

**BIOLOGY 111A – THE UNITY OF LIFE  
Spring 2014**

**YOUR PROFESSOR:** Dr. Mark O. Martin aka “Doc Martin”

**HOW TO FIND OR CONTACT ME:**

Office telephone:	<b>X2747 (office) or X3827 (lab)</b>
Office location:	<b>Thompson 257A (but I am seldom there!!)</b>
Research lab:	<b>Thompson 275 (a good bet!)</b>
E-mail:	<b><a href="mailto:momartin@pugetsound.edu">momartin@pugetsound.edu</a> (best way to contact me)</b>
Office hours:	<b>M 1 – 3 PM, W 3-4 PM (or BY APPOINTMENT)</b>
Class location:	<b>Thompson 193</b>
Class times:	<b>M, W, F: 10-10:50 AM</b>
Lab sections:	<b>111AA (Th: 9 – 11:50 AM), 111AB (Th: 1 – 3:50 PM), 111AC (F: 1 – 3:50 PM) in Harned 251</b>

**Note: This is a big class, and I very seldom have students come to office hours! Please consider working WITH me in lab, so that I can help you reach your educational goals.**

You are all ALWAYS welcome to drop by my office or lab to see if I am available. I use an “**open door policy.**” If my door is open, feel free to knock or come in---the OPEN door means that even when I am busy, I have time to chat. When the door is CLOSED (lab or office), it means that I am in the middle of something where I need to use my full concentration. I enjoy doing research as well as teaching! If you do come into lab, and I am in the middle of helping a research student, please be patient. And during office hours, I am ready to answer your questions enthusiastically.

Mostly, I am happy to chat with any of you...but I am sometimes in the middle of an experiment or gone away to a meeting out of town, so office hours or a specific appointment would be a best bet. I'll try to add some extra time to be available into the mix, and I will keep you posted about that in class. Please don't wait until the last moment to see me if you have questions or issues; **students who work with me regularly almost always do much better in class.** So let's work together... My overall schedule is on the web or posted on my door and lab, as well. Messages to me may be delivered by email, voice mail, or through Carol Curtin, the department secretary (879-2855).

The safest way to reach me is by e-mail, since it leaves a record on my computer!

Also, for this semester, I am using the **Moodle system** on campus as a teaching and record keeping tool. I am new to using Moodle, so please be patient and let me know how the experience is going. If you haven't used Moodle before, you should learn: more and more classes at Puget Sound use the system; there are some real advantages. There will be some instructions in class, but you should go to “[Moodle.pugetsound.edu](http://Moodle.pugetsound.edu),” log in with your Puget Sound username and password, click on this class, and then explore!

**REQUIRED TEXTS:**

- "Biology," by Campbell and Reece / 9th ed., 2011
- "A Short Guide to Writing About Biology," by Pechenik, 2012
- "Biology 111 Laboratory Manual," Spring 2014

**CLASS TIMES:**

Lecture:	"111A"	MWF	10:00 – 10:50 AM	Th 193
Lab Sections:	"111AA"	Th	9:00 – 11:50 AM	HA 251
	"111AB"	Th	1:00 – 3:50 PM	HA 251
	"111AC"	F	1:00 – 3:50 PM	HA 251

I am teaching all three laboratory sessions associated with this section of the course, as well as lectures. That way, you get to see me lecture AND work with me one on one. I think it is the model that works best for most students, especially in a (for Puget Sound) large course like this one!

You **MUST** attend your assigned lab section each week, with NO "SWAPPING" (things get very complicated otherwise, logistically and in terms of lab partners). Please come to lab on time and prepared to learn, be flexible and positive, and have a good time. Thanks for understanding!

**BIOLOGY 111A MOODLE WEB SITE:**

I will post the PowerPoint presentations on the same day I gave the lecture, and even the lecture outline (though the latter will be handed out in class, too). The PowerPoint slides are numbered, so that you can refer to particular slides when you have questions or need clarification. I will also post interesting and important information to the Moodle site (to save paper); so I would spend some time getting to know the Moodle site for this course!

