
Human Genetics: BSCI 30050

General Information

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|-----------------------|---|
| Instructor: | Dr. Kim R. Finer |
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| Phone: | 330-244-3434 |
| Office:H | 434 Main |
| Office Hours: | Tues., Thurs., 9:30 AM-10:30AM Mon., Wed., 2:30 PM-3:00 PM, and as arranged |
| Class Time: | Mon, Wed. 3:30PM-4:45PM |
| Course Credit: | 3 hours |

Course Description

This course is designed to introduce the student to the discipline of Human Genetics by interweaving classical genetic concepts with major genetic issues including genetic diversity, the human genome, biotechnology and genetic disorders. It is hoped that through mastery of course content and completion of course activities, students will gain a critical appreciation of how scientists approach and solve problems. Following completion of the course, students will have the tools to make informed decisions regarding the impact of genetic advances on society as well as their own personal lives.

Text

Required: *Human Heredity, Principles and Issues*, Fifth Edition, 2000, Michael Cummings, Brooks/Cole Thomson Learning.

Textbook web site:

<http://www.brookscole.com/biology/member/student/humheredity/index.html>

Class Requirements

Attendance is assumed. Students are responsible for lecture materials missed in their absence. Missed exams may be made up only if the instructor has been informed of the absence and found the excuse acceptable **on** or **before** the day of the exam. Make-up exams will be taken (regardless of date originally scheduled) during the last week of classes in the Testing Center (lower level, Library). It is necessary to complete **all** assignments to receive a passing grade in this course.

Course Goals and Objectives

The objective of the student will be to master the following classical genetic concepts: DNA and RNA replication, chromosomal structure, cell division, Mendelian inheritance, sex linkage, mutation, gene mapping, cloning, and gene regulation. These concepts will then be applied to specific genetic topics. To meet the above objective it will be the goal of the student to master the material such that he or she will be able to answer the review questions found at the end of each chapter in the book.

Lecture Schedule

| Date | Topic | Reading |
|---------|--|----------------|
| | | |
| Jan. 14 | Introduction, Eugenics | Hand-out |
| 16 | History, DNA Structure and Function | 1,8 |
| 21 | MLK Holiday | |
| 23 | Transcription and Translation | 9 |
| 28 | Translation Cont., Chromosomes, Structure | 9, 2 |
| 30 | Mitosis and Meiosis | 2, |
| Feb. 4 | Mitosis and Meiosis, /case | 2, |
| 6 | Mendel, Principles and Crosses | 3, |
| 11 | Mendel Continued | 3, |
| 13 | Autosomal inheritance, Pedigrees | 4 |
| 18 | Exam I | |
| 20 | Sex Linkage, Pedigrees | 4 |
| 25 | Sex Linkage | 4 |
| 27 | Gene Mutation | 11 |
| Mar. 4 | Chromosomal Aberrations | 6 |
| 6 | Chromosomal Aberrations | 6 |
| 11 | Sex determination, case | 7 |
| 13 | Exam II | |
| 18- | Gene Mapping | 12,13 |
| 20 | Gene Mapping, Technology | 12,13 |
| 25, 27 | <i>Manipulation of the genetic material</i> | 12, 13 |
| April 1 | Spring Break | |
| 3 | Human Genome Project | 13 |
| 8 | EXAM III | |
| 10 | Human Genome Project | 13, Handout |
| 15 | Human Genome Project, Genetic testing, Ethics | 19 |
| 17 | Regulation of Expression, Cell Cycle, Cancer | 14 |
| 22 | Cancer | 14 |
| 24 | Histocompatibility, Blood Groups | 15 |
| 29 | Human Biochemical Genetics | 10 |
| May 1 | Human Biochemical Genetics | 10 |
| 8 | Final Exam, 3:30 PM | |

Grading

| | |
|---|------------|
| Mini Exam I | 50 points |
| Mini Exam II | 50 points |
| Exam III | 80 points |
| Final Exam | 100 points |
| Portfolio assignment | 70 points |
| Activities (cases/short papers/problems) | 70 points |
| Attendance and class participation | 10 points |
| Total | 430 points |

Final Grade Determination

| | |
|---------|---|
| 90-100% | A |
| 80-89% | B |
| 70-79% | C |
| 60-69% | D |
| 0-59% | F |

Final Grades will not be curved. The grade you receive will be the grade you **earn**.

Students with Disabilities

In accordance with University Policy, if you have a documented disability, you may request accommodations to obtain equal access and to promote your learning in this class. Please contact the Office of Student Services to acquire the name of the campus representative to whom documentation should be submitted. After your eligibility for accommodations is determined, you will be given a letter which, when presented to instructors, will help us know best how to assist you.

Withdrawal Policy

Refer to the KSU Undergraduate Catalog for information .
Course withdrawal deadline: Mar. 23, 2002

Academic Misconduct Policy

The use of intellectual property of others without attributing them is considered a serious academic offense. Cheating or plagiarism will result in receiving a failing grade for the work or the course. Repeat offenses will result in dismissal from the University.

Beeper, Telephone, and Pager Policy.

As a courtesy to your fellow classmates, I request that you turn off **all electronic devices** before you enter the classroom. If an emergency arises outside of the classroom that affects you, have your contacts call the switchboard (330-499-9600) and tell them it is an emergency. Student Services will immediately send someone to the classroom for you. If by any chance, you forget to turn off your telephone or pager, please **exit the classroom with the device as soon as possible** so as not to disturb the rest of the class.

Caveat

This syllabus serves only as a guide. Dates, times, and topics may change due to unforeseen circumstances.

Tips for Being Successful in this Course.

1. Sit in the front.
2. Attend class. While an emergency may arise during the semester which may cause you to miss class, frequent absenteeism is directly reflected in test grades. Don't rely on someone else's notes. You need to be in class.
3. Work problem after problem after problem. Attempt all of the problems at the end of the chapters. This is the best way to be sure you have mastered the material.
4. Read the book chapter within a day of the class lecture. Use the book to help you understand the material and fill in any holes in your notes. Better yet, rewrite your notes using the lecture and the book to organize your thoughts. If you need additional help come see me during office hours.
5. Use the textbook website. There are some interactive activities that will not only help you learn but are actually fun!
5. Do not wait until the night before the exam to begin your preparations for the test. You simply cannot learn this material in a short period of time. Also do not wait until the day of the test to visit me during office hours. If you are having difficulty understanding the concepts see me as soon as possible.
6. Accept responsibility for your education. I will give you 100% effort in the classroom, and to be successful, you must do the same.