BIOL276: Genetics & Evolutionary Biology
Spring 2017

Dr. C. Young
Discussion/Lab: TTh 9:00-12:10, Room 426
Office hours: M 3:00-5:00, T 1:00-4:30, Room 411-17
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MasteringGenetics Course Code: BIOL276YOUNGSp17

TEXT & WEB: *Essential Genetics*, by William S. Klug, Michael R. Cummings, Charlotte A. Spencer, and Michael A. Palladino, 9th ed., Pearson , 2016 with MasteringGenetics access. Access to MasteringGenetics is **required** for the course. It provides access to quizzes, problem-solving videos, and animations. There will also be graded MasteringGenetics homework for each chapter.

COURSE OBJECTIVES: This course is designed to **challenge** you to develop a better understanding of the basics of genetics, our current knowledge of the field, and to prepare you for the challenges of genetics in the future. It is also designed to explore the burgeoning use of genetics in the study of evolutionary relationships.

STUDENT LEARNING OUTCOMES

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to relate genotypes with phenotypes and predict the probabilities of inheritance using Punnett squares based on genotypic data.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to interpret various forms of genetic data to determine the most likely form of inheritance.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to estimate gene locations based on recombination frequencies.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to evaluate the effects of variable expressivity and incomplete penetrance on an individual's phenotype.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to formulate, construct, and draw an accurate pedigree including appropriate phenotypic and genotypic data.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to determine the role of chance in deviation between expected and observed results.

Outcome: Upon successful completion of BIOL 276 F, Genetics and Evolutionary Biology, the student will be able to assess the role of selection upon phenotypic changes.

ATTENDANCE: Attendance is mandatory for both lecture and lab! You are responsible for getting lecture notes, assignments, and announcements from other students if you miss class. So make reliable friends ASAP! Official school policy states that students who miss one week of school can be dropped from the course.

GRADING SCALE:

A	=	90	–	100
B	=	80	–	89
C	=	70	–	79
D	=	60	–	69

The lecture/discussion portion of the course will account for 65% of your grade. Grades are based on exams (100 points each) and various additional assignments (5-30 points). Regular updates will be given during class and posted on WebGrade (with password). Access will be provided at a later date. Be sure to keep track and double check your grades.

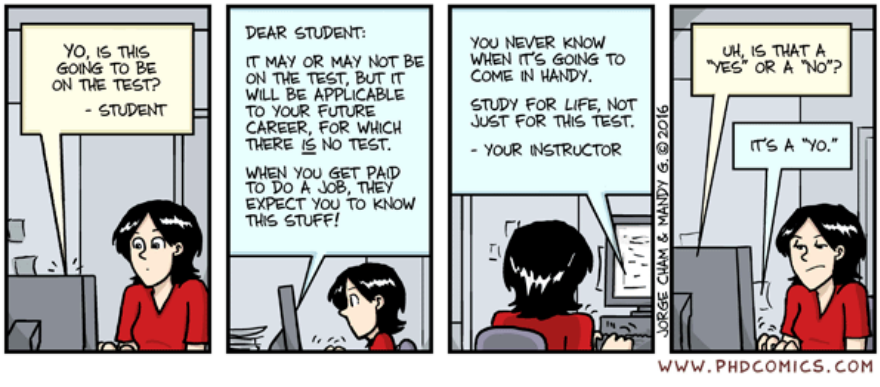
The homework on MasteringGenetics will account for 10% of your grade.

The laboratory portion of the course will account for 25% of your grade.

PRESENTATION OUTLINES: I will post outlines of my presentations on the course web site. This is meant as a supplement for you, **NOT** as a replacement for attending classes. You will still need to **READ** the textbook chapters carefully! As I will be using materials, figures, and examples from many sources, be sure to come to lectures and take your own notes.

EXAMS: The unit exams will consist of multiple-choice, matching, fill-in, and short answer questions/problems, covering lecture material. Exam days will be entirely devoted to the exam. If you miss an exam due to a verifiable absence (funeral notice, hospital admission slip, police report, etc.), you must contact me as soon as possible to arrange a make-up. If at all possible, make-up exams should be taken before the next class period.

INSTRUCTOR INFORMATION: As your instructor, I thought you should know a little about me. I am married and my wife teaches Life Science at Valencia High School in Placentia. I have three children, a son 24, a daughter 22, and my youngest daughter 16 years old. We have four dogs, all mutts, all adopted. We also have two horses, a guinea pig, a snake, and a bearded dragon. I grew up in San Francisco, received my B.A. in Bacteriology and Immunology from the University of California, Berkeley, my Ph.D. in Microbiology from Columbia University, and did post-doctoral research at the University of Washington. I moved to southern California to take a position at California State University, Fullerton and joined the faculty of Fullerton College in 1996. I teach *General Biology* and *Genetics & Evolutionary Biology* at Fullerton College. When I'm not trying to get in shape, I try to spend time with my wife and kids. I enjoy working with power tools, especially with wood. In my spare time, I am constantly striving to stay current and bring the newest, most exciting information into the classroom. I keep up with news on the web and have physical subscriptions to Science and Science News, among others. I am currently on the Teacher Advisory Board for the Understanding Evolution web site (http://evolution.berkeley.edu).



