

Principles of Biology (Biol 101): Fall 2011

Dr. Kelly Hogan

MWF 9:00 – 9:50 AM (Section 1)

Hamilton Hall 100

Instructor: Dr. Kelly Hogan

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Office phone: 843-6047

Office hours (Wilson 104B): Tuesdays 10:00-12:00, and Fridays 12:15- 2:15 PM

Academic advising questions? See me in from 12:30-4:30 on Mondays by appointment in academic advising in Steele. (Make an appointment through the academic advising website). (**If you can't make it at these times, I am free right after class each day for quick questions and I am willing to discuss things by email or over the phone.*)

Supplemental Instruction TA: Chelsea Steele stealc@email.unc.edu

*SI times/locations: TBA (see blackboard under the SI folder)

REQUIRED TEXT AND REQUIRED ONLINE MASTERING BIOLOGY ACCESS:

Campbell Biology, Concepts and Connections, 7th Edition by Reece, Taylor, Simon, Dickey

Feel free to choose a physical book or the ebook. The ebook is the cheaper option if you do not plan to keep your book.

**Required access to Mastering Biology the online activity and homework tool. This comes included with a NEW physical textbook or ebook, but can purchased separately if you buy a used book. If you have a used physical book, you can buy the Mastering Biology access card at the bookstore. Why this extra tool? We class tested this tool with over 1500 students in the 2010-11 academic year and it was a big success.

Required reading: Particular chapters are required (see course outline for “Guided Reading” details) and you will be expected to have read them for Mastering Biology homework assignments and the exams.

HOMEWORK VIA MASTERING BIOLOGY.COM: (10% of your grade) Homeworks will be due every Sunday and Thursday night by 11:55 PM. Some assignments will take you as little as 15 minutes and others will take over an hour with the animations and short tutorials interspersed in the homework. **It is your responsibility to start it in a timely fashion, so that you finish it by 11:55 PM.** To be safe, assume your clock is 5 minutes slower than the official *Mastering Biology* time. Late homeworks will receive zero credit, even though you can still do them for practice. Do not count on the Mastering program to give an accurate account of how long an assignment will take. These estimates can be wildly off! There will be numerous graded at-home assignments. See my Goal #1 below and realize that I am trying to *help* you to succeed by giving you these regular assessments. **See blackboard for how to register for Mastering Biology.com**

COURSE WEBSITE: <http://blackboard.unc.edu/> (you will need your onyen to log on)

This site will have postings from my lectures such as outlines, power point slides, old exams, and supplemental material I mention in lecture. I will also post announcements regarding student concerns on this site. *It is your responsibility to check it regularly.*

SUPPLEMENTAL INSTRUCTION (SI): Your SI sessions will be offered 3 times a week. Each session will be scheduled for 1 hour. The times and location of these sessions will be posted on blackboard during the first week of class. You are not required to attend SI, but it is highly recommended, since this is your opportunity to get more “one-on-one” attention for this course. I suggest you fit one into your schedule early in the semester and attend weekly as if it is a required class. Your SI instructor’s contact information is listed above.

PARTICIPATION: Are you required to come to class? Are you required to pay attention? Are you required to discuss biology with your classmates during class? Nope, I cannot *make* you do any this. But, since this is your education and you want that 4.0 this semester, it behooves you to do all of these things that make you a successful student. I enjoy Facebook too, but put it away and participate in your education! As a reward, you will see some small bonus incentives on your exams. How will I know you are participating in this LARGE class? You will be using a program called PollEverywhere.com through your laptop or mobile phone. **See blackboard for the required registration information. If you do not register correctly, you do not have the opportunity for bonus points.**

WHAT YOU SHOULD BRING TO CLASS EVERY DAY:

1. Outlines from blackboard (either printed or on laptop).
2. Extra blank paper for drawings, notes, activities etc. (or tablet computer for drawing)
3. 3 x 5 index cards (with or without lines, preferably white).
4. Poll everywhere device: either your cell phone for texting or laptop/ipad/smartphone for web access

COURSE GOALS: Many students like to complain that this is a “weed out” course. Of course this is not true, but why does it have this reputation? Fact: the average grade in this class is in the C range; C is not *bad* it is *average*. Yet, many students also earn D’s and F’s in this class. This is absolutely shocking to first year students who have, in the past, received A’s in their high school classes. You are wondering...is there a pre-determined number of students that receive a C, D, or F? Nope. See below to see what grade *you* need to earn. In theory, if the whole class earns A’s, then the whole class is given A’s. So why don’t all students do as well as they think they will when they walk into class on the first day? My experience tells me that:

- 1) Some students do not have the active learning and studying skills that they should already have at the college level (It often takes these students an exam or two for them to recognize this.)
- 2) Some students do not actually put in the effort that is necessary (even though they may *think* they are putting in a big effort).

