Biology 100, Spring 2013, Dr. Ribbens, 11:00 class

Class description: “(General Education/Natural Sciences) A laboratory course recommended for nonscience majors, relating reproduction, heredity, evolution, ecology, and behavior to human life and the problems of society. This general education curriculum course does not count toward a major or minor in biology. IAI: L1 900L.”

“In accordance with Illinois State Board of Education certification rules, all candidates seeking teacher certification are required by Western Illinois University to obtain a grade of “C” or better in all directed general education course, all core courses, and all courses in the option. Note: A “C-” is below a “C”.”

Course Goals:

1: Survey the field of biology, especially cells, genetics, evolution, and ecology
2: What is science, and how is science done?
3: How should a non-science major use science, especially biology, in their lives?

Class Plan: I have oriented the class around the lab topics. Each week we will explore content connected to the lab for the current week or the next week. On Friday, we will review the week’s lab, and tie this week’s lecture to next week’s lab.

Weekly Schedule: Before the week starts I will post a preparation powerpoint and a guide. You should download both of these and study them before we start the week. On Monday, we will dig into the concepts I want you to know for the week, and on Wednesday, we will do a case study. Fridays will be a combination of four things: talking about the lab you just completed this week, highlighting some important things about the upcoming lab, solving some problems using all of the material covered during the week, and we will end each Friday with a “minitest”. Note that there are some exceptions to this general schedule. We have no class January 21, no lab the week of February 11, and a test on the day before spring break.

Lab: You MUST be enrolled in a course lab, for which you will need a lab manual. I will not be teaching your labs, and if you have problems or questions about the lab the best place to begin is to talk to your teaching assistant (but of course come talk to me if you have a problem that doesn’t get resolved). At the end of the semester I will be given a number grade for you (maximum 150 points). I will add your lab score to your overall score. If you get less than 90 for the lab, or if you have two unexcused absences for labs, I am required to fail you for the entire course.

Grading:

Lab: 150 points max
Clickers: 150 points max
Midterm: 100 points max
Final: 100 points max
Minitests: 100 points max
I add up points at the end of the semester, and assign letter grades more or less along ten-percentile points: 90% and up is an A or A-, 80% and up a B+ B or B-, etc.

In addition to these points, I will also occasionally announce optional writing assignments (usually worth up to 10 points), and each review session you attend I will give you two points. These points will just be added to your point total.

Midterm grades: the registrar will ask me to assign midterm grades, and some university events (athletics etc.) also request midterm grade feedback. I will file these, and attempt to give the entire class feedback about your grades at those points. And I am of course very happy to discuss your grade with you at any point in the semester if you wish. Just come to my office and we’ll look it up. Just be aware that I won’t know your lab grade and some things (like clicker points) I will only be able to give you an estimated grade.

Minitests: I only have one test scheduled during the semester, plus the final exam. Instead of one or two other “regular” tests, each Friday we will end with a minitest. Typically the minitest will have one or two questions, and will be worth 10 points. Please note that in the grading outline above the minitests are worth 100 points; however, we have 13 minitests scheduled. If you take all thirteen minitests, at the end of the semester I will drop your lowest three minitest scores from the final grade calculation. If you miss class, that will be one of the tests I drop. If you have an excused absence schedule that will require you to miss more than three Fridays, you need to talk to me about it.

Clickers: You should already have purchased an iclicker from the bookstore. If you don’t have one, get one right away. (If your financial aid hasn’t come in yet come talk to me). We will be using clickers throughout the course. With the clickers, I can put a multiple choice question up on the powerpoint, you can enter your answer, and the computer magically records your answers and will display a graph showing how many students chose each answer option. I like clickers. They keep you awake, they let you and me know how you are doing, and they are fun. Most importantly, I have found that when I use clickers students typically get about 10% higher in the class. That’s great: my goal is for everyone to do well in this course. One warning: using someone else’s clicker for them if they don’t want to come to class is cheating, and I have given students a failing grade in the past for this.

Cases: Cases are just a problem for you to solve, usually set in the context of a story. We will work on cases most Wednesdays, usually with a combination of powerpoint, handouts, and breakouts into small group projects. I like cases, because one of my big goals is to get you thinking about biology and using your biological knowledge to solve real-world problems. They also are more interesting than simply listening to me talk.
**Small groups:** Why do I use small groups? First, because good educational research has found that most students learn an idea better by talking about it with other students. If you are a good student, explaining something to other students will help you to better socket your understanding into your overall mental framework. If you are a struggling student, you generally learn better by hearing a peer explain it than by hearing me explain it. We will use what I call informal small groups: three or so of you will get together for the day, and the groups can shift over the semester. Second, it is less workload for me to grade 25 group analyses than 120 individual analyses.

A few things about making small groups work: #1: pay attention to what I want the group to do, and focus on the assignment, not on chitchat. #2: if you have a group member who isn’t pulling his or her weight, you can vote them off the group! If you have problems with this, come talk to me after class. #3: shift responsibilities around. If you are the writer one week, have someone else do the writing next week.

