

## BIOL 1005 – Concepts in Biology Fall 2008

**Concepts in Biology** is a general-education, natural sciences course. It is an introduction to the life sciences, focusing on the structure and function of organisms and their relationship to the environment. Specifically, in this class we'll talk about the qualities that unify living things (chemistry, cell structure, metabolism), the qualities that make them different (genetics), the history of, and variation in, life (evolution, diversity), and what living things do with their time (ecology).

**Instructor:** **Dr. Mariëlle Hoefnagels**, Associate Professor, Depts. of Botany/Microbiology and Zoology  
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### Laboratory instructors:

#### Mr. Jonathan (Jon) Shik

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### Class times:

**Lectures:** Tuesday, Thursday 10:30-11:45 a.m. AND Wednesday 3:30-4:20 p.m. (GLCH 131)

**Laboratories:** Tuesday OR Thursday 1:30-4:20 p.m. (GLCH 230/231)

### Books and materials (required):

- **Text:** *Biology: Concepts and Investigations* (2009) by Hoefnagels\*. We are using a customized version of the book; it includes only selected chapters and comes bundled with an e-book code.
- **Laboratory Manual:** *Symbiosis*, a customized lab manual for this class. Please do not use a lab manual from a previous semester!
- **Interwrite PRS clicker:** You'll need this for lectures, exams, and lab. The clicker website, <http://www.interwritelearning.com/support/training.php>, has online tutorials.

### Other resources:

- **Course web site:** <http://faculty-staff.ou.edu/H/Marielle.H.Hoefnagels-1>. Among other things, you can find review sheets, guided reading questions, and old exams on my website.
- **Learn:** <http://learn.ou.edu>. This is where you will complete your weekly online lecture quizzes, look for course announcements, and check your grades.
- **LON-CAPA:** <http://ou.lon-capa.net>. This is where you will complete pre- and post-lab assignments. Log in using your OUNet ID (4+4); your initial password is your first name with the first letter capitalized (e.g. Mary). Please change your password as soon as you log in.
- **Turnitin.com:** [www.turnitin.com](http://www.turnitin.com). You will submit most of your written assignments here. The first time you visit the site, click on the New Users link, indicate that you are a student, and enter the Turnitin class ID and password (for Jon's students, the class ID is 2344925 and the password is jonlab1; for students in Margarita's lab, the class ID is 2344937 and the password is marlab1). You will then create a user profile (you can claim 5 points for completing this task at a learn.ou.edu "quiz").
- **OU Library Electronic Reserve:** <http://libraries.ou.edu/eresources/reserves/>. You can find articles for Discover assignments here. Log in using your 4+4 and OU password. Select "BIOL", then BIOL 1005.

\*All royalties earned from textbook sales at OU will be donated to an OU book scholarship fund.

## Grading:

**Semester grades** will be assigned according to the following scale (*subject to adjustment if necessary*):  
**A = 90% and above; B = 80-89%; C = 70-79%; D = 60-69%; F = 59% and below.**

### Point distribution:

Item	Number	Points (ea.)	Total Points
Midterm Exams	3	100	300
Final Exam	1	200	200
Laboratory			250
Pop Quizzes	33 or more	3	100
Online Quizzes	14	5	70
Discover reports	3	25	80*
<b>TOTAL</b>			<b>1000</b>

\*Includes 5 points for creating a user profile at turnitin.com; see “quiz” on learn.ou.edu

**Midterm exams (100 points each; 300 points total):** Format will be partly true/false and multiple choice (total of 75 points) and partly short answer (total of 25 points). Exams will emphasize material from lecture but may also include questions from lab.

**Final exam (200 points):** Format will be entirely true/false and multiple choice. Fifty points (25 questions) will come from each of the four sections of the course.

**Laboratories (250 points):** Most labs will include a LON-CAPA pre- and post-lab assignment. Most labs will also have clicker questions during the lab period (you will be allowed one lab-specific “free pass” card for when you are in lab but forgot your clicker or your batteries die). In addition, some of the labs (marked \*\*\* in the lab schedule) have an additional assignment worth 10-30 points. Your TA will tell you the due dates for each assignment. A limited number of extra-credit points will also be available.