Keep in mind that I am not yet "Moodle-tastic" and I will keep the site basic and clear.

I will also try to help you navigate the tools that Campbell and Reece have available. More later on that subject!

**COURSE DESCRIPTION:**

Biology 111 is an introductory-level course in the biological sciences that satisfies a Natural Sciences Approaches requirement here at Puget Sound. ***This course is designed for introductory level students intending to major in biology or a related science.*** Biology majors are required to complete both Biology 111 and 112 before taking most upper level courses in the major. If you do not plan to major in the sciences you may want to consider enrolling in Biology 101, a Natural Science Approaches core Biology course designed for non-majors.

Remember, please, that this is indeed a challenging course, and will take a substantial amount of your time (even though I think it is a fascinating topic and subject area): 5 – 10 hours a week outside of class or lab time.

Adequate preparation for participation in Unity of Life would include satisfactory completion of one or more years of high school biology and chemistry. **If you are considering a major in biology, you should be taking Chemistry concurrently.**

Students in Biology 111 will begin to recognize and understand the cellular structure/function relationships that make life possible. In addition to basic structural features, I will emphasize the capacity of cells to process materials and energy, to reproduce and pass information down to future generations, and to communicate with other cells. In addition, I will give examples of how biochemistry and molecular biology are relevant to everyday life---thus moving you from the textbook to material seen in the regular media...and sometimes the voting booth!

As students in Biology 111, you will be asked to go beyond memorizing details to applying these concepts to novel situations, such as considering how cellular processes underlie whole organism function or dysfunction with specific examples. In addition, you will be introduced to some of the principles underlying DNA technology and some recent applications of that technology. From paternity testing to cloning farm animals to criminal forensics, I will emphasize how relevant this introduction to cell and molecular biology is to everyone, not just Biology majors. These wonders and challenges of biology are in every newspaper and newscast. **They are central to the 21<sup>st</sup> century in which we live.**

To be successful, students in Biology 111 need to acquire a firm grasp of basic concepts, learn basic nomenclature and principles, and develop the ability to apply these concepts to new problems. Each student should begin to develop confidence in her or his ability to think logically and critically and to communicate ideas effectively. **Writing clearly is one of the most important skills you will develop in college.** One of the goals of this course is to help you recognize the elements of good scientific writing and allow you to begin to develop your own scientific writing skills. You will have such an assignment in the required lab section for this course!

**The major objectives for this course are to:**

- ❖ Introduce you to some of the basic principles of modern biology at the subcellular and cellular level.
- ❖ Relate these principles to your own everyday life as an individual and as a member of society. Remember, you will know more than most lawmakers about biology after this course!
- ❖ Develop your power of reasoning and analysis through application of scientific methods.
- ❖ Develop your ability to accurately collect and record data, thoughtfully analyze data, and articulate and defend claims based on data.
- ❖ Enhance your use of writing, both as effective communication and as a learning strategy.

**COURSE FORMAT:**

The course includes both lecture and laboratory portions. In addition, students may be asked to work together in small groups from time to time. During lecture, I will not simply reiterate the textbook; **therefore it is important that you do the reading assignments ahead of time and come to class prepared.** Reading assignments are associated with each lecture. Use these reading assignments as background and as another way to explain the concepts covered in lecture; in other words, use your

textbook as a **reference**. In lecture, I will stress the important points and help you synthesize the information, but I don't have time to cover everything that is in the text in the time that is available to us.

