Textbooks & Other Resources or Links

- Human Genetics: Concepts and Applications, 11th edition. Lewis.

Course Requirements and Instructional Methods

1. There will be **4 exams**, worth **100 points** each (**400 points** total). Exams will begin at the start of class. 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. If you are late to the exam, you will not be given extra time to finish it. 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 by the **next class meeting**, 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 **9 homework assignments** worth **160 points** total. Homework assignments are due at the **start** of the class. Homework cannot be made up, except for extreme circumstances. **I do not** accept late assignments! If you are late to class (once the lecture begins), you will not get credit for your homework assignment!
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. 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.
5. There will be extra credit available during the review sessions, and on some assignments.

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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 |
| 9 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 |

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See [General Catalog](#) for details.
- 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. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and 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.

Classroom Etiquette

1. Only bottled water allowed in the classroom.
2. **Cell phones must be turned off at all times!** Ringing cell phones are a distraction both to me and to other students in the class. If you must use your cell phone during class, please take it outside, and then come back in when you are done. You should not be checking your phone, or texting, during lectures. If you are caught checking your phone, or texting, during class, you may be asked to leave for the day.
3. **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.
4. Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.
5. The deadline for dropping a course without appearing on transcript is **Monday, September 2**.
6. The deadline for dropping a full-term class is **Saturday, November 9**.

Academic Honesty

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 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.

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 class. 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 4-5 hours studying for this class each week. You should study in an area where there are no distractions (television, radio, computers, iPods, other people, etc.). However, you should also spend time studying in groups. Nothing makes you learn the material better than having to explain it to someone else!
6. Don't cram! It's better to spend some time each week studying as compared to saving it all until the night before the exam.
7. 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!
8. 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!

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services \(DSP&S\)](#) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The [IVC Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- **CANVAS LMS.** Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: [Canvas Student Login](#). The [Canvas Student Guides Site](#) provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- **Learning Services.** There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- **Library Services.** There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center.** A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the [IVC Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- **Mental Health Counseling Services.** Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the [IVC Mental Health Counseling Services](#) at 760-355-6310 or in the building 1536 for appointments or more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the [IVC General Catalog](#).

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Anticipated Class Schedule

Tentative Class Schedule (Mon/Wed 9:40 – 11:05 AM)

| Week | Monday | Wednesday |
|----------------|---|---|
| 8/19-21 | Introduction to the class | Chapter 1 – Overview of Genetics |
| 8/26-28 | Chapter 2 – Cells | Chapter 3 – Meiosis and Development HW 1 due – Ch. 1 |
| 9/2-4 | LABOR DAY – NO CLASS | Chapter 9 – DNA Structure and Replication HW 2 due – Ch. 2/3 |
| 9/9-11 | Chapter 10 – Gene Action: From DNA to Protein | Chapter 4 – Single-Gene Inheritance HW 3 due – Ch. 9/10 <u>Exam 1 Review Quiz due</u> |
| 9/16-18 | Exam 1 (Ch. 1-3, 9, 10) | Chapter 4 – Single-Gene Inheritance |
| 9/23-25 | Chapter 4 – Single-Gene Inheritance | Chapter 5 – Beyond Mendel’s Laws |
| 9/30 – 10/2 | Chapter 6 – Matters of Sex HW 4 due – Ch. 4 | Chapter 12 – Gene Mutation |
| 10/7-9 | Chapter 7 – Multifactorial Traits HW 5 due – Ch. 5/6/12 <u>Exam 2 Review Quiz due</u> | Exam 2 (Ch. 4-6, 12) |
| 10/14-16 | Chapter 8 – Genetics of Behavior | Chapter 13 – Chromosomes |
| 10/21-23 | Chapter 14 – Constant Allele Frequencies HW 6 due – Ch. 7/8 | Chapter 15 – Changing Allele Frequencies |
| 10/28-30 | Chapter 18 – Genetics of Cancer HW 7 due – Ch. 13/14/15 <u>Exam 3 Review Quiz due</u> | Exam 3 (Ch. 7, 8, 13, 14, 15) |
| 11/4-6 | Chapter 19 – Genetic Technologies | Chapter 19 – Genetic Technologies |
| 11/11-13 | VETERAN’S DAY – NO CLASS | Chapter 20 – Genetic Testing and Treatment HW 8 due – Ch. 18/19 |
| 11/18-20 | Chapter 20 – Genetic Testing and Treatment | Chapter 22 – Genomics |
| 11/25-27 | THANKSGIVING BREAK – NO CLASS | THANKSGIVING BREAK – NO CLASS |
| 12/2-4 | Oral reports HW 9 due – Ch. 20/22 | Oral reports |
| 12/9-11 | Oral reports <u>Exam 4 Review Quiz due</u> | Exam 4 (Ch. 18-20, 22) |

Veteran's Center

The mission of the [IVC Military and Veteran Success Center](#) is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in [Building 600 \(Office 624\)](#), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

Online Netiquette

What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.

Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].