And, this brings me to the goals of my course...

1. This course should prepare you to succeed in future science courses. You should learn how to be an active learner in the lecture hall and you should learn how to actively study. There is no magic formula that works for each student. Some students find they learn best when they write and re-write notes, others need to



record the lecture and re-listen, others like to make models and “act out” biological processes. And what if you don’t plan to take any more science classes? Active learning and studying is a skill that is needed for any discipline! You can achieve these goals by attending a “how to study biology workshop” see date below on schedule, attending SI regularly (see below), using practice exams, and reading the book. And maybe most important: you should be thoroughly evaluating their exams to see what kinds of questions you are missing (remembering, understanding, applying). I take a special interest in students improving their skills and my office hours are always open (no appointment necessary) to discuss this. Many former students can attest to this.

Amended Bloom’s Taxonomy: developed as a method of classifying educational goals for student performance evaluation. You should think about this as you study for exams and ask yourself, am I using different kinds of thinking?

2. This course should provide you with the basic language and principles of biology. For those of you continuing in biology, this is just the tip of the iceberg. For others, this might be your only biology course! You can achieve this goal by practicing vocabulary and learning the latin/greek roots of words. You can draw slides and label the components. You can find common themes in the chapters we cover, such as how the theory of

evolution applies to chapters not specifically about evolution. Thoroughly learning the principles is about making connections between material learned at the beginning, middle, and end of the semester! Repetition is key to building a foundation of knowledge (and that is why you have lecture, a textbook, SI, etc.).

3. This course should excite you about biology. Throughout the semester I hope you will ask yourself *and me*, why is this relevant to me? Some lessons will be obvious. Other lessons are less obvious to you. Early in the semester you will also learn how science is performed. I encourage you think about the content you learn through the semester and continually realize that each sentence in the textbook may represent years of rigorous testing and data collection. I hope that the biology that we learn this semester will cause you to ask more questions. You might even leave with more questions than answers!

EXAMS: There will be three exams given during the regular semester.

The format will be multiple choice, so bring two #2 pencils to the exam. These are not cumulative exams and will only cover the material specified on the course schedule. To see exam scores, log into student central and follow link for “results of machine scored exams”. There will be a final exam given, and it *will* be cumulative. For all exams, you will need your PID number as identification on your exam sheet. Additionally, you may be asked to verify your identity, so it is required that you bring your one-card to each exam. Failure to produce a one-card if asked may result in a zero on that exam. Test material to study: chapter reading outlines/homeworks, lecture activities, and power point slides. Therefore, to succeed in this class, it behooves you to take each reading/homework seriously and actively engage in all class discussions. Also, see the last page of this syllabus.

NO MAKE-UP EXAMS! NO EXAMS GIVEN EARLY!

(Your grade will be adjusted based on how many exams you take (see below how grade is determined))

HOW IS YOUR GRADE DETERMINED? *(Note: there will be no changes to HOW your final average is calculated at the end of the semester...so please don't ask!)* **Your final average is calculated:**

If you take all three semester examinations:

The lowest examination grade is dropped and the total for the semester =
 $(0.23 \times \text{exam}) + (0.23 \times \text{exam}) + (0.44 \times \text{final exam}) + (0.10 \text{ homework average})$

If you take any two semester examinations:

Both the exams you took will count and the total for the semester =
 $(0.23 \times \text{exam}) + (0.23 \times \text{exam}) + (0.44 \times \text{final exam}) + (0.10 \text{ homework average})$

If you take one semester examination:

The total for the semester =
 $(0.23 \times \text{exam}) + (0.67 \times \text{final exam}) + (0.10 \text{ homework average})$

If you take zero semester examinations: *(This rarely results in a passing grade—so, don't plan to do this.)*

The total for the semester =
 $(0.90 \times \text{final exam}) + (0.10 \text{ homework average})$

Here are the guidelines as to how I will convert your average to a letter grade:

A = or greater than: 92	C+ = or greater than: 70
A- = or greater than: 88	C = or greater than: 64
B+ = or greater than: 84	C- = or greater than: 56
B = or greater than: 80	D = or greater than: 50
B- = or greater than: 76	F is less than: 50

Course Schedule/Topics for Discussion

For each assignment, you have a “Guided Reading Assignment” with the same title that you should do before doing Mastering Homework. (See your outlines for the reading assignments). The idea is that Mastering will reinforce what you have independently learned from the reading. If you simply hunt and peck through the text to find the answers without doing the reading, you are missing a large chunk of information I expect you to be familiar with. You are ultimately responsible for information in “Guided Reading”. I cannot cover everything in class discussions. Homework assignments are shown in red.

W 8/24: Introduction

Due Thursday 8/25 by 11:55 PM: Two Mastering assignments: 1) Introduction to Mastering and 2) Exploring Life and the Process of Science

F 8/26: The Process of Science

UNIT I: CELL BIOLOGY

Sunday 8/28 HW- Macromolecules

M 8/29: Macromolecules

W 8/31: Macromolecules (cont.)

Thursday 9/1 HW: Cells

F 9/2: Cells

Sunday 9/4 HW (extension... due Tuesday 9/6): Membrane Structure and Function

M 9/5: LABOR DAY NO CLASS

W 9/7: Cells cont. and Membrane Structure and Function

Thursday 9/8 HW: Enzymes and Energy

F 9/9: Enzymes, Energy and begin Cellular Respiration

Sunday 9/11 HW: Cellular Respiration

M 9/12: Cellular Respiration

W 9/14: Cell Respiration/Photosynthesis

Thursday 9/15 HW: Photosynthesis

F 9/16: Photosynthesis (cont.)

Sunday 9/18 HW: Unit 1 Review Qs

UNIT II: GENETICS

M 9/19: Mitosis and Cancer

W 9/21: EXAM I (all material covered in class from 8/24-9/16)

Thursday 9/22 HW: Mitosis, Cancer and Meiosis (be sure to read two articles on Bb too).

F 9/23: Cancer cont. and Meiosis

Sunday 9/25 HW: Patterns in Inheritance I

M 9/26: Complete Meiosis and begin Inherited Traits

W 9/28: Inherited Traits (cont.)

Thursday 9/29 HW: Patterns in Inheritance II and Nondisjunction

F 9/30: Non-disjunction

Sunday 10/2 HW: DNA Structure and Function

M 10/3: DNA Structure and Function

W 10/5: Gene Expression: From DNA to RNA to Protein

Thursday 10/6 HW: The Flow of Genetic Information

F 10/7: From DNA to Protein (cont.)

Sunday 10/9 HW: Is Stem Cell Research Moving Forward?

(listen/read transcripts from NPR before completing homework).

M 10/10: Stem Cells

UNIT III: EVOLUTION/DIVERSITY/ECOLOGY

W 10/12: Introduction to Evolution

Thursday 10/13 HW: Unit 2 Review Qs

F 10/14: EXAM II (all unit 2 material covered in class from 9/19-10/10)

Sunday 10/16 HW: How Populations Evolve

M 10/17: How Populations Evolve

Last day to drop class or declare it P/F is Oct 17

W 10/19: The Origin of Species

Thursday no HW due (fall break)

F 10/21: NO CLASS: FALL BREAK

Sunday 10/24 HW: Extension not due until Tues 10/25: Two assignments: 1) Origin of Species and 2) Evolution of Vertebrate Diversity

M 10/24: Evolution of Vertebrate Diversity

W 10/26: Evolution of Vertebrate Diversity (cont.)

Thursday 10/27 HW: Population Ecology

F 10/28: Population Ecology

Sunday 10/30 HW: Interactions within Communities

M 10/31: Interactions within Communities

W 11/2: Plant Predators

UNIT IV: ANIMAL STRUCTURE AND FUNCTION

Thursday 11/3 HW: Animal Tissues and Homeostasis

F 11/4: Animal Tissues and Homeostasis

Sunday 11/6 HW: Digestion

M 11/7: Digestion

W 11/9: Digestion (cont.)

Thursday 11/8 HW: Circulation 1

F 11/11: Circulation

Sunday 11/12 HW: Circulation 2

M 11/14: Circulation (cont.)