**Important point #1: Exams and quizzes will cover only the material I have presented in lecture except for specific readings I will indicate in advance. At the same time, there is a huge amount of material to cover; I strongly urge you to keep up and work with me to reach your goals for this course; it is up to you!**

**My goal for this---all my courses, actually---is simple: to challenge but not surprise the student!**

However, you will gain a much better understanding of the processes and their contexts in organisms if you do the reading assigned. You must begin your own collaboration with the subject of biology and take an **active** role in your learning process. You should come to class prepared to think, to ask questions, and to answer questions. You are responsible for your own learning; I am here as a guide to offer you assistance in that process. To that end, **thoughtful note-taking is essential to your success**. I am surprised by the number of students, each semester, who do not take notes actively in class, or ask questions. **The most successful students, as you might guess, are the ones who do take notes actively in class, ask questions, are engaged, and have a positive attitude about problem solving.**

As I mentioned, I will post PowerPoint presentations of each lecture on the course Moodle website, and I will hand out lecture summaries and study questions. **These are no substitute for your own notes and study skills!**

**Important point #2: "Ownership" is crucial both here and in real life. My goal is that you will own your successes in this course, based on your study habits, work ethic, and enthusiasm. My job is to provide you with tools and information that you can use to excel. Your grade should reflect the time and effort you put into this course. Thus, if you expect to do well, you should expect to devote time and effort to this course.**

If you are having trouble with the information presented in the book, in lecture, or in lab, please talk to me **AS SOON AS POSSIBLE**. Please do not be shy; once you get lost, the problem compounds itself like a snowball rolling downhill. Remember that **there are no stupid questions**; if you have a question, ask it—no doubt other students have the same question. If you are uncomfortable asking questions in class, feel free to make an appointment to speak to me privately or send a e-mail.

How do I conduct lecture? I am currently using a combination of PowerPoint presentations and blackboard work. I will also pass out a short outline of the lecture as a handout, along with some study questions. **To repeat myself: you MUST take careful notes to do well in this course.** As mentioned above, I will post the presentations to the website I am developing on the same day I give the lecture. I will also try some "group learning" exercises this term (listed on the course schedule as "collaborative learning exercises").

## **COURSE SCHEDULE**

The schedule passed out today is my "map" of what I would like to cover in this course. **It is more important to me that I am clearly presenting information to the class than to finish a subject on time.** Thus, we may get ahead or behind schedule as the semester progresses. It is your responsibility to keep track and stay current! As always, ask if something is unclear.

## READINGS

The required texts for the course are BIOLOGY, 9th ed., 2011, written by Campbell and Reece, and A Short Guide to Writing About Biology, 2012, by Pechenik. You must also purchase the Biology 111 Spring 2014 Lab Manual. All of these are available in the campus bookstore.

The main text was written for a comprehensive, year-long, introductory college biology course. It is highly readable, well-illustrated, and covers **MANY** more topics than I will be able to cover in Biology 111. In this respect, you are encouraged to keep this book and use it as a comprehensive, general resource for future biology courses and to study for the MCAT, GRE, etc. For each lecture, I've assigned a chapter or a portion of a chapter; this material should be read in preparation for the lecture. Here is a good strategy for success before coming to class, as you explore a chapter in Campbell:

- Look over the "Summary of Key Concepts."
- The figures and figure legends are usually VERY helpful.
- Try the "Self-Quiz."
- Check out the "Evolution Connection," "Scientific Inquiry," and "Science, Technology, and Society" sections at the end of each chapter.
- Have a look at the suggested Web Links.
- Finally, use the glossary at the end of the textbook regularly.

These aids will help you identify important concepts and terms associated with the topics, and provide questions that will help you organize and apply your learning. I will also post two additional information to the Moodle site. This material is required unless I state otherwise. Following each lecture---it is important that you integrate the information in the text with that from lecture. Again, your notes are a vital resource.

## STUDY STRATEGIES

The website that is associated with your text ([www.masteringbiology.com](http://www.masteringbiology.com)) is designed to enhance your thinking about the topics in this course. It includes animations that help you visualize the processes I cover. **Another very effective vehicle for learning is to participate in or organize a small study group with other students in this class.** Use this group to review information, challenge one another, test your knowledge, and practice explaining the concepts. Often it isn't until you try to explain a concept to someone else that you see a gap in your own understanding. The more you intellectually engage your mind with these concepts, the more you will learn and the better prepared you will be for the quizzes and exams.

I would also recommend that you split your study time: reviewing past lectures as well as information related to upcoming quizzes or exams. Why? The final exam is cumulative. If you stay current from the beginning, you will have less hyperamped and overcaffeinated studying at the end of the course.

