Biology 362
Principles of Genetics
Spring 1999

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GRADING

150-225 pts. Problems sets worth 15 points each.

250 pts. Five lab reports (2-3 pages) worth 50 points each.

300 pts. Three midterm exams.

200 pts. Final exam.

Participation (quantity and quality) in classroom and laboratory activities will be used to boost the final grades of individuals with borderline point totals.

Grades will be based on percentage of total possible points according to the scale: A = 90-100, B = 80-90, etc.

If you are going to miss an exam, it is essential that you contact Dr. Schwaegerle as soon as possible to discuss your excuse. Unexcused absences from exams will be recorded as zero.

If you are going to miss lab, you must contact your teaching assistant as soon as possible to make arrangements for making up the exercises you will miss. If you miss a lab and don't make arrangements, you are individually responsible for mastering material and completing assignments made during that lab. Unexcused absence from a lab exercise will be recorded as a zero.

Academic dishonesty - The UAF Honor Code is presented on page 22 of the 98-99 Undergraduate Catalog. No collaboration among students will be allowed on exams and quizzes, and although we will work together in collecting, analyzing, and interpreting data, no collaboration is permitted in writing of lab reports and lab assignments. Copying or paraphrasing another student's writing is a violation of the Honor Code. Evidence of academic dishonesty will be presented to the University Disciplinary and Honor Code Committee and may result in an F for the course and/or expulsion from the University.
Course Schedule

F 15 Jan - Introduction/Review of Biol 105

M 18 Jan - AKCRD - NO CLASS
W 20 Jan - Cell cycle; mitosis
F 22 Jan - Meiosis

LAB - Computer Exercise - Mendelian genetics
Genetic Analysis of Human Traits

M 25 Jan - Principles of Mendelian genetics
W 27 Jan - Principles of Mendelian genetics
F 29 Jan - Linked genes; Sex-linked genes; Epistasis

LAB - Computer Exercise - Inheritance/Gene Expression
Dihybrid cross in Drosophila melanogaster
Set up population genetics experiments; Plant Brassica

M 01 Feb - Quantitative traits
W 03 Feb - Quantitative inheritance
F 05 Feb - Mapping genes

LAB - Computer Exercise - Linked Genes

M 08 Feb - EXAM 1
W 10 Feb - Overview: genes, enzymes, phenotype
F 12 Feb - DNA structure

LAB - Mapping Genes on Chromosomes

M 15 Feb - Chromosome structure
W 17 Feb - Chromosome structure
F 19 Feb - Chromosomal mutations

LAB - Molecular Genetics Techniques

M 22 Feb - DNA replication
W 24 Feb - DNA replication
F 26 Feb - Mutation at the phenotypic level

LAB - Plant pollination

M 01 Mar - Mutation at the phenotypic level
W 03 Mar - Mutation at the molecular level
F 05 Mar - Mutation - recombination and repair

LAB - Mutational Effects of UV on Salmonella
Lab Report 1 due - Dihybrid Cross

Ch 1
Ch 1
Ch 2-3
Ch 2-3
Ch 4
Ch 5
Ch 5
Ch 13
Ch 7
Ch 8-9
Ch 8-9
Ch 8-9
Ch 12
Ch 8-9
Ch 8-9
Ch 11
Ch 11
Ch 22
Ch 23
M 08 Mar - Mutation - repair mechanisms
W 10 Mar - Plasmids, transposable elements, viruses
F 12 Mar - EXAM 2

LAB - Mutational Effects of UV on Salmonella

15-19 Mar - SPRING BREAK - NO CLASS

M 22 Mar - Overview: genes, enzymes, phenotype
W 24 Mar - Protein structure
F 26 Mar - Enzymes

LAB - Analysis of Genetics of Human Traits

M 29 Mar - Transcription
W 31 Mar - Transcription
F 02 Apr - Translation

LAB - Harvest and measure plants
Lab Report 2 due - Mutation in Salmonella

M 05 Apr - Translation
W 07 Apr - Gene function
F 09 Apr - Gene function

LAB - Computer Exercise - Quantitative Inheritance
Lab Report 3 due - Genetics of Human Traits

M 12 Apr - EXAM 3
W 14 Apr - Gene regulation - prokaryotes
F 16 Apr - Gene regulation - eukaryotes

LAB - Analysis of Plant Data

M 19 Apr - Gene regulation - eukaryotes
W 21 Apr - Gene regulation - development and cancer
F 23 Apr - ACD - NO CLASS

LAB - Analysis of Population Genetics Experiments

M 26 Apr - Genes in populations
W 28 Apr - Genes in populations
F 30 Apr - Molecular evolution

LAB - Molecular Evolution
Lab Report 4 due - Genetics of Plant Traits

M 03 May - Molecular evolution
Lab Report 5 due - Population Genetics Experiments
W 05 May - FINAL EXAM  10:15 - 12:15