**Pop quizzes (100 points)** will be unannounced and can occur at any time during lecture. Each will be worth 3 points, and most will require you to use your clicker. If I give more than the 33 needed to acquire 100 points, I will drop one or more of your lowest score(s).

**Weekly online quizzes (70 points total):** Each week, a 5-point quiz covering the following week’s textbook reading will appear on Learn. Each quiz lists the specific sections to be covered, and each will be available ONLY from Thursday at noon to Tuesday at 10:30 a.m.

**Discover article assignments (80 points total):** You will choose three of four assignments about biology-related articles from *Discover* magazine. Article choices and due dates appear at the end of this syllabus. Your reports will be worth 25 points each (+5 points for creating a user profile at Turnitin.com; see “quiz” at Learn).

### Make-ups and late work:

- **Midterms:** No make-ups. However, the final exam will be structured in sections corresponding to each of the four sections of the course. If you miss one midterm exam, you will receive a score for that midterm equivalent to your score (percentage basis) on the corresponding portion of the final exam. In that case, you *may not* take advantage of the improvement policy described below. If you miss more than one midterm exam, you will receive for the first missed exam a score equivalent to the corresponding portion of the final exam, and a zero on subsequent missed exams.
- **Pop quizzes:** The pop quizzes are designed to help you work with the material as it is presented in class; this purpose would be defeated if you were allowed to make them up. If we have more than 33 pop quizzes, however, I will drop one or more of your lowest pop quiz scores. Also, you will be allowed two use-‘em-or-lose-‘em “free passes” for when you are in lecture but forgot your clicker or your clicker’s batteries die.
- **Weekly online quizzes:** No make-ups; each online quiz will be available for at least five days on the internet. You are responsible for getting to a computer and completing each quiz on time.
- **Discover article assignments:** 5 points will be deducted from your score for each day you submit a report past the deadline.

- **Laboratories:** Each LON-CAPA assignment will be available on the internet. You are responsible for getting to a computer and completing each assignment on time. In addition, we do not have time or resources to develop make-up lab activities. Please also note that you *must* attend the lab section for which you are registered. If you must miss lab, please contact me or your teaching assistant *in advance*.
- **Final exam:** University policy prohibits make-ups for final exams except for *emergencies* (personal illness or serious illness or death in immediate family) or *academic conflict* (more than two exams in one day or two at the same time). Please note that if you work, you are responsible for arranging your work schedule to enable you to attend the final exam. The University also prohibits early final exams, so check your schedule before booking travel.
- **In general:** If you have missed labs, a Discover assignment, or a large number of pop quizzes because you are ill or because of an extended family emergency, please provide written documentation on your first day back in class. (You can miss one midterm exam for any reason, so you do not need to provide documentation for that.)

**Improvement policy:** Suppose you have a lousy day and really mess up on one of the midterm exams. Not to worry, because you will have a chance to redeem yourself (*but only if you have not missed any midterms; see above*). As noted above, the final exam will be structured in sections corresponding to each of the four sections of the course. When I calculate your grade, I will compare your score (percentage of possible points) on each section of the final to your score on the corresponding midterm. If your score on one section of the final is higher than the corresponding midterm score, I will award you the difference. If you improve in more than one section, I will award you only the points for the single greatest difference. Note that *I will not take points away* if you happen to do worse on a section of the final than you did on the corresponding midterm!

**Other policies:**

- **Exam re-grades:** If you believe that a question on an exam was misgraded, you must bring it to my attention before the date of the next exam.
- **Academic integrity:** Academic misconduct includes cheating, plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any other action that may improperly affect the evaluation of your performance. It also includes assisting others in any such act. Penalties may include grade penalties and disciplinary action from the University's Academic Misconduct Board. For more information, visit <http://www.ou.edu/provost/pronew/content/integritymenu.html>.
- **Reasonable accommodation:** Students with disabilities who require accommodations in this course should speak with me as early in the semester as possible. Students with disabilities must be registered with the Disability Resource Center (<http://drc.ou.edu/>) prior to receiving accommodations in any course.
- **PLEASE turn off cell phones** during class. Also, I encourage your enthusiasm and participation, but please do not socialize during class, as it is very inconsiderate of fellow students.
- **Laptop computers:** If you wish to use your laptop during lecture, please sit at the rear of the class so your screen does not distract your fellow students.

