

Biology 240 – Genetics (Fall Semester 2009)

Web Site: <http://www.bio.utk.edu/genetics>

Text: Introduction to Genetic Analysis – Griffiths

Lab Book: Biology 240 Lab Manual

Lecturer: Dr. Hughes [khughes@utk.edu]

Lecture 1:25 – 2:15 MWF – S&E 307

Lab (varies by section) – Neyland Drive Biology Annex 117

ATTENDANCE IS REQUIRED IN LAB!

Check web page for schedule changes

| Week | Day | Topic | Lab Book Unit |
|------------------------|------------------------|---|---|
| Aug 19-21 | W | Unit 1 - Chromosomes | No labs |
| | F | Unit 2 – Cell division | |
| Aug 24-28 ^A | M | Unit 2 – Cell division <i>Homework 1 assigned</i> | Lab 1 – Meiosis |
| | W | Unit 3 - Mendelian inheritance-basics | |
| | F | Unit 3 - Mendelian Inheritance – basics <i>Homework 2 assigned</i> | |
| Aug 31- Sept 4 | M | Unit 4 – Mendelian inheritance-extensions Quiz 1-Units 1-3 (10 pts) <i>Homework 3 assigned</i> | Lab 2 – C-fern Questions Lab 1 due |
| | W | Unit 4 & Unit 5 Sex determination, sex linkage | |
| | F | Unit 5 – Sex determination, sex linkage | |
| Sept 7-11 | M | Labor Day Holiday | <i>Hand in homework 1 and 2 and go over answers</i> |
| | W | Unit 6 – Linkage and mapping | |
| | F | Unit 6 – Linkage and mapping | |
| Sept 14-18 | M | EXAM 1 – Units 1-6 | Lab 2- C-fern <i>Hand in homework 3</i> |
| | W | Unit 7 – Chromosome aberrations | |
| | F | Unit 8 - Populations <i>Homework 4 assigned</i> | |
| Sept 21-25 | M | Unit 8 – Genetics of populations Quiz 2-Units 6-7 (10 pts) | Lab 3-Transformation |
| | W | Unit 8 and 20 – Genetics of populations/Evolution | |
| | F | Unit 20 - Evolution | |
| Sept 28-Oct 2 | M | Unit 20 - Evolution | Lab 8 – Population Genetics Questions Lab 3 <i>Hand in homework 4</i> |
| | W | Unit 9 – Bacteria | |
| | F | Unit 9 – Bacteria Quiz 3–Units 20, 9 (10 pts) | |
| Oct 5-9 | M | Unit 10 – DNA/RNA | Lab 4 – Plasmid isolation Questions Lab 8 |
| | W | Unit 10 – DNA/RNA | |
| | F | EXAM 2 – Units 7,8,9,10,20 | |
| Oct 12-16 | M | Unit 11 – DNA replication | No Lab, Fall Break |
| | W | Unit 11 – DNA replication | |
| | F | Fall Break Oct 15-16 | |
| Oct 19-23 | M | Unit 12 – Code Quiz 4 – Units 11-12 (10 pts) | Lab 5 – Restriction Mapping Questions Lab 4 |
| | [Oct 20 ^B] | Unit 13 Transcription | |
| | F | Unit 14 - Proteins and pathways | |
| Oct 26-Oct 30 | M | Unit 14, Unit 15 –Prokaryotic gene regulation <i>Homework 5 assigned</i> | Lab 6 - PCR Questions Lab 5 due |
| | W | Unit 15 - Prokaryotic gene regulation | |
| | F | Unit 16 – Eukaryotic gene regulation Quiz 5-Units 13-15 (10 pts) | |
| Nov 2-6 | M | Unit 16 – Eukaryotic gene regulation | Lab 7 – DNA sequencing Questions Lab 6 due |
| | W | EXAM 3 – Units 11,12,13,14,15 | |
| | F | Unit 16 – Eukaryotic gene regulation | |
| Nov 9-13 ^C | M | Unit 17 – Mutation and repair Quiz 6–Unit 16 (10 pts) | Questions lab 7 due Hand in only – no lab <i>Hand in homework 5 and</i> |
| | W | Unit 17 – Mutation and repair | |

