**BSCI 222 - FALL 2003**
**PRINCIPLES OF GENETICS**

Dr. R. B. Imberski, Dept. of Biology, BPS 3260, **ri2@umail.umd.edu**. Office hours 1:30 – 3:30 Tuesday and Thursday. Drop in, but to ensure my availability make appointment through secretary (not me) in Biology Undergraduate Office, BPS 2227, Phone: 405-6904 (Secretary). Teaching Assistants to be announced.

Prerequisites: BSCI 105 and one year of college chemistry.
Textbook: Principles of Genetics, 3rd ed., D. P. Snustad and M. J. Simmons

Grading, Policies and Course Objective:

| | | |
|---|---|---|
| Three exams including noncumulative final (100 points each) | = | 300 points |
| Discussion | = | 150 points |
| **TOTAL** | | **450 points** |

Final Grades 435=A+, 420=A, 405=A-, 390=B+, 375=B, 360=B-, 345=C+, 330=C, 315=C-, 300=D+, 285=D, 270=D- (minimum value for each grade)

Dates of lectures and exams and readings from the textbook are on reverse side of this page. Each date signifies the approximate beginning of a topic, but not necessarily its ending. Exams consist of problems, short answer questions and/or multiple choice questions and are based on material presented in lecture. Individual exams are not curved, but course total may be. Samples of old exams are available in the STAR Center. The textbook provides further explanation of most (but not all) of the lecture material and is a source of homework problems. For success in this course attend all lectures and discussions and do the assigned readings and problems.

Make-up exams will be given only because of absence due to illness, death in the family, religious observance, or participation in University business or activities. *Documentation is required*. Do *not* schedule job interviews, professional/grad. school interviews, social engagements or travel during exam times! *Provide documentation by Sept. 15, if any exam date conflicts with a religious observance*. Request for regrading of an exam must be submitted in writing (on paper separate from exam) during the discussion session at which the graded exam is returned. Exams written in pencil will not be considered for regrading. In order to discourage submission of altered exams for regrading, a sample of exams will be photocopied before being returned. Please familiarize yourself with the University policy on academic dishonesty as stated in the Undergraduate Catalog and in the Schedule of Classes. If you have a *documented* disability and wish to discuss academic accommodations, please contact us as soon as possible.

Discussion sessions are categorized as *in class participation* and *attendance is required*. In general, each session will focus on material presented in lecture during the preceding week. Review sessions before exams will be held during regular discussion meetings. *Homework will be assigned and collected in discussion*. The discussion grade will be determined by *weekly* quizzes, homework, and attendance. Details will be given at the first meeting.

The objective of this course is for each student to acquire an understanding of the fundamental concepts of genetics and the theory and experimental evidence upon which they are based. To this end the entire staff of BSCI 222 is available (even eager!) to help. However, *learning does not occur passively* and the burden for achieving the course objective ultimately rests on the individual student. It is the responsibility of each student to complete course assignments in a timely manner and to come prepared to the discussion sessions and exams.

Any changes in the printed material presented above or on reverse side will be announced in lecture and/or discussion and it is each student's responsibility to be aware of them.

**DISCUSSION SESSIONS BEGIN WEEK OF 9/8. THERE WILL BE A QUIZ.**

## LECTURE AND EXAM SCHEDULE

| DATES | | TOPICS | PAGES IN TEXTBOOK |
|---|---|---|---|
| **Sept.** | 3 | Introduction: Questions and Systems | 3-20 |
| | 5 | Cellular Reproduction | 22-48 |
| | 8 | " | |
| | 10 | Mendelian Genetics and its Extensions | 52-67, 72-86 |
| | 12 | " | |
| | 15 | " | |
| | 17 | " | |
| | 19 | Chromosomal Basis of Eukaryotic Genetics | 114-130 |
| | 22 | " | |
| | 24 | Gene Linkage and Chromosome Maps | 156-168 |
| | 26 | " | |
| | 29 | Chromosomal Variation | 134-153, 168-170, 186-188 |
| **Oct.** | 1 | " | |
| | 3 | Nucleic Acids | 204-216 |
| | 6 | DNA and Chromosomes | 217-234 |
| | 8 | DNA Replication | 237-270 |
| | 10 | ***EXAM* (on 9/3 – 10/1)** | |
| | 13 | DNA Replication (continued) | |
| | 15 | Genetics of Bacteria and Bacteriophages | 418-435, 397-406 |
| | 17 | " | |
| | 20 | Transcription and RNA Processing | 273-299 |
| | 22 | " | |
| | 24 | Translation and the Genetic Code | 303-329 |
| | 27 | " | |
| | 29 | Mutation and DNA Repair | 332-337, 345-357 |
| | 31 | " | |
| **Nov.** | 3 | **EXAM (on 10/3 – 10/27)** | |
| | 5 | Defining the Gene | 367-384 |
| | 7 | DNA Manipulation and Genomics | 482-509, 514-543, 547-568 |
| | 10 | " | |
| | 12 | " | |
| | 14 | " | |
| | 17 | Regulation of Gene Expression | 573-584, 600-617, 620-624 |
| | 19 | " | |
| | 21 | " | |
| | 24 | Quantitative Genetics | 90-94, 100-103 |
| | 26 | OPEN | |
| | 28 | THANKSGIVING RECESS | |
| **Dec.** | 1 | Population Genetics | 719-735 |
| | 3 | " | |
| | 5 | Developmental Genetics | 629-634, 640-653 |
| | 8 | " | |
| | 10 | Extrachromosomal Genetics | 462-468, 471-472 |
| | 12 | " | |

**17** *(Wednesday, 1:30 PM*) **NONCUMULATIVE FINAL EXAM (on 10/29 – 12/12)**