COURSE CONDUCT: Please refer to the Fullerton College catalog for information on academic honesty.

ACADEMIC DISHONESTY (my interpretation):
Academic dishonesty is claiming someone else's work as your own, using unauthorized materials during exams, stealing papers for others to use, or sharing your exams/written work with others. If you turn in someone else's work (even portions), then you will both get a zero for that assignment. For anyone found cheating, stealing, and copying on exams – the least severe punishment is immediate failure from the course. Other possible outcomes include expulsion from Fullerton College with the incident marked on your college transcript.

Any number of unexcused absences beyond three will result in your being dropped from the course. If you miss a discussion, it is solely your responsibility to find out what went on in class and to keep up with the material. If you miss a discussion exam with a legitimate reason, you will be allowed to take a make-up exam at a later date. You will need to provide complete documentation of the reason for the absence. You may only take one make-up exam during the semester.
Attendance is a matter of individual choice in this class. However, a strong association exists between attendance and grades. Students who miss regularly *rarely* do well in the course, and I hope you don't decide to test this already proven hypothesis.

Tardiness will not be tolerated. Every two tardies count as one absence. Lots of stuff goes on at the beginning of class. If you miss this crucial time period, you are likely to be lost the rest of the class. Also, although the points work out to approximately 5 points per day, some assignments will carry over from day to day and missing part of the material might lead to you only receiving partial credit.
Late assignments will be penalized. For any assignments turned in late, the following penalty will be assessed:
10% deducted per day late

Participation, not merely attendance is mandatory. Under Title 5 of the California Administrative Code, Section 58004: A student may be dropped if no longer participating in the course. No longer participating includes but is not limited to excessive absences.

Emergency Response. Please take note of the safety features in and close to your classroom, as well as study the posted evacuation route. The most direct route of egress may not be the safest because of the existence of roofing tiles or other potentially hazardous conditions. Similarly, running out of the building can also be dangerous during severe earthquakes. During strong quakes the recommended response is to duck--cover--and hold until the shaking stops. Follow the guidance of your instructor. You are asked to go to the designated assembly area. Your cooperation during emergencies can minimize the possibility of injury to yourself and to others.

Fullerton College is committed to providing reasonable accommodations for students with disabilities upon request of the student (in a timely fashion) and upon verification of disability.

Dates	Topic	Chapter
1. Jan 31	Introduction to Genetics Mitosis and Meiosis	1 2
2. Feb2	Mendelian Genetics	3
3. Feb 7	Modification of Mendelian Ratios	4
4. Feb 9	Sex Determination and Sex Chromosomes	5
Feb 12	**Last Day to Drop Without a "W"**	
5. Feb 14	Chromosome Mutations: Variation in Number and Arrangement	6
6. Feb 16	**Lab**	
7. Feb 21	**Lab**	
8. Feb 23	**Exam #1 (Chapters 1-6)**	
9. Feb 28	Linkage and Chromosome Mapping in Eukaryotes	7
10. Mar 2	Genetic Analysis and Mapping in Bacteria and Bacteriophages	8
11. Mar 7	Molecular Biology Review* Replication, Transcription, Translation	9-13*
12. Mar 9	Gene Mutation, DNA Repair, and Transposition	14
13. Mar 14	Regulation of Gene Expression	15
14. Mar 16	**Lab**	
15. Mar 21	**Lab**	
16. Mar 23	**Exam #2 (Chapters 7-8, 9-13*, 14-15)**	
17. Mar 28	The Genetics of Cancer	16
18. Mar 30	Recombinant DNA Technology	17
19. Apr 4	Genomics, Bioinformatics, and Proteomics	18
20. Apr 6	Quantitative Genetics and Multifactorial Traits	21
Apr 10-14	**Spring Break – No Classes**	
21. Apr 18	Population and Evolutionary Genetics	22
22. Apr 20	Population and Evolutionary Genetics	22
23. Apr 25	**Lab**	
24. Apr 27	**Exam #3 (Chapters 16-18, 21-22)**	
Apr 30	**Last Day to Withdraw**	
25. May 2	**Lab**	
26. May 4	**Lab**	
27. May 9	**Lab**	
28. May 11	**Lab**	
29. May 16	**Lab**	
30. May 18	**Lab**	
31. May 23	**Lab**	
32. May 25	**Lab Final**	

Background Survey for BIOL276

Full Name (Nickname):
FC Student ID#
Current Phone:
e-mail:
Permanent Address:
Professional Goal:
Declared Major:
 # Semesters Completed in College:
 # Total College Semester Units Completed:
 # Current Class Units at FC:
 # Current Work Hrs/Week:

College Math & English	**Grade**	**Sem/Yr**	**College (Instructor)**
College Science	**Grade**	**Sem/Yr**	**College (Instructor)**

Instructor Use Only: Semester Grade ____ **Drop Date: _____**