Again, think about the time and effort you place into studying for this course. The grade you earn **will** reflect that ethic. I will help you as best I can to reach your expectations, but you must work with me to make it happen. I don't mean to sound dire; I just want you all to do well.

Finally, no matter what you believe or may have heard, **"cramming" for quizzes or exams simply does NOT work.** This isn't my opinion; it's demonstrated by research into

education and outcomes. Thus, please keep up with lectures. Don't let time go by. Stay current, take careful notes, do the readings before class. That approach works.

## **LABORATORY**

Each student must be registered for a laboratory section. Each laboratory section will meet at its assigned time each week for 3 hours. You are expected to attend the laboratory section for which you are registered and to **please be on time**. Only in unusual (and extremely rare) circumstances will you be allowed to make arrangements to attend a different laboratory section in a given week. The laboratory activities provide an opportunity to make first-hand observations, learn data collection techniques, sharpen skills in analysis and reasoning, and practice clear and effective communication. A short introduction to the laboratory will generally be given at the beginning of each lab period. This introduction will provide information not available in your lab manual and to demonstrate new techniques—**but it cannot replace your own advance preparation**.

**You must carefully read through the laboratory description BEFORE the lab to know what it is you are expected to do during the laboratory session. I CANNOT EMPHASIZE THIS ENOUGH! If you do NOT do this, lab will take you much longer than it should to complete. You want to get done on time, right?**

You should also review the portions of your text and lecture notes that relate to the laboratory topic. **To help you prepare for each lab session, each lab "exercise" includes a set of pre-lab questions to turn in at the beginning of the lab period.** Detailed instructions for each lab are included in the Biology 111 Laboratory Manual, Spring 2014, available at the bookstore. Each lab description includes many questions for thought and most include a page or more of questions to be turned in at the end of the laboratory session.

**It is a good idea to bring your textbook and your lecture notes with you to lab to help you answer the questions.**

One lab will provide data for writing a **full lab report**. This assignment is part of your introduction to scientific writing. In science it is essential to communicate observations and reasoning through clear, concise, and well-documented written papers. This lab report is worth 50 points total, written in several stages: an introductory proposal, figures and figure legends, and the full lab report.

## **ASSIGNMENTS**

Assignments will include writing assignments, problem sets, and questions designed to help reinforce important concepts. **To receive full credit, an assignment must be turned in by the time it is due. Late assignments will be assessed a penalty of 10% for each day it is late.** No credit will be given for assignments turned in after the exam on that particular subject.

There will be six 10-point quizzes throughout the semester except in exam weeks; these will be given on Wednesdays at the beginning of class (except for one "take home" quiz late in the semester). The quizzes are designed to help you keep up with the material, to give you practice answering the kinds of questions presented on the exams, and to help you recognize where and how you need to focus your study time. I will count the best 5 scores on your quizzes toward your course grade.

Each Friday, you will each fill out a short form stating one concept from the week's lectures that made sense, one concept that did not, and a suggested test question. This encourages each of you to think about the class, and helps me better serve you as your professor. You will receive 3 points for each of these forms weekly---for a total of 42 points. So there is value in thinking about what is good about class, what needs improvement, and the kinds of questions you expect to see on exams.

Attendance at your registered lecture and lab sections is **required**; if you are not in class when an assignment is due, you must arrange in advance with me to have it delivered or you will not receive full credit for your work. If you miss a quiz or in-class activity for which points are given, you will receive a zero. If you know that you will be unable to attend a particular class, special arrangements **MAY** be made, **depending on the circumstances, and such arrangements must be made in advance.**

**IF YOU DO MISS A CLASS, YOU ARE RESPONSIBLE FOR FINDING OUT WHAT MATERIAL WAS COVERED DURING THAT PERIOD INCLUDING ASSIGNMENTS, SCHEDULE CHANGES, ETC.**

### GRADING POLICY

There will be 3 in-class midterm exams and a mandatory **COMPREHENSIVE** final exam. The dates for all exams are in the course schedule and will not be changed. Check your own schedule carefully against the exam schedule: there are **NO MAKE-UP EXAMS**—only under exceptional circumstances will an alternative arrangement be made, and then **only in advance**. Absence from an exam for *bona fide* medical reasons will be considered **ONLY** with **written** evidence from a health care provider.