**E-mail contact with the class:** I occasionally e-mail the whole class at once to make announcements, send reminders, etc. You should therefore check your email frequently. *It is best if you use your OU email*. But if you use a different one, please follow these EASY instructions that will enable my e-mails to the class to reach you too:

1. Go to <http://account.ou.edu>
2. Log in using your OUNet ID (the first four letters of your last name and the last four digits of your OU ID) and OUNet Password.
3. Enter the email address you use at "Forward the above acct to:"

That's it! Now all your OU e-mail will be automatically forwarded to the e-mail address you use. (Please note that OU does not guarantee email delivery to non-OU email accounts.)

**Summary of important dates (see academic calendar for more information):**

**Last day to drop classes without a grade record:** Monday, September 8 (start of Week 3)

**Last day to drop (automatic “W”):** Friday, October 3 (end of Week 6). Please note that if you withdraw any time *after* this date, I will give you a W for the class if you have a chance to pass at the time of withdrawal. If you will fail, academic standards require that you receive an F.

**Petition to dean required to drop (“W” or “F”):** Mon., Nov. 3 (beginning of week 11) to Fri., Dec. 12

**DID YOU KNOW????** Universities expect you to spend 2-3 hours of study time **OUTSIDE OF CLASS** for *each credit hour*! There is a lot of material to cover in any introductory course, but you can do very well in any class if you decide to commit the necessary time to your education.

**Some study tips:**

- **Come to class.** But don’t just bring your body; bring your mind too. If you just goof off or daydream while you’re in class, you might as well not come. Stay alert and listen to the lecture. Students who have done well in past semesters can tell you that it’s much easier to study for exams if you paid attention to the explanations in class.
- **Review your lecture notes regularly (at least once a week).** Use your book to fill in gaps as you review your notes. The reason for doing this is that your lecture notes will make less and less sense to you as time goes on. If you wait until you’re studying for an exam, there will be a lot of stuff that made sense in lecture that just doesn’t make sense anymore – even if you paid attention in class.
- **Don’t just memorize words.** Make sure you understand the material – not just definitions, but also how the different concepts and ideas relate to each other. Try to explain ideas in your own words so you will remember them. Biology is complex, and this will take some time, but it is very rewarding once you “get it.”
- **Get help when you need it.** Ask questions as they arise – in lecture, in lab, by e-mail, during office hours, at the Action Center, etc.
- **Use old exams wisely.** I suggest that you take blank exams, without your notes, to judge how well you know the material and to see what kinds of exam questions I ask. Although each exam follows the same format, the questions differ from semester to semester. It is dangerous to just study the old exams instead of your notes!

**Also, check my website for tips written by many of the students who have earned an A in previous semesters!**

## Discover Article Reports

Each Discover assignment is worth 25 points; you can choose to complete **any three of the four**. I will not grade more than three assignments for any student.

All articles are on OU Library E-Reserve (<http://libraries.ou.edu/eresources/reserves/>). Please read the assignment instructions ("Read Me First!") in the Content area of learn.ou.edu, then submit your reports to **Turnitin.com**. Note that if you do not spell-check and proofread your assignment, I will subtract 5 points from your assignment. In addition, I will deduct 5 points for every day you turn in your assignment late.

