

Biology 203 Syllabus – Spring 2010

General Information on Course Requirements and Grading

Time and Place:

Tuesday / Thursday from 8:00 - 9:15 AM, Exercise and Nutritional Sciences (ENS) 280

Introduction:

Biology 203 (BIOL 203), "Principles of Cell and Molecular Biology," is one course of a two-semester sequence for biology majors, Biology 203 and 204. Note: this course is not a GE course; it is a required course for all biology majors.

In BIOL 203, we introduce principles that apply to all living organisms. The underlying theme is the unity of life, while Biology 204 covers the diversity of life. Some of the biological disciplines that are touched on include biochemistry, cell biology, classical genetics, and molecular biology. Consequently, BIOL 203 provides a foundation for much of your upper division coursework in biology, particularly Genetics and Evolution (Biol. 352) and Biochemistry, Cell, and Molecular Biology I, II, and III (Chemistry 365, Biology 366, and Biology 567).

Instructors

Dr. Kathleen McGuire

Office: North Life Sciences 407

Phone: (619) 594-7191

email: kmcguire@sunstroke.sdsu.edu

Office Hours: Tues/Thurs 12:00pm-1:00pm

Dr. Ralph Feuer

Office: South Life Sciences 358

Phone: (619) 594-7377

Email: rfeuer@sciences.sdsu.edu

Office Hours: Tues/Thurs 9:30am-10:30am

If you must contact the instructor, make sure to put "BIOL 203" at the beginning of the subject line in order to properly pass email spam filters.

Enrollment Information / Obtaining Add Codes:

Add codes will be given by Biology 203 Laboratory (BIOL 203L) Teaching Assistants after students are signed up for the laboratory course. If a student has previously taken the BIOL 203L laboratory course and would like to repeat the BIOL 203 lecture course, please contact Dr. Andrew Bohonak (Vice-Chair and Director of Undergraduate Advising and Curriculum–bioundergrad@sunstroke.sdsu.edu) regarding enrollment.

Prerequisites:

Although BIOL 203 is introductory in nature, we have a lot of ground to cover. Therefore, as a minimum background you should have **all of the following**:

1. A **college-level chemistry course** such as **Chem. 200** is required as a prerequisite. **You should not take BIOL 203 course without Chem. 200 or its equivalent. You face possible course failure for lacking prerequisites.**
2. A **working knowledge of algebra** (graphing, interpreting graphs, simple equations, logs, exponents, etc.).

Biology 203 Course Information:

All information for this course will be posted on Blackboard. The BIOL 203 Blackboard site contains course information including the lecture schedule, lecture notes if they are available, and a bulletin board for course announcements. Students can obtain a free email account if they do not already have one; check in the Student Computing Center in the Love Library.

Course Organization:

BIOL 203 is a team-taught course as are many courses for Biology majors. There are two lecturers who cover topics in their particular fields of expertise, and graduate teaching assistants who handle the laboratory sections. The course is divided into 4 unequal segments:

Cell Structure and Function
Energy Metabolism

Classical Genetics
Molecular Biology

Textbook Required:

Campbell and Reece, *Biology* 8th Edition; Pearson/Benjamin Cummings, 2008

Publisher Website : www.campbellbiology.com

“**Mastering Biology**” the on-line tool which accompanies the text, is **required** for access to many study guides and far all extra point quizzes for the McGuire section, and for the majority of extra point quizzes for the Feuer section of the course.

Assigned reading from the text accompanies each lecture and is indicated on the lecture outline. You are responsible for all text material assigned with emphasis on material that relates directly to the lectures. You need not bring the text to lecture or to lab meetings. There is a Lecture Notebook and/or CD that may be packaged with the textbook; this contains figures from the text and space for lecture notes. Some of you may have acquired the 7th edition of Campbell. The information in the two editions is essentially the same, but the course will rely on the information contained within the 8th edition of the textbook. Access to Mastering Biology comes with new copies of the text. It can be purchased separately if you purchased a used textbook.

Biology 203 Laboratory Course (BIOL 203L):

Starting in the fall of 2009, the associated laboratory course (BIOL 203L) has been detached from the lecture course (BIOL 203).

Learning Objectives:

In this course you will learn the fundamentals of Cell and Molecular Biology - principles that apply to all living organisms.

