

# Biological Principles: Unity (Biol 105)

Section A09C • Spring 2013

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Just down the hall from the lecture pit  
**Office Hours:** TWR 12:30–3PM, F 10:30–1PM

This course is a part of the **liberal arts** curriculum. The Association of American Colleges and Universities uses the term “liberal education” to refer to a philosophy of education that empowers individuals with broad knowledge and transferable skills, and that cultivates social responsibility and a strong sense of ethics and values. Within this context, our specific goal in this course is to provide you with basic knowledge about life and how it operates. For some (majors in the sciences, nursing, or kinesiology), this is a precursor to further science coursework. For others, it is part of your general education and your sole contact with such material. Biology is in the news every day: medicine, environmentalism, genetic engineering, global climate change, evolution, wildlife biology, invasive species, etc. To understand the implications of all this, you need to know the basics of biology. If studying *life* isn't germane to your life, *what is?*

## ORGANIZATION OF THE COURSE

This course consists of several **lecture** sections of 210 students each. I teach one, other professors teach the rest. Though we use the same text book and lab manual, we lecturers conduct our sections independently, with completely different syllabi and different exams. My lectures are divided among four major themes: Fundamentals, Energy, Heredity, and Evolution. Each theme covers two to five chapters in the text book, over six to ten lectures (*see schedule below*). At the end of each lecture, I will give you a list of questions in the textbook that are germane to the material covered that day; if you answer these questions (the answers are in Appendix 3), you will be glad you did. At the end of each theme, there will be an in-class review, then an exam over that material (*see next section*). In addition to lecture, there are numerous **laboratory** sections of 30 students each. Labs are taught by someone other than me. Your lab instructor will provide you with specific information on policies under his or her jurisdiction, e.g., attendance, grading, office hours, etc. All concerns with *lab* work should be addressed to this lab instructor.

## HOW YOU WILL BE EVALUATED

(1) **EXAMS.** As noted above, there will be one at the end of each of the four themes. Each will consist of 50 multiple-choice questions worth one point each, for a total of 200 points. These exams are machine-scored so you will need to **bring sharpened #2 pencils on exam days!** It is true that each exam only covers a certain block of lectures and textbook chapters. However, each new theme *builds on* the previous themes. If you do poorly on Fundamentals, likely you will be unable to do well on any of the remaining themes.

(2) **LABORATORY WORK.** I will ask your lab instructor to provide me with a total of 100 points, based on work you perform under his or her jurisdiction. This may take the form of lab reports, quizzes, exams, work sheets, attendance, participation, etc. See your lab instructor for details.

These are the *sole means* by which to accrue points. There are **no “bonus points”** nor are there **“extra credit” projects** that may be performed to compensate for grade deficiencies. **DO NOT EVEN ASK!** It is demeaning to you; you should be embarrassed to even suggest such a thing. Fairness demands that I treat *every* student in the same fashion and not make exceptions for some. I curse whatever K-12 teacher gave you the idea that asking such a dishonest approach to grading is acceptable.

The final letter grade reported to the Registrar's Office will be based on the total number of points that you earn, according to the following scale. *This scale is absolutely rigid; it will not change*, irrespective of class performance.

0-178	0-59%	F	179-184	60-61%	D-	185-202	62-67%	D
203-208	68-69%	D+	209-214	70-71%	C-	215-232	72-77%	C
233-238	78-79%	C+	239-244	80-81%	B-	245-262	82-87%	B
263-268	88-89%	B+	269-274	90-91%	A-	275-300	92-100%	A

Those of you in the Nursing or Kinesiology tracks, please bear in mind that if you do not earn *at least* 215 points in this course (*i.e.*, a C or better), you will not be permitted to enroll in Human Anatomy (Bio 211) or Human Physiology (Bio 212). To avoid unpleasant surprises at semester's end, please track your performance with the "score card" below. By dividing your cumulative points by the possible points to date, you will know how you are doing in class at any given point in time.

<i>Points from:</i>	<i>Possible on this item:</i>	<i>Cumulative points possible:</i>	<i>My points on this item:</i>	<i>My cumulative points:</i>
Lecture Exam I	50	50		
Lecture Exam II	50	100		
Lecture Exam III	50	150		
Lecture Exam IV	50	200		
Lab grade *	100	300		
<b>TOTAL</b>	<b>300</b>	<b>300</b>		

\* Lab instructors will tell you how they plan to score your lab work. They have been told to report to me at semester's end your grade *based on 100 points*, but individual instructors might have you earn more or fewer points, and then scale it arithmetically.

