

BIOLA 201: Genetics (2:00-3:15 p.m., TTh)
 Spring 2000
 Instructor: Don Hauber, Monroe 320, 865-2769(or 2288)-office
 email: hauber@ loyno.edu
 website: <http://www.loyno.edu/~hauber/genetindex.html>
 Textbook: Concepts of Genetics, by W.S. Klug & M.R. Cummings, 6th ed., 2000
 CD (w/ text): GenCDX, 2000 - (requires internet browser 4.0 or higher)
 Study Guide: Student Handbook: Concepts of Genetics, Harry Nickla, 2000
 Office hours: 3:30-5:00 T and Th or by appointment

q = quiz

DAY	LECTURE TOPICS	PAGES	PROBLEMS* - Chapter and CD
1/13	Introduction to genetics; Chromosomes in eukaryotes	4-10, 19-23, 540-543	Ch. 1: 3-5 Ch. 2: 1-3, 6 CD animation: chromatin structure
1/18, 1/20q	Mitosis; Meiosis, spermatogenesis and oogenesis	25-42, 135-136	Ch. 2: 4-5 Ch. 2: 9-16, 18, 19, 26(a-c) CD animation: mitosis, meiosis
1/25, 1/27, 2/1q, 2/3	Mendelian inheritance (incomplete dominance, codominance, multiple alleles, combination of two or more gene pairs, human pedigrees), sex-linked (X-linked) and Y-linked genes	45-57, 77-85, 93-101	Ch. 3: 1-6, 9-15, 18-21, 26-31, 34, 37, 39 Ch. 4: 1, 2, 5-8a, 10-14, 23-24, 26, 31-32, 34 CD animation: monohybrid cross, dihybrid cross
2/8	FIRST EXAM		
2/10, 2/15	Complete linkage, incomplete linkage, chi-square test, and chromosome mapping	58-64, 137-143	Ch. 3: 22-25 Ch. 5: 1, 3-5, 8, 9, 12, 13, 26 CD animation: linkage and SCO

2/17q	Epistasis and complementation	89-95	Ch. 4: 15-17, 2, 42
2/22,	Evidence of DNA as genetic	283-294, 294-	Ch. 11: 1, 3-6, 9, 14-17,
2/24	material; DNA structure and synthesis	303, 321-334	28, 35
			Ch. 9: 1, 2, 3, 17b, 18-20
			CD animation: Hershey-Chase experiment
			Ch. 12: 1-4, 6, 18, 20, 22, 24
			CD animation: DNA replication
2/29q,	RNA structure and synthesis; Transcription; Genetic code; RNA processing; Translation; One-gene/one-polypeptide	305-306, 349-352, 357-372, 381-393	Ch. 11: 18-19
			Ch. 13: 13, 18, 20, 22
			Ch. 14: 2, 4, 6, 14, 20, 23
			CD animation: transcription, eukaryotic transcription, translation
3/2	SECOND EXAM		
3/7,	MARDI GRAS HOLIDAY		
3/9			
3/14,	RNA structure and synthesis; Transcription; Genetic code; RNA processing; Translation; One-gene/one-polypeptide (cont'd)	305-306, 349-352, 357-372, 381-393	Ch. 11: 18-19
3/16			Ch. 13: 13, 18, 20, 22
			Ch. 14: 2, 4, 6, 14, 20, 23
			CD animation: transcription, eukaryotic transcription, translation
3/21q,	Population genetics	683-690, 691-692, 701-706	Ch. 25: 1-6, 13-14, 16, 20
3/23			
3/28,	Recombinant DNA technology - intro	499-506, 510-520	Ch. 18: 1, 3, 6-7, 9, 11, 14, 15
3/30q,			CD animation: gene cloning, polymerase chain reaction
4/4			
4/6	"Children by Design" (video)		
4/11	THIRD EXAM		
4/18	Application of recombinant DNA technology	578-579, 582-597	Ch. 21: 4, 11, 12, 14, 15
			CD animation: DNA fingerprinting
4/20	EASTER HOLIDAYS		

4/25	Application of recombinant DNA technology (cont'd)	578-579, 582-597	Ch. 21: 4, 11, 12, 14, 15 CD animation: DNA fingerprinting
4/27, 5/2	Sex determination and chromosome variation; prenatal diagnosis and genetic screening	227, 231-244, 251-258, 272-274, 582-586	Ch. 9: 3-5, 8-14 Ch. 10: 1, 3-5, 15, 23
If time	Gene regulation in bacteria (operon); Overview of gene regulation in eukaryotes	413-417, 419-421, 433-436	Ch. 9: 3-5, 8-14 Ch. 10: 1, 3-5, 15, 23

*Include problems in *Insights and Solutions* boxes at the end of each chapter. Solutions for all other problems are in the Student Handbook.

OLD EXAMS - In preparing for exams, check out my website to look over old exams .

COMPREHENSIVE FINAL EXAM - May 5 (2:00-4:00)

ORAL PRESENTATION/SEMINAR - These points are earned in **either one** of two ways:

1. Present an article to the class orally about some aspect of genetics from the popular media (eg. newspaper or magazine). The presentation should be three minutes or less with time for one or two questions. Try the New York Times Science section as a good source. You must sign up to present (list posted outside by office). **I must approve all articles before they are presented.** Only one person per class period may present (excluding exam and quiz days). Turn in your article after your presentation for credit.
2. Attend a Biology departmental seminar here or at one of the local universities. Turn in a half-page, typed (single-spaced) report including title, speaker, the basic question being investigated, experimental approaches used, conclusions (Did she answer her question?)

IMPORTANT NOTICE! Missed exams and quizzes will result in an automatic "0" unless I have been contacted prior to or on the day of the exam/quiz AND have determined that the reason for your absence warrants a make-up exam/quiz. The honesty policy of this university as stated under "Integrity of Scholarship and Grades" (pp.45-46, Undergraduate Bulletin) regarding cheating and plagiarism, will be strictly followed in this course.

GRADING:

3 hour exams	@100 pt =	300 pt
1 final exam		100 pt
5 biweekly quizzes	@20 pt =	100 pt
oral presentation/seminar	20 pt	
Total		520 pt

Scale - A:100-90, B:89-80, C:79-68, D:67-55