Each midterm will cover the material since the previous exam. **Lecture, lab, and designated readings are all fair game for quizzes and exams**, so please be sure to include your lecture notes, lab activities, and designated readings in your studying. All exams will count toward your grade (none can be dropped). In addition to exams, you will receive points for quizzes, lab work, and some homework assignments. There will be some extra credit assignments, as well, to be announced. Your total number of points at the end of the semester will be used to determine your average percentage (92%, 78%, etc.) which can be easily converted to a letter grade using the table below.

Average Percentage	Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
70-76	C
68-69	C-
66-67	D+
60-65	D
0 - 59	F

**If you wish to calculate your grade at any point during the semester, simply divide your total points by the number of possible points at that time. Convert the decimal to a percent and look up your grade in the table above.**

### COURSE POINT SUMMARY

Quizzes (5 @ 10 pts each – drop lowest of 6)	50 pts
Weekly spot checks (14 x 3)	42 pts
Midterm exams (3 @ 100 pts each)	300 pts
Final exam	200 pts
Lab pre- and post questions, problems, lab report	238 pts
“Creative” assignment	25 pts
Total points for YOU to earn:	855 pts

### EXAMS:

Exams will be a combination of multiple choice, short answer, problems, and application/essay questions. I will make some prior exams available on the Moodle site, or will hand out a sample in class. These samples are meant to give you an idea of what to expect and to help you focus on important concepts. **THESE QUESTIONS WILL NOT APPEAR ON THIS YEAR'S EXAMS**, but the questions will cover the same concepts and ideas. **Memorizing** the answers to these questions will **NOT** help you, but **understanding** how the answers were derived and recognizing the detail required to fully answer an application/essay question will help you.

### ACADEMIC HONESTY

You are expected to conduct yourself with integrity, as part of the academic community here at the University of Puget Sound. **ALL WRITTEN ASSIGNMENTS MUST BE WRITTEN INDIVIDUALLY AND ALL SOURCES OF INFORMATION MUST BE PROPERLY CITED.** If you plagiarize or cheat, or aid someone else in doing so, you violate a trust. No credit will be given for work copied or paraphrased from other sources (including another student) and harsher penalties may be applied (e.g. dismissal from the course with a failing grade, suspension, and/or expulsion from the University). Refer to the University of Puget Sound [Logger](#) for a definition and examples of plagiarism, as well as potential penalties for academic dishonesty:

<http://www.pugetsound.edu/student-life/student-resources/student-handbook/academic-handbook/academic-integrity/>

Every incident of academic dishonesty in this course will be reported to the Registrar. Academic dishonesty includes:

- plagiarism, copying, or misrepresenting yourself on written work
- misrepresenting data in lab reports
- using written notes during quizzes or exams (when notes are not permitted by the instructor)
- altering an exam after it has been returned
- defacing or unauthorized removal of library materials

Academic honesty is **serious** business. Please keep the above in mind.



### **Possible Disability Issues As They Relate to Academics:**

Here is what the University of Puget Sound asks that I include in your syllabus regarding this topic:

*"If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Peggy Perno, Director of Disability Services, 105 Howarth Hall, 253-879-3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential."*

Please remember that these arrangements (as part of Disability Services and possible accommodations), are made ahead of time; **no last minute arrangements** can be made.

