Biology 122: Introduction to Human Genetics
Summer 2010 Syllabus & Schedule

Contact information:

Dr. Christine Andrews

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Office hour: M & W 12:15-1:00
130 Heustis

Logistics:

Lecture: 166 Lawrence
M-TH 10:00-11:50

Discussion: 130 HUE
M&W 1:00-1:50 or 2:00-2:50

Textbook: Human Genetics (9th Edition) by Ricki Lewis

Course Description & Objectives

Why are my son's eyes blue, when my husband and I have brown eyes? Will I get breast cancer since my grandmother did? Is my sloppiness inherited from my father and my inability to spell from my mother and if so why didn't I get my mother's neatness and my fathers spelling ability? We will try to answer these questions and many others during this course by examining the role genetics plays in making us who we are.

The first half of the course will deal mostly with cellular genetics. We will discuss DNA, Genes, Chromosomes and how all of these are replicated and transmitter. We will also explore the genetics of cancer.

The second half of the course will deal more with inheritance patterns and genetic applications including genetics of behavior, hereditary diseases and disorders and a look at recent scientific developments that expand genetics role into forensics, drug development and GMOs. We will also explore the role of genetics in society. Throughout the course we will look at ethical issues that arise from our continually increasing understanding and use of genetics in health care and elsewhere.

If there is any area you are particularly interested in please let me know - I might try and include it.

Academic Honesty

Academic dishonesty includes various forms of "cheating" (e.g. copying another person's answers to exam or lecture questions, plagiarism, etc.) and will not be tolerated. For the definition of cheating and its penalties, consult the University of Oregon Student Conduct Code (http://darkwing.uoregon.edu/~conduct/code.htm).

Students with Disabilities

Students with physical, psychological or learning disabilities are encouraged to contact Disability Services in the Office of Academic Advising (346-3211). If you have a documented disability and anticipate needing accommodations in this course, please get in touch with me as soon as possible. Please request that the Counselor for Students with Disabilities send a letter verifying your disability.

Exams will be approximately 75% multiple choice and 25% short answer/essay (by essay I mean a paragraph not a page). The final will not be cumulative. The exam dates will be Thursday July 29th and Thursday Aug 12th during the normal class period. You will be given the entire 2 hrs but will most likely not need it. If for some reason you must show up late for the exam please make sure and let me know ahead of time so I do not leave before you even get there. If you have a problem with any of the exam dates please see me at the start of the course so we can make other arrangements. I will try and be flexible but not if you come to me the day before the test.

There will be 3 **"Mini" Papers** (one each during week 2, 3, and4). As the title implies these are not 10-20 page research papers that you will be spending weeks on, these are 1.5-3 page papers designed to make you think about a particular aspect of genetics. The topics will: Sexual Reproduction, Pedigrees and Eugenics. I will go into more detail on each, including specific due dates, as they get closer. There will also be an **Extra Credit** one – Genetics in the news, due anytime during the 4 week course, so keep your eyes open for any genetics related news items you might find interesting.

The **Exercises**, of which there are tentatively 5, will be done mostly in the discussion sections and they should result in very little, if any, work outside of class. As such, they can not be made up if you miss them. These will mostly be graded on participation so they should be an easy 50 points just for showing up for the discussion sections.

Grading

	Point Value
2 Exams	200 points (100 Each)
Weekly Mini-Papers	100 points (33 Each)
Exercises	~40 points (10 Each)

Mini-Paper	**Due Date**
Why Sex?	Mon 7/26
Genetics of Magic	Mon 8/9
GATTACA	Thurs 8/12

Final grades: A 90-100%, B 80-89%, C 70-79%, D 60-69%, F <60%. Pluses and minuses will be awarded within each grade class.

Tentative Lecture Schedule

Date	Subject	Readings
M 7/19	Overview, Cells	Chapters 1 & 2
T 7/20	Mitosis, Meiosis and Development	Chapters 2 & 3
W 7/21	DNA	Chapter 9
Th 7/22	Gene Expression and Regulation	Chapter 10 & 11
M 7/26	Mutations and	Chapter 12
T 7/27	Chromosomes	Chapter 13
W 7/28	Genetics of Cancer	Chapter 18
Th 7/29	**Mid-term**	
M 8/2	Mendelain Inheritance and Pedigrees	Chapter 4
T 8/3	Non-Mendelain and Sex-linked Inheritance	Chapter 5 & 6
W 8/4	Genetic Testing and counseling: Probability	Chapter 20 & 16.4
Th 8/5	Movie	
M 8/9	Multifactorial Traits, Behavioral Genetics & Sexuality	Chapter 7, 8 & 6.1
T 8/10	Molecular Biology and Genetic Technology	Chapter 19 & 22
W 8/11	Population Genetics and Forensics	Chapter 14 & 15
Th 8/12	**Final**	

Tentative Discussion Section Schedule

Date	Subject
M 7/20	Introduction
W 7/22	Movie: **Why Sex?**
M 7/27	**Exercise:** DNA Replication and Protein synthesis
W 7/29	Review
M 8/3	**Exercise:** Pedigrees
W 8/4	**Exercise:** Genetic Testing
M 8/10	**Exercise:** Sickle Cell / CF Lab
W 8/12	Review