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| | F | Unit 18 – Gene isolation and manipulation | <i>review in lab</i> |
| Nov 16-20 | M | Unit 18 – Gene isolation and manipulation | Lab 9 – due at end of class |
| | W | Unit 18 – Gene isolation and manipulation | |
| | F | Quiz 7- Units 17-18 (10 pts) Unit 19 – Genomics | |
| Nov 23-27 | M | Unit 19-Genomics | No Labs |
| | W | | |
| | F | Thanksgiving Holiday Nov. 26-27 | |
| Nov 30-Dec 1 | M | Unit 19-Genomics | No Labs |
| Dec 10 | Thurs day | EXAM 4 - Units 16,17,18,19 12:30-2:30 S&E 307 (Lecture room) | |

^AAug 28 – last day to drop without a W; ^BOct 20– last day to withdraw with a “W”; ^CNov 10 – Last day to drop with “WP/WF”

CLASS POLICIES

I. **GRADES:** There is NO extra credit. There is NO grade curve.

II. LECTURE:

a. Lecture material generally parallels the text. Extra material is occasionally discussed or assigned and **you are responsible for all material presented in class and for portions of the text assigned but not covered in class.** You should be able to answer any assigned homework questions, whether or not they were discussed in class.

b. Exams

1. There will be four exams. The fourth exam will be given during finals week. Each exam will be multiple choice and will be computer graded; Do all calculations on your test. **You will need a soft lead pencil (#2) and an eraser to take each exam. These will not be provided.** Tests will be posted on the class web site. Answer sheets will be returned to you. Grades will be posted in blackboard approximately 2 days after each exam.

2. **Make-up exams will be given when a student has a valid excuse** recognized by the University. In order to take a make-up exam, a student must notify the Instructor as soon as possible and provide written documentation of a legitimate excuse where possible. Students missing an exam due to a University-sponsored event should provide the Instructor with documentation of the event prior to the scheduled exam so that a make-up can be scheduled. All make-up exams will differ from the regularly scheduled exam and will be essay and problem oriented, not multiple choice. **If you fail to come to a scheduled appointment for a makeup exam and have not contacted the instructor, you will lose the opportunity to take the test.** If you miss an exam without a legitimate excuse (for example, you overslept), you may still take the exam but may be assessed a 5% penalty. See Dr. Hughes immediately. Delays will result in loss of opportunity to take the test. **Keep your copies of answer sheets.** Grading errors are occasionally made. This allows you to verify your grades.

c. Lecture Quizzes:

1. There will be 7 quizzes. **Only five of the seven quizzes will count towards your grade.** You may miss two quizzes without penalty. **There are no makeups for quizzes for any reason.**

2. Each quiz will be 10 points. Quizzes are power point presentations. Each question will run 30-45 seconds. The quiz will be repeated twice. Please do not leave your seats until the last cycle has completely finished. **Quizzes will be given via student response modules (i.e., clickers).** If you forget your clicker, you will be given a zero for the test.

d. Homework:

1. Assignments are given on the class web site. They may consist of assigned problems from the book, animations, practice quizzes and/or tutorials. Your book should be packaged with a solutions manual. You are responsible for the material in these assignments.

2. You will be assigned 5 graded homework assignments. Each assignment will be worth ten points and will be due on the assigned due date. Late submissions will be assessed a penalty. You may work together on these assignments but the final product should be in your own words. Copying someone else's work (including work from previous years) will be considered cheating.

e. **Communication:** Communication with students about class matters will be during lecture. In unusual circumstances (such as an emergency), e-mails will be sent. Check the class web site frequently for announcements. The web site is <http://www.bio.utk.edu/genetics>. **If you e-mail your instructor, put “Genetics” in the subject line. E-mails without that will be erased.**

f. **Citizenship:** Talking in class, arriving late or leaving early, disturbs the class. If persistent, it may result in penalties or you may be asked to leave the class. You may leave if you become ill or need to go to the bathroom.

