Text: *Human Genetics: Concepts and Applications* (10 e), by Ricki Lewis  
Also recommended for deeper understanding: *Human Evolutionary Genetics* by Jobling, MA et al, ISBN: 0815341857  
And *Human Genetics* (Genetics & Evolution series) by R. Hodge ISBN: 9780816066827

Evaluation:  
Quizzes 10% unannounced (in class)  
Midterms 40%  
July 9 (Dwinelle 155) & July 28 (Dwinelle 155)  
Finals 50%  
August 13, 2015 (Li Ka Shing 245)

Testing will be based on class activities and lecture material, some of which is not in the book.

**TENTATIVE SEQUENCE OF TOPICS**  
Readings in Lewis (chapter or pages; hyphen = “through”)
August 11 Gene therapy and treatment of genetic disease
August 12 Wrapping it all up
August 13 **IN-CLASS FINAL EXAM**

**Note:** If you require special test conditions, obtain a letter from Student Services and give to the instructor before **July 2** to insure that we can accommodate you. If you must miss an exam due to dire emergency, arrange it with the instructor **BEFORE** the exam. **Quizzes occur randomly, and missed quizzes cannot be made up.** It is in your best interest to attend all class meetings. Please be helpful to one another, and do not steal answer keys from the board outside 3007. **I don’t grade on the curve.**

**COURSE OBJECTIVES**

By the end of the 8-week session, each student will be able to . . .

. . . solve a variety of problems.

. . . think more analytically.

. . . construct and analyze pedigrees.

. . . predict results of genetic crosses, determine genotypes and phenotypes of P and F generations, and **explain** unexpected outcomes.

. . . discuss genetic aspects of human evolution, as well as causes and consequences of gene mutation.

. . . design investigations using molecular techniques and **analyze** data from such experiments.

. . . answer questions like . . .

a. Why is calico coat color not usually found in male cats?
b. How can an XY male grow up female?
c. How did humans evolve to be what they are today?
d. What the heck is a “zinc finger”?

. . . and lots of other interesting stuff.

**EXPECTATIONS OF STUDENTS**

1. Keep up with the reading. The course is fast paced, and it’s a good idea to not get behind.
2. Come to class prepared to **think** and **participate** every day.
3. Study a little bit every night and keep current. **There will be several unannounced quizzes.**
4. Work collaboratively with at least one other student in class; help each other learn.
5. Do your own thinking on all quizzes and exams.

**READING**

1. Become familiar with the text, including case studies, appendices, index, etc.; refer to lecture notes often.
2. Create and do problem sets for practice. Do not memorize lists. Repeat: **Do NOT** memorize lists.
3. Read deeply and critically, thinking about the material. Report the text’s typographical errors to us.

**TESTING**

I’m less interested in how well you memorize random bits of information than in how well you can apply what you know to solving problems. When I write a name and date during lecture, it’s just to give you context and background. Don’t memorize dates, names of people, tables or definitions word-for-word. **Practice figuring things out.**

**STATISTICS**

Bring a calculator that can do at least 5th-grade math (+, -, ÷, x). Some students complain about the math the first two weeks. It’s necessary for understanding genetics, but it’s only a small part of the term.

**GRADING**

I **DO NOT GRADE ON THE CURVE!!** I use a traditional fixed scale:

- A 90 – 100%
- B 80 – 89%
- C 70 – 79%
- D 60 – 69%
- F 0 – 59%
Help each other understand genetics. If you work together and work hard, everyone could get an A. *Research shows that social learning is much more powerful than studying alone.*

I assume you have all had general biology and know how a cell works. Nevertheless, we will have some review during the course to catch everyone up to Bio 1 understanding and promote a common base.