



Zoology/Microbiology/Botany 3113

Cell Biology

Fall, 2006

Instructor

Dr. Randy Hewes

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- Office: Stephenson Research and Technology Center room 2021;
- Office Hours: M 12:30-4:30pm & W 8-10am

Teaching Assistants (TAs)

We have two TAs, Neda Nikpoor and Heather Rice. They did great in 3113 last year, and they will be available to answer questions, to collect and pass out papers, and to assist with grading and review sessions.

Prerequisites

ZOO 1114 or BOT 1114 and CHEM 3013 or CHEM 3053

Time & Place

10:30-11:20 am, M/W/F in George Lynn Cross 123.

Textbook

The World of the Cell, 6th Ed., by Becker, Kleinsmith & Hardin (Benjamin/Cummings).

Readings

Please refer to the course calendar below for the readings schedule. To get the most out of lecture, you should do the assigned reading before you come to class, and then you should review the sections that we covered after lecture. On the exams, I will test you on material from the lectures. I intend the text to serve as a resource for review and additional explanation of facts and concepts presented in lecture.

Grading

I grade on a letter scale, with pluses and minuses. However, only a letter grade (without a + or -) will be reported on your transcript. You can expect that about 20% of the class will receive A's, 30% B's, 35% C's, 10% D's and 5% F's. However, I will assign grade cutoffs based on my assessment of student understanding and overall class performance, so these percentages are only a rough estimate. I will post all grades on WebCT as soon as possible.

Grade Percentages

Graded problem sets and projects:	16%
Midterm 1:	18%
Midterm 2:	18%
Midterm 3:	18%
Final Exam:	30%
Total	100%

These percentages may change depending on changes in the course schedule, etc.

Unless stated otherwise, each graded problem set and project will count equally toward the full graded problem set and projects score, which makes up 16% of the course grade.

Exam Style, Content, and Re-grades

Exams will be mostly scantron-graded (multiple choice, matching, true/false). In the past, I have also sometimes included short answer or brief essay types of questions. The final exam will include new material covered after the last midterm as well as material comprehensive to the entire course. Exam answers will be posted after class on WebCT. **Note:** Please bring a #2 pencil and your ID with you for all exams.

If you believe that one of your midterms may have been graded incorrectly, then you should see me before finals week. For the final exam, you should see me within 5 days after I have posted the final exam grades. I will not consider grade protests after these deadlines.

Problem Sets

I will provide problem sets for you to work on prior to each exam. These will be graded, and there will be several throughout the semester. These are a great way for you to learn some of the material, and they should help you to perform better on certain sections of the exams.

Make-up Policy

No make-up examinations will be given. It is therefore crucial that you attend all scheduled examinations and complete all work on time. The only exceptions to this policy will be for absences due to Provost-approved, university-sponsored activities or for legally required activities. Documentation of such exceptions must be provided to me before the affected exam.

Extra credit

Unless announced and offered to the entire class, no extra credit will be given.

Course Withdrawals and Audits

I follow the spirit of the OU grading regulations and the guidance of the OU Board of Regents. This means that if a student is failing the course, and more than 6 weeks have passed, I will record a grade of F on the drop slip. I do allow audits, but only if the student is passing the course, and only within the first 10 weeks of classes.

Academic Misconduct

All graded work should be your own, unless I indicate that collaboration is allowed. It is your responsibility to make sure that you have read and understand the University of Oklahoma academic misconduct policy. I will aggressively pursue any evidence of academic misconduct, and any violations will be dealt with as specified by OU policy. This ranges from receiving a zero on the work in question, to an F in the course, to suspension or expulsion.

Reasonable Accommodation

The University of Oklahoma is committed to providing reasonable accommodation for all students with

disabilities. Students with disabilities who require accommodations in this course should contact me as early in the semester as possible and may arrange to see me confidentially to discuss their needs. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

Important Dates

8/25: Final day to register or add
9/4: Last day to drop without a W
9/29: Last day for automatic W
10/27: Last day to drop without petition to Dean

Final Exam - Fri., Dec 15, 8-10 am in GLC 123

Final Examination Conflicts and Multiple Exams

If you have more than two final examinations in one day, or if you have a second final exam scheduled at the same time as the final exam for this course, see <http://admissions.ou.edu/finalsfall.htm> for the OU policies. In almost all cases, one of your other instructors will need to provide an alternative time for you to take their final exam. For example, if you have three or more final exams on the same day, the instructor(s) giving the third and subsequent exams must provide make-up exams during finals week. If you have two or more final exams scheduled at the same time, you should attend the exam for the class that met first during the week, according to your class schedule, and the other instructor(s) must provide make-ups. You must inform your instructor of these conflicts before the end of the 12th week of classes.