III. LABS:

- a. **Bring your textbook and lab book to labs.**
- b. **There are no makeups for missing a lab.** If you have a valid, documented excuse, your TA may be able to arrange for you to attend another lab during the same week. If that is not possible, you will be given an E (excused absence) and will be given the average of your other labs for the excused lab. If you do not have a valid excuse, you will be given a zero for that lab.
- c. You are expected to read the lab assignment before you go to lab. You are expected to fill out an experimental flow chart for lab experiments before you come to lab. Your TA will tell you which labs will require a flow chart.
- d. Lab Assignments: **Lab assignments are due the week following the end of the lab** (some labs will cover two weeks). Lab exercises should be handed in at the beginning of the period. While you will work together as a team during labs and are expected to use lab time to work on your lab exercises, the exercises should be in your own words and should not be copied from someone else. Unauthorized assistance with any written exercise is considered cheating and you are subject to the policies above. Written assignments are to be written by you and in your own words.
- e. The lowest lab grade will be dropped. This allows you to miss one lab without penalty or excuse.
- f. Citizenship: You are expected to arrive in lab on time and to pay attention to your lab assignments. Excessive talking about non-lab subjects while lab is in progress will accrue penalties.

IV. ACADEMIC DISHONESTY:

Students found cheating or receiving unauthorized assistance will have their exams or papers confiscated at the time of the infraction; they will be subject to an "F" for the course, and the matter will be referred to the Office of Student Conduct for further action. Students should refer to Hilltopics for University policies and procedures. It is the student's responsibility to avoid even the appearance of cheating. Cheating or the appearance of cheating will result in one warning followed by an automatic F.

V. YOUR RIGHT TO KNOW:

Tennessee law requires that you are provided notice that some of the laboratory exercises involve contact with chemicals or living organisms which have been identified with potential health hazards. These include, but are not limited to: ethyl alcohol, ethidium bromide, dyes, and E. coli (bacterium). While every effort has been made to make the materials as safe as possible, these chemicals are toxic or dangerous and **you must be responsible for their safe handling**. If you feel you are at a higher risk than normal because of some medical condition, we recommend that you consult your physician before taking this course.

V. DISABILITY STATEMENT:

If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact the Office of Disability Services at 2227 Dunford Hall at 974-6087. This will ensure that you are properly registered for services.

| Grading Policy | Grade | Q.P. |
|--|--------------|------|
| Lecture = 600 points | A= 564-600 | 4.0 |
| Exams 1-4 (100 points each) = 400 points, | A-= 540-563 | 3.7 |
| Quizzes (20 points each; best 5/7) = 100 points – Note: Quizzes will be given by student response modules. You are required to buy a "clicker" Old clickers will be exchanged the first week of class in the student center. | B+ = 522-539 | 3.3 |
| Homework = 100 points | B = 504-538 | 3.0 |
| For questions about absences, makeup exams and other aspects of the class, see class policy | B- = 480-503 | 2.7 |
| | C+ = 462- | 2.3 |
| | 479 | 2.0 |
| | C = 444-461 | 1.7 |
| Lab = 200 points – Point distributions will be handed out in lab. Lab attendance in mandatory. Exception: extended illness. Labs cannot be made up but for a documented excuse, your TA can give you a grade equal to the average of other grades in the lab or can make other exceptions. If you must miss a lab for a valid excuse, contact the lab director, Dr. Patterson at rpatter1@utk.edu | C- = 420- | 1.3 |
| Illness policy: If you have the flu, stay home!!! | 443 | 1.0 |
| | D+ = 402- | 0.7 |
| | 419 | 0.0 |
| | D = 384-401 | |
| | D- = 360-383 | |
| | F = 0-359 | |