

## INTRODUCTORY GENETICS (BIO 2344) FALL 2015

**Rm:** Klaus 1456

**Time:** Tue & Thur 9:35-10:55AM

**Instructor:** Professor John McDonald

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**Class Attendance/grading policy:** You are expected to attend all lectures. If you miss a lecture, you are responsible for obtaining all notes, announcements, and assignments. Final grades are determined on the basis of 4 exams (90%) and unannounced quizzes/class participation (10%). Written confirmation of a legitimate excuse, such as severe illness, will be required if any exam/quiz is missed otherwise you will receive a grade of "0" on the missed exam/quiz. *No exceptions.* There are no make-up exams/quizzes. Therefore, if you legitimately miss an exam/quiz, your exam/quiz grade will be calculated based on the remaining graded exams/quizzes. If you miss two or more of the four exams (with a legitimate excuse), you will be assigned an "I" for the course.

**Textbook:** Robert J. Brooker, Genetics-analysis & principles , 5<sup>th</sup> edition (2015).

**Assignments:** Problem assignments for each Chapter will be listed on T-square. "In book" assignments will be selected problems found at the end of each Chapter. "Online assignments" can be accessed at the Textbook's web site by selecting the relevant Chapter from the drop-down menu ([www.mhhe.com/brookergenetics5e](http://www.mhhe.com/brookergenetics5e)).

**Lecture ppts:** Slides used in each lecture will be posted on T-square before each lecture.

**Hints for doing well in this class:** Come to class and pay attention to the lecture. If you don't understand something, ask questions. Review the slides from each lecture before the following class period. Unannounced quizzes will be "obvious" (i.e., not complicated) questions taken from lecture slides. Exam questions will be taken from the "in book" and "on line" assignments. The Exam questions will be word-for-word from the assigned questions or directly derived from the assigned questions. Thus, if you understand the assigned questions well, you will do very well on the Exams. If you don't understand how to answer any of the assigned questions, be sure to attend one of the weekly review sessions and resolve your question(s). Don't go into an exam without understanding all of the assigned questions if you want to do well on the exams. Be sure that you understand what is being asked in each exam question. If you are unsure, raise your hand and ask for clarification. Don't feel as though you need to memorize everything in the text. You are not necessarily

responsible for knowing all of the material in every chapter. We do not have enough time to cover all of the material in the book. Use the lectures and the assigned questions as guides as to what material you are responsible for knowing on the exams.

**Honor policy:** Your conduct in the course should conform to the Student Honor Code (<http://www.honor.gatech.edu/>). Students caught cheating will be reported to the College for disciplinary action.

### **Tentative Lecture Schedule**

#### ***I. What is the hereditary material and how does it work?***

**Lec 1 Aug 18** Introduction/ The Science of Genetics

**Lec 2 Aug 20** DNA is the hereditary material Ch 9

**Lec 3 Aug 25** DNA structure and replication Ch 11

**Lec 4 Aug 27** Transcription and processing Ch 12

**Lec 5 Sept 1** Transcription and processing Ch 12

**Lec 6 Sept 3** The genetic code/translation Ch 13

**Lec 7 Sept 8** The genetic code/translation Ch 13

REVIEW Sept 10

**EXAM I Sept 15** (Chap 9, 11, 12, 13)

**Lec 8 Sept 17** Gene regulation in prokaryotes Ch 14

**Lec 9 Sept 22** Gene regulation in eukaryotes Ch 15

**Lec 10 Sept 24** Gene regulation in eukaryotes Ch 16

**Lec 11 Sept 29** Developmental genetics Ch 25

**Lec 12 Oct 1** Developmental genetics/  
The genetic basis of cancer Ch 25  
Ch 24 (pp619-632)

**REVIEW Oct 6**

**EXAM II Oct 8 (Chap 14, 15, 16, 25, 24 (pp 619-632)**

**FALL BREAK Oct 13**

**Lec 13 Oct 15** Recombinant DNA technology Ch 20

**Lec 14 Oct 20** Biotechnology Ch 21

**Lec 15 Oct 22** Genomics I Ch 22

**Oct 25- LAST DAY TO DROP WITH A "W"**

**Lec 16 Oct 24** Genomics II Ch 23

***II. How is the hereditary material (genes) organized and transmitted through generations?***

**Lec 17 Oct 29** Mitosis & Meiosis/ Chromosomal reproduction and transmission Ch 3

**Lec 18 Nov 3** Mendelian genetics Ch 2

**Lec 19 Nov 5** Extensions of Mendelian genetics Ch 4

**REVIEW Nov 9**

**EXAM III Nov 12 (Chap 18, 19, 20, 21, 2, 3, 4)**

***III. How does the hereditary material change and evolve over time?***

**Lec 20 Nov 17** Gene mutation and repair I Ch 18

**Lec 21 Nov 19** Gene mutation and repair II/ Ch 18

**Lec 23 Nov 24** Recombination and transposable elements Ch 19

**Lec 24 Nov 26** Population genetics Ch 26

**Lec 25 Dec 1** Evolutionary Genetics/  
Molecular Evolution Ch 28

**REVIEW Dec 3**

**EXAM IV (FINAL EXAM) Dec 10, 8-10:50 AM (Chap 18, 19, 26, 28)**