Audits

You may audit this course if you do so before the audit deadline and if you are passing at the time that the change is processed.

Online Content

ZOO/BOT/MBIO 3113 Web Site:
<http://www.eDrosophila.com/3113.htm>

WebCT: <http://webct.ou.edu>. I will use this site to post grades, some assignments, class notices, and other material. To log on, you will need to use your regular OU user name (4+4). Your default password is your birthdate in mmddyyyy format. For example, if your birthday is August 15, 1979, your default password will

be 08151979. You will be prompted to change this password upon initial login. If you have trouble using WebCT for the first time, please refer to the "Trying to log in?" link, which you can access from the WebCT welcome page. If you find that this doesn't resolve your problem, please call Information Technology, at 325-INFO.

3113 Honor Roll

The names of the student(s) with the top overall score in this course earn a place on the Cell Biology 3113 Honor Roll. These students have the option of remaining anonymous, if they prefer. In addition to the listing here, the honor roll is on my web site, and I also plan to post it on a plaque for display in Richards Hall.

2005, Jerrod Hampton

2004, Justin Hire

2003, Michael Johnson

2002, Reeve Bull

How to Study for Cell Biology:

The only way that most of us remember new material is to go over it several times. **Repeated exposure** and **practice** are essential. If you just attend the lectures and do the required readings, then you will be making a good first start towards learning cell biology. You will feel familiar with the material. However, it is likely that you will not **know** it, and when it comes time for you to take the exams, you may be surprised by how difficult the questions seem.

OK, you say, so how do I get to know this stuff?!

First, attend all the lectures and take good notes on what you learn. Write it all down! Studies show that you'll forget a lot of what you hear in lecture within about 15 minutes. You may have a good overall picture of what was discussed, but you'll forget many of the important details. You will forget even more after a day or two (certainly by the time of the exam). So, if you want to remember this material, you need to work with it!

You may find it very helpful to re-write your notes after class. This makes them easier to read than in-class-hurried-chicken-scrawls, but this also gives you a chance to fill in missing information while it is still pretty fresh in your mind. For vocabulary, and certain concepts, you may find it helpful to prepare flash cards. Which terms are important? In the text, these are in bold, and you will find a list of Key Terms at the

end of each chapter. I'll define others in lecture. You may also find the problem sets at the end of each textbook chapter to be helpful—the questions are often different than the kinds that I will most likely ask on the exams (many involve mathematical problem solving), but they are a **very good** way for you to understand the material at a deeper level. If you do this, you will most likely remember it longer. I will post the answers to these textbook problem sets on WebCT.

As a next step, you should test yourself. Try writing all the steps of a complicated process out on a sheet of paper or on a chalkboard. Draw a diagram and try to label all the parts. Do all of the above as much as possible without the aid of your text or your notes, and check back with these to see what you forgot. Then, for the concepts that still give you trouble, do it all again.

Many people find that it is **very** helpful to practice going over material like this with friends. So, if you are one of these people, be sure to line up a study partner early, and test each other on the material while munching on popcorn or a pizza. But, be sure to choose a study partner wisely. My advice: pick a nerd (like me). You'll get a lot more studying done!

Be sure to do the assigned readings before class. A lot of what you hear in class may be unfamiliar, complicated material. In general, the readings will cover much of the same stuff, and usually in more detail than will be possible in class, where we'll just touch on the high points. Therefore, if you do the readings first, the lectures will be much easier to understand. You will also find it easier to take notes and concentrate on the lecture at the same time—if you know something was explained well in the book, you won't have to worry as much about jotting down everything I say.

Finally, don't fall behind. Keep up with the readings and with reviewing your notes. If you leave your studying to the night before the exam, you will get overwhelmed!