W 11/16: Circulation (cont.) and begin The Immune System

Thursday 11/18 HW: Exam 3 Review Qs

F 11/18: Exam III (all material from W 10/12 – F 11/16)

Sunday 11/20 HW: The Immune System

M 11/21: The Immune System

W 11/23: NO CLASS: THANKSGIVING BREAK

Sunday 11/27 HW: Human Reproduction (extension until Tuesday 11/29)

M 11/28: The Immune System (cont.) begin Human Reproduction

UNIT V: Reproduction

W 11/30: Human Reproduction

Thursday 12/2: No HW

F 12/2: Human Reproduction cont.

Sunday 12/5 HW: Plant Reproduction

M 12/5: Plant Reproduction

W 12/7: LAST CLASS!

Cumulative FINAL EXAM: Friday Dec 16: 8-10:30 AM in Hamilton 100;

**please bring UNC one-card to show photo ID when you leave.*

Hints for doing well in this class:

- Read the textbook for each corresponding homework. Take your time and **be an active reader**.
- How to be an active reader? Fill out the “Guided Reading Qs” and add your own notes to them.
- **Review your notes multiple times in multiple ways!** The more times you review biology, the better it will stick. 1) read it in the book 2) hear it in class 3) review your notes 4) review all powerpoints 5) make flashcards 6) rewrite outlines 7) teach a friend or 8) explain it to the wall! 9) make up quizzes for yourself or a friend that you can do later.
- **REVIEW YOUR NOTES AFTER EACH CLASS!** *How long will this take? Set aside 15 minutes and make this a HABIT!! I guarantee that this will pay off.*
- **Attend each lecture, and pay attention.** Drink coffee if necessary! Take good notes to help yourself retain the information. (*A good student takes more notes than the instructor writes!*)
- Find a classmate or a group of classmates to study with. Talking about material will significantly enhance your learning, and it is a good way to be sure you took comprehensive notes. Don't *rely* on your group...you need to study alone before meeting with them!
- **“Reading over your notes” is NOT studying.** You need to “quiz” yourself in some way to see what you are retaining from your “reading”. Have you tried drawing the illustrations? Have you constructed flow charts or concept maps? Have you tried explaining the concept aloud? Have you made paper cut-outs and tried acting out the process? Have you compared and contrasted major concepts/processes that you have learned? Have you used the book's website for quiz questions?
- **Attend SI at least once a week.** One hour will not cut into your social life that much and it will reinforce the material in a way that we don't always have time for in lecture. Your SI instructor is really creative and has all kinds of tricks and tips. Check it out every week (even if you don't have any questions!) and always check out the SI folder on blackboard. Our own research at UNC tells us that the average of students that go to SI perform a half a grade better than the average of students that don't attend SI.
- Take your Mastering assignments as serious, independent work. Mastering is for you to “master” the material. You only cheat yourself if you do the assignments hunting and pecking for the answers in the book. Read the book and then try to answer from what you know.
- Take old semester exams as practice for each exam. These are posted on blackboard. Be prepared to take it in a quiet place for 50 minutes. Score it and see how well prepared you are. Then, go through it carefully to understand each question and answer choice. Why is each choice correct or NOT correct?
- Discuss material and concerns with me (Dr. Kelly Hogan) during office hours, after class, or by email. I am a really nice person...nobody to be scared of!! *But... you need to come see me well in advance of an exam. Come see me after the first exam if you did not do well. What suggestions can I have for you if you wait until you did poorly on all three exams?*
- Uphold the honor code. Observing the Honor Code means that during exams, you may **not** look at another person's exam; talk to anyone, either in person or by cell phone or email; or use the Internet, another person's calculator, or any other text or notes. Please report any violations that you observe.
- Get plenty of sleep before an exam! If you have followed my advice, you should be reviewing notes and relaxing the night before an exam.
- Free peer **tutoring** is available at Dey Hall on Tues and Wed evenings from 6-9 PM. There are not usually too many people there and you can often get one-on-one attention.
<http://www.unc.edu/depts/lcweb/>
- If you feel you need scheduled **tutoring** and one-on-one attention with a fulltime tutor, don't wait too long. See **Robin Blanton** at the Learning Center. She is the biology specialist and is wonderful. Schedule appointments through <http://learningcenter.unc.edu> However, her time fills up fast because she is popular! She does group sessions wonderfully too. Bring a friend!
(<http://learningcenter.unc.edu/services/Math%20and%20Science/Biology%20group/view>)