Warning: I will be regularly having groups hand in their analyses, and I will be grading them. You will NOT automatically get the grade by just scribbling something down. I expect quality work. Secondly, I will NOT grade an analysis with just one name on it. You must be part of a group when we do group work. If this is a problem for you, come talk to me.

**Attendance:** I also use clickers to take attendance. If you forget your clicker, come down to the front and write your name on a piece of paper saying you forgot your clicker, so that I know you were in class (you won’t get the clicker points for that day). You will learn the material and demonstrate your ability most effectively if you attend classes. Therefore, attendance is required. Students who miss classes must write a paper about what we did in class the day you missed. THESE PAPERS ARE DUE WITHIN A WEEK, and if you don’t do them I will not grade your next exam. If you miss too many classes I reserve the right to assign additional assignments or other penalties, including failing the course. (How many is too many? Unless you have really good extenuating circumstances, I think missing ONE class is too many but ...)

**Piazza:**
https://piazza.com/class#spring2013/biology100
I’ve not used Piazza before, so this will be an adventure for us. I “think” it is going to be a good way to manage course information, allow you to ask questions and get them answered, and create another way for you to engage with the class and with biology. My plan is for us all to get enrolled on it, for me to figure out how it basically works, and for us to analyze homework problems in Piazza as well as in class. I’m hoping that we can also use Piazza to store mp4 files and powerpoints for you to download, and I’m hoping that it will be a better way for me to manage contacts back and forth with you than with email.

**Western Online:**
We have a WesternOnline page, which I will use to store files if I can’t figure out how to do that in Piazza. You will definitely be using WesternOnline for the lab portion of your course, and will hear more about it in lab.

**Email:** I use email a lot, and I expect you will regularly check your email for possible messages from me about the course. Email is also a good way to ask me questions, and I prefer that writing assignments be turned in as Word attachments to emails. (I will grade it and send you a reply that I did so via email). Written papers are easier for me to lose, and I will NOT grade writing assignments that are handwritten. I will always check my email within 24 hours (barring a major emergency, which I sure hope doesn’t happen), and if I get an email from you I will send you a reply.

**Textbook:** The lecture text is Campbell Essential biology with physiology 4th edition from Pearson Publishing. You will also need to purchase a lab manual for the lab. I will assign readings each week from this textbook, and some of our Friday problems will probably be taken directly from the textbook. If money is tight for you, I encourage you to find someone in class that you can share a textbook with, but I do want you to have access to one and to read the material assigned.

**Exams and minitests:** You will take a midterm, a final exam, and thirteen minitests. The questions on these tests will mostly be paragraph-or-so written answers. I do not use multiple choice questions on these tests, for several reasons. First, 25% of your grade is already multiple choice, from the clicker questions. Second, my classes do substantially worse when I give multiple choice tests. Typical multiple choice tests produce a class average of about 63%, whereas short answer tests are usually around 75%. But what I really like about short answer is that it gives you an opportunity to show me what you know about bigger concepts. Multiple choice the answer is right there, they usually focus on little picky details, and in an attempt to make it harder we try to hide the answer somehow. My goal isn’t to see if you can outwit me but to see what you can tell me about the concepts we have been exploring. So a typical question will be something like “What is Mendel’s second law, and when is it wrong?” I do not take points off for grammar or spelling mistakes, but if your answer is so befuddled because of them that I don’t understand what you are trying to say then you will lose points. Oh, one more thing: try to write neatly and in a reasonably large font, so I can read it! If I can’t read it I assume it is wrong.

**Legal Stuff and Behavior:**

Course Conduct: You are all adults, and you are in this class because you want to be in college. This means several things. First, you are responsible for your own learning. I am not responsible if you don’t study. Second, you should act responsibly in class. We may disagree, but we should always treat each other with respect. You can bring ipods, cell phones, computers, etc. to class. You will be talking in class. But the focus of class is **class**. Please don’t surf the web, call your friends, listen to music, or chat about other topics during class. Turn that cell phone off if you can’t leave it alone. Third, don’t lie to me. Finally, respect your fellow students. Stuff that
happens in class stays in class. Don’t gossip about them, and don’t do things that disrupt our learning.

Disabilities Statement: “In accordance with University policy and the Americans with Disabilities Act, academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. For the instructor to provide the proper accommodation(s) you must obtain documentation of the need for an accommodation through Disability Resource Center and provide it to the instructor. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact the Disability Resource Center at 298-2512 for additional services.”

One of the things this means is that I will work with you to help you deal with any disability you may have, but if you don’t let me know about it then it’s not my fault if it causes you problems, because I can’t come to you and suggest that you have a disability.