So, that's really it in a nutshell. If you want to learn how to play a clarinet concerto, or if you want to hit a good tennis serve, you can't do it well after just one try. You have to rehearse it over and over, and you have to spend extra time on the rough spots. Learning cell biology is no different!

Course Calendar

This schedule is tentative and is subject to change. Additional graded material and/or assignments may be announced in class and on WebCT. Unless indicated, readings are from the textbook and should be done before the period for which they are listed.

<u>Period</u>	<u>Date</u>	<u>Topic</u>	<u>Readings</u>
1	21-Aug-2006	Course Introduction	
2	23-Aug-2006	Cell Overview – Macromolecules and Proteins	1-20, 25-53
3	25-Aug-2006	Cell Overview – DNA, Carbs, and Review of Organelles	53-66, 74-104
4	28-Aug-2006	Cell Overview – Free Energy	105-126
5	30-Aug-2006	Cell Overview – Enzymes	127-143
6	1-Sep-2006	Cell Overview – Enzymes 2	143-153
7	4-Sep-2006	Labor Day Holiday	
8	6-Sep-2006	Membranes and Signals – Membrane lipids	20-25, 66-73, 154-173
9	8-Sep-2006	Membranes and Signals – Membrane proteins and passive transport	173-199
10	11-Sep-2006	Membranes and Signals – Active membrane transport	199-212
11	13-Sep-2006	Membranes and Signals – Electrical signaling	212-220, 363-377
12	15-Sep-2006	Membranes and Signals – Electrical signaling II	
13	18-Sep-2006	Review or problem set discussion	
14	20-Sep-2006	First Midterm Exam	
15	22-Sep-2006	Membranes and Signals – Action potential propagation	377-380
16	25-Sep-2006	Membranes and Signals – Synaptic transmission	380-391
17	27-Sep-2006	Membranes and Signals – Intracellular messengers	392-399
18	29-Sep-2006	Membranes and Signals – Intracellular messengers II	399-404
19	2-Oct-2006	Membranes and Signals – Intercellular messengers	404-414, 482-496
20	4-Oct-2006	Organelles and Energy – Cell junctions and the endomembrane system	496-509
21	6-Oct-2006	Texas Friday Holiday	
22	9-Oct-2006	Organelles and Energy – The secretory pathway	318-335
23	11-Oct-2006	Organelles and Energy – Secretory pathway II	335-362
24	13-Oct-2006	Organelles and Energy – Glycolysis and fermentation	221-238
25	16-Oct-2006	Organelles and Energy – Respiration and the TCA cycle	238-259, 414-419
26	18-Oct-2006	Organelles and Energy – The Electron Transport System	259-275
27	20-Oct-2006	Organelles and Energy – ATP synthesis and photosynthesis	275-317
28	23-Oct-2006	Second Midterm Exam	
29	25-Oct-2006	Movement and Division – Microtubules	425-437
30	27-Oct-2006	Movement and Division – Microfilaments	437-452
31	30-Oct-2006	Movement and Division – Microtubule Motors	453-461
32	1-Nov-2006	Movement and Division – Myosin motors	461-472
33	3-Nov-2006	Movement and Division – Cell division and cell cycle	473-481, 576-586
34	6-Nov-2006	Movement and Division – Cell cycle and growth factors	419-425, 586-603, 775-796
35	8-Nov-2006	Genes – Meiosis and DNA structure	510-533, 604-617
36	10-Nov-2006	Genes – Haploid heredity and DNA packaging	533-553, 617-629
37	13-Nov-2006	Genes – DNA replication	554-572
38	15-Nov-2006	Genes – DNA repair	572-576, 762-775

39	17-Nov-2006	Genes – Transcription I	661-683
40	20-Nov-2006	Third Midterm Exam	
41	22-Nov-2006	Thanksgiving Holiday	
42	24-Nov-2006	Thanksgiving Holiday	
43	27-Nov-2006	Video and Discussion	
44	29-Nov-2006	Video and Discussion	
45	1-Dec-2006	Genes – Transcription II and Translation	648-661, 684-715
46	4-Dec-2006	Genes – Genetic Variation II	
47	6-Dec-2006	Genes – Gene Regulation I	629-648, 715-741
48	8-Dec-2006	Genes – Gene Regulation II	742-761
49	15-Dec-2006	Final Exam, 8-10 am, GLC 123	