### CONTACTING ME

I want you to feel free to contact me about *anything* that concerns you about the lecture portion of this course. The best way to do so is via e-mail. For many common questions, the best answer often is to be found in some file I have on my computer; obviously, this makes telephone or personal queries less efficient for both of us.

Except for questions about the day's lecture content, right before or right after lecture is a *terrible* time to ask me about course matters. I have no access to my files and records there, and will invariably forget what you have told or asked me to do by the time I return to my office. Most likely, I will end up asking you to e-mail me to remind me anyway.

Some e-mail tips: I get a huge amount of spam, virus attempts, offers for pharmaceuticals, Nigerian money scams, etc. *Do not* send me e-mail with no subject line. Most get caught in my spam filter and deleted unread. Similarly, don't send me e-mail with a non-informative subject line like "hey" or "hi" or "wassup?" I delete all such things unread as most are spam or viruses. Please put something *useful* in the subject line, such as "Biol 105 question" or some such.

### MY EXPECTATIONS OF YOU

**You will attend every lecture meeting.** Because it is a large lecture, you will be tempted on occasion to skip. You will think your absence will not be noticed; you will think that because I don't count attendance, it won't affect your grade. *Wrong!* It is *extremely* difficult for you to earn a good grade if you are not here for each and every meeting. No matter how boring I am, no matter how little you think you get out of lecture, you will get far *less* out of *not* attending. The assigned lecture period is your *only* opportunity to get essential information. If you *must* miss class, it is *your* responsibility to get notes from a fellow student and to consult with me via e-mail or during office hours to clarify anything you don't understand.

**You will be present for every scheduled exam.** No one should even *think* about missing an exam for any but the most extreme emergencies (*e.g.*, grievous illness or injury, death of a loved one) or for a conflicting university activity (*e.g.*, athletics). If such a situation should arise, you must notify me of your intended absence as soon as possible so that we can schedule a make-up. If you miss an exam and these conditions are not met, you will receive a zero for that exam.

**You will evince high standards of personal integrity in all that you do.** Cheating is defined as any attempt, successful or otherwise, to pass off the work of another as your own. On an exam, it explicitly includes any attempt to obtain information from *anywhere* other than your own mind. Speaking during an exam is forbidden, as is looking about the room. Cheating is no joke. It is **morally indistinguishable from robbing a liquor store or embezzling company funds**. It reflects shamefully on the cheater, his/her family, and his/her high school. No grade is worth a black mark on your self-respect. Not everyone can be an outstanding student, but everyone *can* maintain a high standard of dignity and personal honor. I hereby serve legal notice that anyone determined to be in violation of this standard will be **prosecuted** to the full extent permitted under the provisions of Chapter UWS14 of the Wisconsin Administrative Code, and that I will in all cases seek the **maximum penalty** allowed, *i.e.*, expulsion from the university.

