POLICIES FOR GENETICS & EVOLUTION (BIOL 224) SPRING 2010 from Dr. Neigel

COURSE OBJECTIVE

Genetics is a cornerstone of modern biology and has led to major advances in medicine, biotechnology and basic science. *Evolution* is the most important unifying principle in biology that explains both the unity and diversity of life. In this course, you will learn about genetics and evolution and how they are interrelated. Modern genetic approaches, such as DNA sequencing, produce enormous quantities of data that can only be managed with computers. A secondary objective of this course is for you to learn how to use computers to analyze genetic data.

MATERIAL COVERED

Three main areas of genetics will be emphasized in this course: 1) Mendelian genetics; 2) regulation of gene expression, and 3) evolutionary genetics. This course assumes that you have already taken Biology 212 (Cellular and Molecular Biology), which covers DNA structure, DNA replication, transcription and translation.

EXAMS QUIZZES and GRADES

In designing exams and quizzes, I consider how much you will be expected to know in other courses at UL Lafayette and in graduate and professional schools. I've also considered standardized tests such as the GRE and MCAT. I will provide you with practice tests and/or study guides before each exam. The format of exams will vary. The first will emphasize problems that require basic math. Later exams will emphasize interpretation of data and the application of concepts.

Quizzes will be given after major subjects are covered, and together will count for 20% of your final grade. Three exams will be given, including one during finals week. Exam scores will be "curved" to bring the class average to 75. Each exam will count for 20% of your grade. The following averages will be sufficient to achieve the indicated grades:

A: 90 – 100 B: 80 – 89 C: 70 – 79 D: 60 – 69 F: below 60

COMPUTER LAB

The lab portion of this course will emphasize using computers to analyze genetic data, as well as presentation of results in lab reports and PowerPoint. Everyone who is enrolled in the lecture portion of the course must also be enrolled in a lab section. The labs will meet in room 411, Wharton Hall, and will last 1 hour and 50 minutes. Your grade for the lab will count as 20% of your final grade.

TEXTBOOK

INTRODUCTION TO GENETIC PRINCIPLES by David Hyde, McGraw-Hill, 2009.

CONTACT INFORMATION

Course handouts, notes, old exam questions, and links to other genetics sites can be found at the class website: **http://seahorse.louisiana.edu/biol224/**

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Office Hours: MWF 10-11, M 2-5

COURSE SYLLABUS[1] FOR BIOLOGY 224 – GENETICS & EVOLUTION
SPRING SEMESTER 2010
Dr. Joseph Neigel

DATE	TOPIC	DATE	TOPIC
1/13	Course Introduction	3/10	Eukaryotic *cis* Regulation
1/15	Mendel's Principles	3/12	Transcription Factors
1/20	Probability	3/15	Regulatory Networks
1/22	Review of Mitosis and Meiosis	3/17	Chromatin in Gene Regulation
1/25	Probability and Statistics I	3/19	Post-transcriptional Regulation
1/27	Sex Linkage and Sex Determination	3/22	Review for Exam
1/29	Pedigree Analysis	3/24	**Exam II**
2/1	Probability and Statistics II	3/26	Alleles and Genotypes
2/3	Modifications of Mendelian Patterns	3/29	Selection
2/5	Gene Interactions	3/31	Genetic Drift
2/8	Linkage and Recombination I	4/12	Migration and Population
2/10	Linkage and Recombination II	4/14	Quantitative Traits
2/12	Linkage Mapping	4/16	Heritability
2/19	Review for Exam	4/19	Darwinian Evolution and Fitness
2/22	**EXAM I**	4/21	Speciation
2/24	Bioinformatics	4/23	Phylogenetics
2/26	Genetics of Bacteria & Phages	4/26	Human Evolution
3/1	Bacteria Sexual Reproduction	4/28	Pathogen Evolution
3/3	Lactose Operon	4/30	Review for Exam III
3/5	Other Operons		
3/8	Phage Lambda	5/4	**EXAM III** 11:00-1:30

[1]This is a tentative schedule, exact dates and topics are likely to change

Tutoring is available **free of charge** for this course in the Learning Center (2nd Floor, Lee Hall). Other services include tutor-led Supplemental Instruction and Study Groups for some classes (see ULink- Tutoring tab). The center also has a computer lab with Internet access (213 Lee).

How to get the most out of a tutoring session:

1. Start right away. Students who begin tutoring from the beginning of the semester typically do better than those who wait.
2. Book your appointments early. During peak times, you may need to book a few days in advance to get the times you want. **Call 482-6583 to make an appointment.**
3. Come prepared. Please bring your class notes and textbook. Look over the readings and try the problems. If you can, bring a list of specific questions. The more you prepare, the more you will get out of the session.
4. If you miss a class, please get notes from a classmate before your session. Tutoring is not a substitute for attending class.

Contact Person: Lauren Fontenot Landry, Interim Coordinator
(337) 482-5254 Room 204B Lee Hall
Email: tlc@louisiana.edu
Website: http://studentsuccess.louisiana.edu/learning/index.shtml

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NOTICE: A map of this floor is posted near the elevator marking the evacuation route and the Designated Rescue Area. This is an area where emergency service personnel will go first to look for individuals who need assistance in exiting the building. Students who may need assistance should identify themselves to the teaching faculty.