Here are the questions you will answer for each article (note that "1 paragraph" means AT LEAST 4 meaningful sentences):

1. What is the title of the article you chose?
2. (2 paragraphs, 10 points possible) Summarize this article in your own words (i.e. do not use extensive quotes from the article in your summary). As appropriate, include the main idea of the article, the research questions and how scientists are answering them, their conclusions, etc.
3. (2 paragraphs, 10 points possible) I chose these articles because they are connected in some way to concepts I am covering in lecture. In two separate paragraphs, name two different topics from the article and explain the lecture concepts that the topics are related to. For each paragraph, I want you to MENTION the topic from the article, but the EXPLANATION of the lecture concept should make up the majority of the writing. The point here is to demonstrate your understanding of the lecture concept.
4. (1 paragraph, 5 points possible) Explain how the research described in this article is important to you personally OR to society as a whole (or both).

There is a template you can use for your assignments in the Content area of Learn. Regardless of whether or not you use the assignment template, please number each of your responses to correspond to the questions listed above.

Here is the list of articles to choose from:

Ass't	Due on or before:	Choose ONE article for each due date
#1	Thursday, Sept. 18 (Week 4)	"Vitamin Cure?" by Susan Freinkel; <i>Discover</i> , May 2005 "The Covert Plague: Have You Got It?" by David Ewing Duncan; <i>Discover</i> , December 2005 "Plastic People of the Universe" by Jill Neimark; <i>Discover</i> , May 2008 "Medicine's Magic Bullets?" by Jeanne Lenzer; <i>Discover</i> , July 2008
#2	Monday, Oct. 20 (Week 9)	"Native America's Alleles" by Jeff Wheelwright; <i>Discover</i> , May 2005 "When a Woman Goes Bald" by Barry Yeoman; <i>Discover</i> , February 2006 "Mendel's Mouse" by Carl Zimmer; <i>Discover</i> , May 2007 "Born Gay" by Michael Abrams; <i>Discover</i> , June 2007 "Citizen, Heal Thyself" by Jeanne Lenzer; <i>Discover</i> , Sept. 2007
#3	Thursday, Nov. 20 (Week 13)	"The Day Everything Died" by Karen Wright; <i>Discover</i> , April 2005 "Do Jellyfish Rule the World?" by Thomas Mallon; <i>Discover</i> , Sept. 2007 "Did Life Begin in Ice?" by Douglas Fox; <i>Discover</i> , Feb. 2008 "Super Bugged" by Jessica Snyder Sachs; <i>Discover</i> , March 2008
#4	Thursday, Dec. 11 (Week 16)	"Earth Without People" by Alan Weisman; <i>Discover</i> , February 2005 "Return of the Aral Sea" by Eve Conant; <i>Discover</i> , September 2006 "Can Coal Come Clean?" by Tim Folger; <i>Discover</i> , December 2006 "Sweeping the Ocean Floor" by Robert Kunzig; <i>Discover</i> , June 2007 "Ocean Reflux" by Kathleen McAuliffe; <i>Discover</i> , July 2008