DATE	No.	TOPIC	READING
<b>THEME #1: FUNDAMENTALS</b>			
28 Jan	1	How to Be a College Student	—
30 Jan	<b>Initial Baseline Assessment</b>		—
1 Feb	2	Introduction to Science	1.1 – 1.7
<i>Week 1</i>	<i>≥ no labs this week ≤</i>		
4 Feb	3	The Nature of Science	1.8 – 1.11
6 Feb	4	Chemistry & Life I	2
8 Feb	5	Chemistry & Life II	3.1 – 3.10
<i>Week 2</i>	<i>Lab 1</i>	<i>The Scientific Method</i>	
11 Feb	6	Chemistry & Life III	3.11 – 3.16
13 Feb	7	Cells	4
15 Feb	8	Energy	5.10 – 5.12
<i>Week 3</i>	<i>Lab 2</i>	<i>Manipulating Metabolism</i>	
18 Feb	9	Enzymes	5.13 – 5.16
20 Feb	10	Membranes	5.1 – 5.9
22 Feb	1-10	<i>Synthesis &amp; Recapitulation</i>	1-5
<i>Week 4</i>	<i>Lab 3</i>	<i>Molecules</i>	
25 Feb	1-10	<b>Lecture Exam I</b>	1-5
<b>THEME #2: ENERGY</b>			
27 Feb	11	Respiration I	6.1 – 6.5
1 Mar	12	Respiration II	6.6 – 6.11
<i>Week 5</i>	<i>Lab 4</i>	<i>Proteins</i>	
4 Mar	13	Respiration III	6.12 – 6.16
6 Mar	14	Photosynthesis I	7.1 – 7.6
8 Mar	15	Photosynthesis II	7.7 – 7.11
<i>Week 6</i>	<i>Lab 5</i>	<i>Enzymes</i>	
11 Mar	16	Photosynthesis III	7.12 – 7.14
13 Mar	11-16	<i>Synthesis &amp; Recapitulation</i>	6-7
15 Mar	11-16	<b>Lecture Exam II</b>	6-7
<i>Week 7</i>	<i>Lab 6</i>	<i>Osmosis</i>	
<b>THEME #3: HEREDITY</b>			
25 Mar	17	Cell Division I	8.1 – 8.10
27 Mar	18	Cell Division II	8.11 – 8.23
29 Mar	19	Genetics I	9.1 – 9.4, 9.6 – 9.10
<i>Week 8</i>	<i>Lab 7</i>	<i>Respiration</i>	

1 Apr	20	Genetics II	9.11 – 9.15, 9.20 – 9.23
3 Apr	21	Genetics III	9.5, 9.16 – 9.19
5 Apr	22	Molecular Genetics I	10.1 – 10.5
<i>Week 9</i>	<i>Lab 8</i>	<i>Photosynthesis</i>	
8 Apr	23	Molecular Genetics II	10.6 – 10.10
10 Apr	24	Molecular Genetics III	10.11 – 10.16
12 Apr	25	Gene Regulation	11.1 – 11.7
<i>Week 10</i>	<i>Lab 9.1</i>	<i>Genetic Engineering</i>	
15 Apr	26	Biotechnology	12.1 – 12.10, 12.17 – 12.18
17 Apr	17-26	<i>Synthesis &amp; Recapitulation</i>	8-12
19 Apr	17-26	<b>Lecture Exam III</b>	8-12
<i>Week 11</i>	<i>Lab 9.2</i>	<i>Genetic Engineering</i>	
		<b>THEME #4: EVOLUTION</b>	
22 Apr	27	Evolution I	13.1 – 13.6
24 Apr	28	Evolution II	13.7 – 13.10
26 Apr	29	Evolution III	13.11 – 13.17
<i>Week 12</i>	<i>Lab 10</i>	<i>Genetics</i>	
29 Apr	30	Evolution IV	14
1 May	31	Evolution V	15.1 – 15.13
3 May	32	Evolution VI	15.14 – 15.19
<i>Week 13</i>	<i>Lab 9.3</i> <i>Lab 11</i>	<i>Genetic Engineering</i> <i>Evolution</i>	
6 May	33	Capstone Commentary	—
8 May	27-32	<i>Synthesis &amp; Recapitulation</i>	13-15
10 May	27-32	<b>Lecture Exam IV</b>	13-15
<i>Week 14</i>		<i>≧ no labs this week ≦</i>	

**Need more help?** The **Reading and Study Skills Center** in 202A Nursing Education is an all-university service whose mission is to facilitate development of efficient college-level learning strategies in students of all abilities. Strategies for improved textbook study, time management, note taking, and test taking are taught through both credit courses and non-credit services. For more information, visit: <http://www.uwosh.edu/readingstudycenter>

The **Center for Academic Resources** at 750 Elmwood Ave. provides free one-on-one tutoring for most undergraduate courses on campus. For more information, visit: <http://www.uwosh.edu/car>

**Career Services** is the university's provider of occupational guidance, career information, and advice. At this point in your academic career, they will be most useful to you in determining what academic major would best suit you. For example, if you've always wanted to be a nurse but can only muster a C or worse in this course, you may be in a career path that is less-than-ideal for your own special talents and abilities. For more information, visit: <http://www.uwosh.edu/career>

**Students with disabilities** Students with disabilities are welcome in this course. Please contact your lab instructor and me in the first week of class so that we may arrange all possible accommodation regarding classroom attendance, testing, etc.