### **Classroom Emergency Response Guidelines:**

Here is what the University of Puget Sound asks that I include in your syllabus regarding this topic:

*"Please review university emergency preparedness and response procedures posted at [www.pugetsound.edu/emergency/](http://www.pugetsound.edu/emergency/). There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings.*

*If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative.*

*If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions."*

**SUGGESTIONS FOR SUCCESS IN THIS COURSE:**

- ❖ Attend all lectures and labs.
- ❖ Prepare for lecture by reading the assigned text and reviewing previous lecture notes.
- ❖ Prepare for lab by reading the text, lecture notes, lab instructions, and answer the pre-lab questions.
- ❖ Study material after each lecture by trying to integrate current lecture with reading assignment and previous lectures.
- ❖ Organize or join a study group. It's very useful to talk about the material with other students.
- ❖ Come to lecture and lab prepared to ask questions about material you do not understand.
- ❖ Be prepared to be asked questions from time to time in class or in lab.
- ❖ Be proactive and ask for help when needed---my job is to help ALL of you do your very best in this class. I LOVE this subject, and I enjoy talking about it. I also enjoy interacting with students.

Mind you, folks, you don't HAVE to do these things. But these are the things that students who earned good grades almost always do. VERY few students earn good grades who do NOT do these things. The choice is YOURS. My job is to meet you half way.

I want the grade you earn in this course--- as well as the experience and information you take away---to reflect the time and effort you put into the course. **Ownership, once again.**

If you do well, it will be because **YOU** worked hard. **YOU** earned it. If you are not putting the time and effort into this class---well, you can guess the result. And you must own that, too.

Remember, I would be delighted if everyone put in the time, and did well.

The choice is, as always, **yours**. I want to help each of you reach your goals for this course. But you are the one studying, asking questions, and taking exams. **All I can do is meet you half way---and I will.** I will be as available and helpful as I can manage---again, I want every student in my classes to do well.

**Good luck to all of you---and talk with me often. I genuinely care about the students here at the University of Puget Sound. And that includes YOU.**

**Let's work hard together, laugh a little, and learn a lot. I'm here to help---but it is up to you!**

<b>BIOLOGY 111A</b> <b>Lectures: MWF 10 – 10:50AM, Thompson 193</b> <b>Lab section AA: Th 9:00 – 11:50AM</b> <b>Lab section AB: Th 1:00 – 3:50PM</b> <b>Lab section AC: F 1:00 – 3:50 PM</b> <b>All Labs held in Harned 251</b>	<b>Dr. Mark O. Martin</b> <b>Phone: X2747; Office: Thompson 257A</b> <b>Research lab: Thompson 275</b> <b>Email: “momartin@pugetsound.edu”</b> <b>Office hours: M 1 -3 PM, W 3 -4 PM, or</b> <b>BY APPOINTMENT.</b>
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**COURSE SCHEDULE**  
*“The Unity of Life”*  
**Spring 2014**

*Please note: the lecture topics are subject to modification and change as the semester progresses---each handout will include reading for the next lecture!*

<b>WK</b>	<b>DATE</b>	<b>TOPIC</b>	<b>TEXT READING</b>	<b>LAB</b>
		<b>MLK DAY – NO CLASS</b>		<b>NO LAB</b>
<b>1</b>	<b>W Jan 22</b>	Course introduction, philosophy, and overview	Chapter 1	
	<b>F 24</b>	The chemistry of life, with functional groups and wonderful water...	Ch. 2, 3, 4	
<b>2</b>	<b>M 27</b>	Tinkertoy biochemistry, Part I: lipids and carbohydrates	Chapter 5	<i>CELLS AND TISSUES</i>
	<b>W 29</b>	<b>QUIZ #1</b> Tinkertoy biochemistry, Part II: thinking about proteins.	Ch. 5	
	<b>F 31</b>	Tinkertoy biochemistry, Part III: nucleic acids and proteins	Ch. 5	
<b>3</b>	<b>M Feb 3</b>	Membranes: the Tupperware of life!	Ch. 7	<i>MEMBRANE TRANSPORT</i>
	<b>W 5</b>	A guided tour of the cell, Part I: it's what's inside that counts.	Ch. 6	
	<b>F 7</b>	A guided tour of the cell, Part II: internal structure and motility.	Ch. 6	
<b>4</b>	<b>M 10</b>	Special topic: crazy cool collagen, a good example of structure/function	TBA	<i>BACTERIAL BIOFILMS</i>
	<b>W 12</b>	<b>EXAM 1</b> (through Feb 10 <sup>th</sup> )		
	<b>F 14</b>	Metabolic overviews, Part I: energy, enzymes, and carriers.	Ch. 8	
<b>5</b>	<b>M 17</b>	Metabolic overviews, Part II: the biochemical context of life.	Ch. 8	<i>ENZYME ACTIVITY</i>
	<b>W 19</b>	Harvesting cellular energy, Part I: the sugary goodness of glycolysis.	Ch. 9	
	<b>F 21</b>	Harvesting cellular energy, Part II: the circular logic of the Krebs cycle.	Ch. 9	
<b>6</b>	<b>M 24</b>	Harvesting cellular energy, Part III: waterfalls of protons and making ATP.	Ch. 9	<i>CELLULAR RESPIRATION</i>
	<b>W 26</b>	<b>QUIZ #2</b> , then Photosynthesis-capture of light energy	Ch. 10	
	<b>F 28</b>	Photosynthesis-fixing carbon	Ch. 10	
<b>7</b>	<b>M Mar 3</b>	Remarkable experiments: DNA as the genetic material	Ch. 16	<i>PHOTOSYNTHESIS</i>