### BIOL 1005 Lecture and Laboratory Schedule (subject to change)

Week	Date	Lecture Topic	Textbook	Lab Topic(s)
1	Tues. Aug. 26	Introduction: Course overview		Intro to Concepts labs
	Wed. Aug. 27	Scope and themes of biology	1.1, 1.2	
	Thurs. Aug. 28	Scientific inquiry	1.3	
2	Tues. Sept. 2	Essential cell chemistry: the basics	2.1	Process of sci. inquiry AND Tools of science** (Homework – 10 pts)
	Wed. Sept. 3	More cell chem: bonds & molecules	2.2	
	Thurs. Sept. 4	More cell chemistry: water	2.3, 2.4	
3	Tues. Sept. 9	Organic molecules	2.5	Using the microscope
	Wed. Sept. 10	More organic molecules	2.5	
	Thurs. Sept. 11	More organic molecules; membranes	2.5, 3.2	
4	Tues. Sept. 16	Cell structure; begin metabolism	3.1, 3.3-4	Digestion** (Abstract – 15 pts)
	Wed. Sept. 17	More metabolism	4.3-4, 5.1, 6.1	
	Thurs. Sept. 18	Catch-up and review for Midterm 1		
5	<b>Tues. Sept. 23</b>	<b>Midterm 1 (👉)</b>		Chicken Wing Micro. Pt. 1** (Exper. design – 10 pts) <i>Get pots &amp; seeds for wk. 11</i>
	Wed. Sept. 24	What's DNA for? Protein synthesis	7.2, 12.1-2	
	Thurs. Sept. 25	More protein synthesis; mutations	12.3, 12.5	
6	Tues. Sept. 30	More mutations	12.5	Chicken Wing Micro. Pt. 2 <i>Get petri dish for next week</i>
	Wed. Oct. 1	Viruses	17.1, 17.2	
	Thurs. Oct. 2	More viruses; sexual/asexual repro.	17.3, 9.1	
7	Tues. Oct. 7	Binary fission, DNA replication	18.4, 7.3	Chicken Wing Micro. Pt. 3** (Abstract – 25 pts) AND Microbes & disease
	Wed. Oct. 8	Mitosis, cancer	8.1, 8.2, 8.4	
	Thurs. Oct. 9	More cancer, meiosis	8.5, 9.2, 9.3	
8	Tues. Oct. 14	More meiosis, Mendelian inheritance	9.4-5, 10.1	Fun with genetics!** AND DNA Technology Pt. 1 (Homework – 10 pts)
	Wed. Oct. 15	More inheritance	10.2	
	Thurs. Oct. 16	Even more inheritance ( <i>or guest lec.</i> )	10.4, 10.5	
9	Tues. Oct. 21	Nondisjunction; DNA technology	8.1-2, 9.6, 12.6-7	DNA technology Pt. 2** (Turn in results – 10 pts)
	Wed. Oct. 22	Catch-up and review for Midterm 2		
	<b>Thurs. Oct. 23</b>	<b>Midterm 2 (👉)</b>		
10	Tues. Oct. 28	Intro. to evolution	15.1-6; 16.4	Fossils ** (Worksheet & HW – 30 pts) <i>Meet at SNOMNH at 1:30</i>
	Wed. Oct. 29	Evolution and natural selection	13.1, 13.2	
	Thurs. Oct. 30	More natural selection; speciation	13.3-4, 14.1	
11	Tues. Nov. 4	Speciation; origin of life	14.2, 14.4, 16.1	Flowers, fruits, and seeds <i>Bring your plants!</i>
	Wed. Nov. 5	Origin of life; prokaryotes	16.2, 18.1	
	Thurs. Nov. 6	Prokaryotes; origin of euks; Protista	18.3, 18.5, 16.2, ch 19	
12	Tues. Nov. 11	Multicellularity; land plants	Ch. 20	Animal diversity I
	Wed. Nov. 12	More plants; fungi	21.1, 21.6	
	Thurs. Nov. 13	Animal diversity	Ch. 22	
13	Tues. Nov. 18	More on animals	Ch. 22	Animal diversity II
	Wed. Nov. 19	Still more on animals	Ch. 23	
	Thurs. Nov. 20	Catch-up and review for Midterm 3		
14	<b>Tues. Nov. 25</b>	<b>Midterm 3 (👉)</b>		No labs! ☹☹
	Wed. Nov. 26	Thanksgiving holiday		
	Thurs. Nov. 27	Thanksgiving holiday		
15	Tues. Dec. 2	The biosphere; biomes	Ch. 41	Animal behavior ** (Presentation -- 5 pts)
	Wed. Dec. 3	Population dynamics	Ch. 39	
	Thurs. Dec. 4	Community ecology	40.1, 40.2	
16	Tues. Dec. 9	More communities; ecosystems	40.3, 40.4	Art and Ecology ** (Worksheet & pres. – 15 pts) <i>Meet at FJMA</i>
	Wed. Dec. 10	More ecosystems; human impacts	Ch. 42	
	Thurs. Dec. 11	Catch-up and wrap-up		
<b>Finals</b>	<b>Fri., Dec. 19</b>	<b>Final Exam, 8:00-10:00 a.m.👉</b>		

\*\* Lab has additional written or oral assignments. Check with your TA for details.