Speaking of disabilities, you should know that I have several problems. In particular I have retinitis pigmentosa, a genetic disease. In my case I have mild to moderate hearing loss (especially in the upper registers) and very limited peripheral vision. In other words, I’m legally blind, and I don’t see anything unless I am looking directly at it. What this means for you is that I may ask you to repeat something you say, and I may not see a hand held up or other things (students goofing off, people having problems, etc.). Please help me: if someone is trying to get my attention let me know about it, and be patient if I ask you to repeat yourself or speak more loudly. If someone is being disruptive, let me know, and tell them to shape up. And if I walk past you in the hall and don’t say hi, it doesn’t mean I don’t like you; it probably just means I didn’t see you!

Plagiarism / Team Work Warning: I have no objections whatsoever to you discussing course problems with other students in the course; in fact, I believe that team analysis and problem-solving can be a powerful learning tool, and I very strongly encourage you to work on the individual topics in teams. However, you must individually prepare your tests, writing assignments, minitests, and clicker questions. You may not give your clicker to a student to use if you are absent, or use another student’s clicker for them. Do not use other sources in your lab reports without properly citing the source. For more information, see http://www.wiu.edu/policies/ugdishst.shtml

Professor:

Dr. Eric Ribbens
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Cell phone: (309) 255-1650
I am a plant ecologist. I’m interested in what plants do, how they interact with other plants and with their environment. Professionally, I am best known for my work in developing spatial models of seedling distributions for use in computer simulation models, but I have also been studying a group of neotropical trees, a small cactus that grows in Illinois, and innovative teaching methods (such as clickers and cases). I have been teaching at Western Illinois University since 2000. I have two great teenaged daughters, I play flute or piano most Sunday mornings at University Baptist Church, and I’m the oldest brother in a big family (I’m one of 8 children, my parents have 22 grandchildren, and 1 greatgrandchild in the oven). I like jazz and blues, I have published some creative writing, and I think every freezer should hold some popsicles. I struggled with college ... after two years, I dropped out with a GPA of 1.6, and worked for years in factories before going back to college, at first at a community college at night.

Use me as a resource! DO NOT HESITATE to email me, ask me questions, or set up an appointment to meet with me ... it’s what I expect and want you to do. One of the best ways for you to learn is to ask questions. It’s not brown-nosing, it’s not unethical, and it’s not cheating.

**Daily Plan:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>J14</td>
<td>1 Microscope, Metrics, Computer</td>
<td>Intro Why science?</td>
<td>Can of Bull case</td>
<td>lab discussion minitest 1</td>
</tr>
<tr>
<td>J21</td>
<td>2 Sexually Transmitted Diseases</td>
<td>no class</td>
<td>Sex and Vaccination case</td>
<td>lab discussion minitest 2</td>
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<tr>
<td>J28</td>
<td>3 Reproduction and Development</td>
<td>Reproduction</td>
<td>Santhi case</td>
<td>lab discussion minitest 3</td>
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<tr>
<td>F4</td>
<td>4 Cell Structure and Function</td>
<td>Cells</td>
<td>A Diet to Die For Case</td>
<td>lab discussion minitest 4</td>
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<tr>
<td>F11</td>
<td>no lab, holiday Tuesday</td>
<td>Cell Division</td>
<td>cell division in gym?</td>
<td>minitest 5</td>
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<tr>
<td>F18</td>
<td>5 Cell Division</td>
<td>Mendel Story</td>
<td>Genetics</td>
<td>lab discussion minitest 6</td>
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<tr>
<td>F25</td>
<td>6 Monohybrid corn cross</td>
<td>Genetics</td>
<td>Make A Life to Save a Life Case</td>
<td>lab discussion minitest 7</td>
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<tr>
<td>M4</td>
<td>7 Genetics Problems</td>
<td>Genetics Analyses</td>
<td>Genetics Analyses</td>
<td>midterm</td>
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<td>M11</td>
<td>Spring Break Week</td>
<td>no class</td>
<td>no class</td>
<td>no class</td>
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<tr>
<td>M18</td>
<td>8 DNA fingerprinting</td>
<td>PCR, gel electrophoresis</td>
<td>The Case of the Druid Dracula</td>
<td>lab discussion minitest 8</td>
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<tr>
<td>M25</td>
<td>10 Antibiotic Resistance</td>
<td>Genetic Engineering</td>
<td>Tuberculosis Rabbit Case</td>
<td>lab discussion minitest 9</td>
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<td>A1</td>
<td>9 Ecology Part I</td>
<td>Evolution History</td>
<td>Darwin Story</td>
<td>lab discussion minitest 10</td>
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<td>A8</td>
<td>11 Ecology Part II</td>
<td>Levels of Ecology</td>
<td>Dead Zone Case</td>
<td>lab discussion minitest 11</td>
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<td>A22</td>
<td>12 Migration</td>
<td>Global Ecology</td>
<td>Mom Always Liked You Best</td>
<td>lab discussion minitest 13</td>
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<td>A29</td>
<td>14</td>
<td>Human Ecology</td>
<td>Too Many Deer Case</td>
<td>lab discussion course evals?</td>
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<td>M6</td>
<td>Finals Week</td>
<td>FYE May 6 8am</td>
<td>Large class May 8 noon</td>
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