	W	5	A fork in the road: DNA replication	Ch. 16	
	F	7	Special topics in DNA technology: DNA repair, telomeres, and PCR	Ch. 20	
8	M	10	Biology in Society I: biotechnology and you	Ch. 20	<i>PHOTOSYNTHESIS PAPER CONSULTATION</i>
	W	12	<b>EXAM 2</b> (through March 10 <sup>th</sup> )		
	F	14	Dividing things up, Part I: mitosis, the cell cycle, and cancer.	Ch. 12	
	Mar	17 - 21	<b>SPRING BREAK – NO CLASS</b>		<b>NO LAB</b>
9	M	24	Dividing things up, Part II: meiosis and reduction division.	Ch. 13	<i>MITOSIS AND HUMAN GENETICS, PART I</i>
	W	26	<b>QUIZ #3:</b> Mendel and the gene concept.	Ch. 14	
	F	28	Extensions and exceptions to Mendel's laws.	Ch. 14	
10	M	31	Chromosomal basis of inheritance	Ch. 15	<i>MEIOSIS AND HUMAN GENETICS, PART II</i>
	W	Apr 2	<b>QUIZ #4:</b> Special topic: human genetic disorders.	TBA	
	F	4	Techniques in molecular biology	Ch. 20	
11	M	7	The Central Dogma, Part I - transcription	Ch. 17	<i>FROM GENOTYPE TO PHENOTYPE, PART I</i>
	W	9	The Central Dogma, Part II - translation	Ch. 17	
	F	11	The Central Dogma, Part III – more about translation.	Ch. 17	
12	M	14	Viruses and their genetics	Ch. 19	<i>FROM GENOTYPE TO PHENOTYPE, PART II</i>
	W	16	<b>EXAM 3</b> (Through April 14 <sup>th</sup> )		
	F	18	Bacterial genetics and gene transfer	Ch. 27.2	
13	M	21	<b>Quiz #5:</b> a collaborative learning exercise exploring the rise of antibiotic resistant bacteria, and what we can do about it.	Prior handouts	<b>NO LAB</b>
	W	23	Regulation of expression in prokaryotes	Ch. 18	
	F	25	Genetically modified organisms		
14	M	28	Eukaryotic genomes and genomics	Ch. 21	<i>BIOETHICS AND LAB PRACTICAL</i>
	W	30	Regulation of expression in eukaryotes	Ch. 18	
	F	May 2	Cell communication, Part I ( <b>TAKE HOME WEEKEND QUIZ #6</b> )	Ch. 11	
15	M	5	Cell communication, Part II.	Ch. 11	<b>NO LAB</b>
	W	7	Biology in Society II	TBA	
	W	May 14	<b>FINAL EXAM ON WEDNESDAY 8AM – 10 AM (comprehensive)</b>		