

Fall 2016

Honors Genetics I Syllabus

Your instructor

Dr. Sharon Thomas

Room: LC110

Web page: <http://sharonthomas.weebly.com/>

email: sthomas@ortn.edu

Main Goals of the course

1. To provide you with the core principles of genetics and molecular biology.
2. To gain higher level thinking skills that are necessary for scientists.
3. To excite you about basic science and its applications.

Expectations

This is NOT a class for passive learners. You are expected to be actively engaged in this course through class discussions, class activities and pre- as well as post-lecture assignments and readings.

It is expected that you will spend several hours reading/working problems associated with each class. If you stay on top of your reading and homework, there will be no need to cram for an exam.

Textbook and Additional Readings

There is no textbook for this course. Readings will be assigned that include primary literature, classic papers and current articles relevant to the lecture topics. Part of a lecture each week will be devoted to discussing this material. Your participation in these discussions will be part of your final grade. In addition, all students need to purchase *The Immortal Life of Henrietta Lacks* by Rebecca Skloot.

There is a very large amount of material covered in this course. Students are expected to have read the material **before** lecture; be prepared to listen, ask questions, and discuss the lecture material.

Lab Fees

Please consider donating \$10.00 for the purchase of lab materials.

Class Attendance

Students are expected to attend and participate in class. You are responsible **for all material and announcements made in class**. You are not responsible for material that was not covered in class, **unless it was specifically assigned**. If you are excessively absent, your class participation grade will reflect those absences.

Grading

Your grade for this course will be determined as follows:

Two exams = (15% each)

One cumulative final exam (15%)

Labs (35%)

Research paper (10%)

Class participation (10%)

Grades will not be assigned for individual exams, only points; you will be able to see how you did from a posted distribution of scores after each test. Final grades will be assigned on the total number of points for the entire semester: A 90-100; B 82-89; C 72-81; D 67-71; F <67

THE TEACHER RESERVES THE RIGHT TO MAKE CHANGES TO THE SYLLABUS, INCLUDING LECTURE TOPICS AND TEST DATES. THESE CHANGES WILL BE ANNOUNCED AS EARLY AS POSSIBLE.

<u>Week</u>	<u>Topic</u>
8/1	Intro to genetics, Cornell Notes, DNA history timeline
8/8	Micropipette skills, pipet by numbers, intro to microbe genetics
8/15	Superbugs, antibiotics, aseptic techniques lab
8/22	Evolution of bacteria, conjugation lecture and lab
8/29	Plasmid mapping (conjugation vs enzymes)
9/5	Linkage and recombination

Future topics include: Mendelian genetics, probability and hypothesis testing, genetic mapping, molecular genetics, repair mechanisms, transposons, gene expression, developmental genetics, sex determination and genetic engineering.