

## Tentative Syllabus :

### **BIOL A328-001 Genetic Analysis** **Spring 2002 - TR 11:00-12:15**



Instructor: Don Hauber, Monroe 319, 865-2769(or 2288)-office  
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Website: <http://www.loyno.edu/~hauber/>  
Textbook: Griffiths, et al.. -An Introduction to Genetic Analysis, 7th ed., 2000.  
Other readings: Klug & Cummings - Concepts of Genetics, 6<sup>th</sup> ed., 2000.  
Office hours: 9:00-10:30 TR or by appointment  
**q = quiz**

<b>Class Meeting</b>	<b>Lecture Topics</b>	<b>Text References</b>	<b>Problem Sets</b>
1/16	Introductions; review of the central dogma and Mendelian inheritance	1-38	<b>Ch. 1:</b> all except: 4, 6, 11, 18, 23, 26e, 27, 28 <b>Ch. 2:</b> 1-3, 7-11, 18, 28, 33.
1/22	Continued review of Mendelian inheritance and human pedigree analysis	40-53	<b>Ch. 2:</b> 14a-b, 15, 17, 18, 19a-b, 21a&c, 25, 26, 34, 36, 39, 40, 41
1/24	Linkage vs. independent assortment	139-149, 153-156	<b>Ch. 5:</b> 1-4, 6, 7a-b, 9
<b>1/29q</b>	3-pt. linkage and chromosome mapping	150-153	<b>Ch. 5:</b> 10-12, 14, 16, 21, 24
1/31, 2/5	Recombination in fungi ( <i>Neurospora</i> )	179-187	<b>Ch. 6:</b> 1-2, 15, 16, 22, 36
<b>2/7q</b>	Human gene linkage studies & genomics	437-445	<b>Ch. 14:</b> 7, 8, 11, 12
<b>2/12</b>	<b>Mardi Gras Holiday</b>		
2/14	Human gene linkage studies (cont'd)	437-445	<b>Ch. 14:</b> 7, 8, 11, 12
<b>2/19</b>	<b>Exam 1</b>		
2/21, 2/26, <b>2/28q</b>	Bacterial gene mapping using gene transfer techniques	207-222, 225-233	<b>Ch. 7:</b> 1-3a, 6-8, 17, 18, 20, 21, 26-28
3/5, 3/7, <b>3/12q</b>	Gene mutation and mutagenesis	463-472, 478-474, 495-508	<b>Ch. 15:</b> 1-4, 10, 11, 12, 14
3/14, 3/19	Genetics and cancer	484, 508- 510, 516- 519	
<b>3/21</b>	<b>Exam 2</b>		

<b>3/26,</b>	<b>Easter Holiday</b>		
<b>3/28</b>			
4/2,	Chromosomal rearrangements	523-542	<b>Ch. 17:</b> 1-4, 8-11, 13, 15-18, 39-40
<b>4/4q,</b>			
4/9, 4/11			
<b>4/16q,</b>	Aneuploidy and polyploidy	555-564	<b>Ch. 18:</b> 1, 3, 4a-d, 5, 9, 10a, 12, 15, 16, 18, 29
4/18,			
4/23			
<b>4/25</b>	<b>Exam 3</b>		
4/30, 5/2	Genetics and behavior	K&C: 659-677	TBA
5/7	Extranuclear inheritance	623-638	<b>Ch. 21:</b> 1, 3, 4, 7, 10, 30-32

### ATTENDANCE POLICY:

Because the exams and quizzes are based primarily on lecture and class discussion in this course, I expect you to attend all of the class meetings. You are responsible for any and all material presented and announcements made in class. Attendance will be taken daily in an effort for the instructor to familiarize himself with those students that regularly attend.

### FINAL EXAM

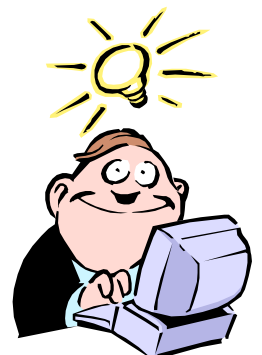
May 16, 11:30 a.m. - will be comprehensive.

### TIMELINE AND TERMS FOR RESEARCH PAPERS

1. Select and sign up for a topic from the posted list - one student per topic. You may not resubmit or slightly modify a previously submitted term paper authored by you or someone else.
2. Find at least 3 journal articles from the primary literature as references for your topic, photocopy the first page of each article and submit these pages for approval (Deadline: **FEB. 7<sup>TH</sup>**).
3. Read over the outline for "Writing a Research Report" below and produce a first draft following the "Science Writer's Format." (Deadline: **APRIL 4<sup>TH</sup>**).
4. Literature cited must include at least 6 different cited references: at least three must be from the primary literature; at least two must be recent (1999-2002).
5. Final draft (5-10 pages, single-spaced, 12 pt, 1" margins) due **APRIL 30<sup>TH</sup>**.

### **Writing a Research Report**

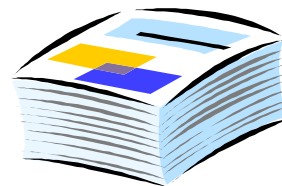
1. Organize ideas - write notes on index cards; throw out insignificant ideas
2. Create outline - hierarchically arrange major topics and divide into subtopics
3. Produce 1<sup>st</sup> draft - "writer's block" = insufficient information or ideas. Don't worry about grammar or flow. Just write.



4. Review 1<sup>st</sup> draft
  - a. Do you really have something to say?
  - b. Have you told readers (i.e., average student from this class) everything they need to know? - too little detail or too much?
  - c. Did you follow your outline?
  - d. Have you clarified why this is an important biological question?
  - e. Have you included appropriate citations?
5. Final draft - refine and consider instructor's suggestions; grammar and spelling will be graded here.

### Science Writer's Format

1. Title - informative, specific, concise, and representative of content - catch the reader
2. Introduction - Describes what your research topic is about; explain why this topic is of importance; explicitly state objective of the paper; 1-2 paragraphs; get to the point quickly; proceed from general to specific.
3. Main body - Present your topic in a logical and cohesive manner. For example, you may use a historical or chronological approach, or you may organize by research methodologies, for instance. Use literature citations throughout the text.
4. Closing - you may summarize here, drawing together the primary emphasis of the paper, and/or provide indication of future direction; 1 paragraph
5. Literature cited - always examine the original references yourself; check for correct format (Harvard, etc.); use at least six references



### GRADING:

IMPORTANT! Missed exam or quiz will result in an automatic "0" unless I have been contacted prior to or on the day of the exam and have determined that the reason for your absence warrants a make-up exam.



All deadlines are absolute!! Assignments/papers received past the assigned deadline will receive a letter grade deduction for each day past the deadline (including Sat. & Sun.).

\*\*I will adhere to the university policy on Integrity of Scholarship and Grades regarding cheating and plagiarism in this course. Please consult the Undergraduate Bulletin at <http://www.loyno.edu/undergraduate.bulletin/>

Three exams @ 15%	45%
Quizzes	15%
Research paper	28%
Final exam	12%

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