By the end of the course, students will be able to:

- Describe the importance of water to biological systems
- Understand the basic principles of organic (carbon-based) chemistry as it relates to life

- Describe and understand the structure and function of large biological molecules
- Describe and understand the basic structures and properties of cells
- Understand and explain membrane structure and function
- Describe and understand the principles and processes of cellular metabolism and respiration
- Understand the process of photosynthesis
- Compare and contrast the similarities and differences between mitosis and meiosis
- Describe the principles of Mendelian genetics
- Describe and understand the principles and major features of the chromosomal and molecular basis of inheritance
- Understand the flow of genetic information from DNA to RNA to Protein and will be able to describe those processes at the molecular level
- Understand and describe the basic properties of gene regulation and cell communication

Grading:

We use a point system and your grade will be based on a percentage basis. The point values of the lecture exams are shown on the lecture outline. Consult the lecture schedule for exam dates. **There will be no comprehensive final exam.**

Exam I material	100 points
Exam II material	100 points
Exam III material	100 points
Exam IV material	100 points

Grades are earned on a straight percentage basis as shown below:

Scale:	B+: 87-89.9%	C+: 77-79.9%	D+: 67-69.9%	F: <59.9%
A: 93-100%	B: 83-86.9%	C: 73-76.9%	D: 63-66.9%	
A-: 90-92.9%	B-: 80-82.9%	C-: 70-72.9%	D-: 60-62.9%	

The lecture exams will be objective (mostly multiple choice) with possibly some short-answer essays (a sentence or two up to a couple of paragraphs). These exams will assess your knowledge of both lecture and reading assignments. **Questions will be drawn from both the lecture and reading assignments.** If you have a **legitimate excuse**, be sure to notify the appropriate lecturer **by the day after the exam** and be prepared to provide **written**

confirmation (letter from your doctor etc.). Job-related excuses are not acceptable; you are responsible for arranging your work schedule around your classes.

- During the lecture course, there will be opportunities to earn extra credit – these opportunities will be explained in lecture. Attendance during lectures may be necessary to earn extra credit points. For the McGuire section of the course, **all extra credit quizzes** will be given through **MasteringBiology**. The *MasteringBiology* CD and website is a valuable online tutorial and assignment/quiz assessment activity site. Each quiz will be **available for a limited time only** and announcements will be made on Blackboard as to when the quizzes are available and for how long they can be accessed.
- A series of self-study quizzes for each chapter will be provided on Blackboard or through **Mastering Biology**. You should take advantage of these quizzes as they will help you to understand the material in this course. **In addition, bonus quizzes for the Feuer section may be assigned using the MasteringBiology website.**
- If you are having difficulties in the course and you would like our assistance with suggestions on how to improve your grade, please contact us as soon as you begin having difficulties. If you have an issue that is affecting your performance, contact us immediately. Do not wait until after the course is over.
- **Once you have earned a grade in the class, there is NOTHING we can do for you!** So let us work with you during the semester – we will help in anyway we can (for example, explain material, answer questions, go over concepts you are struggling with, advise you how to study and prepare, etc.). Please remember, however, that no student will be offered opportunities not offered to the entire class. Take advantage of the opportunities you have: attend lecture, read the book, use the on-line tutorials, ask questions, take the extra credit quizzes, and use office hours!

Cheating, Class Etiquette, and Special Accommodations:

Any offences of cheating, including plagiarism, will result in the student being reported to the judicial office. Cell phones must be turned off during class. If you must be available via cell phone for potential emergencies, set your phone to vibrate mode. Please be considerate of your neighbors and avoid distractions such as carrying on conversations or entering and exiting during lectures. **NO cell phones or ear phones of ANY kind will be allowed during exams!** To request disability accommodations, please make an appointment to speak with the instructor early in the semester.

Furloughs

The devastating California state budget cuts prohibit faculty and staff at SDSU from working nine days per semester during the 2009/10 academic year. Thus, there are scheduled faculty furlough days during class days (see class schedule). While efforts will be made to keep the content of this course consistent with past semesters, no formal lectures or office hours will be held on those days. To minimize or avoid faculty and staff furloughs in future academic years, you may want to contact your State legislators so that they better understand how cutting the state budget for higher education affects your education and your future.

Final Note:

BIOL 203 covers a lot of material. In order to pass the course, you should **keep up with the material on a daily basis. Attend lectures**, take detailed notes of your reading and the lecture (this involves more than copying down what the lecturer writes on the board!) either annotate or recopy your notes while the lecture is still fresh in your mind, and use the text to fill in gaps and correct ambiguities. Try to answer questions at the end of the text chapters or use the "Interactive Study" guide on CD ROM which comes with your text. Take advantage of the online resources provided by the textbook publisher. These are all proven mechanisms for obtaining command of the subject matter, but it requires time.

Each lecturer has specific office hours and a desire to help students understand the material and the assignments. If you need assistance for any reason (for example to clarify a confusing concept or explain what the instructor expects, etc.) **take advantage of office hours**. If the posted times do not fit your schedule, arrange with the instructor a time of mutual convenience, but don't expect your instructor to drop whatever she/he is doing at the moment you drop by to help you. You can also contact your instructors by email, and this will often prove an efficient and quick way to obtain answers to simple questions.

Finally, be sure you understand the material as we go. Memorizing facts without understanding the conceptual framework is like trying to memorize 100 telephone numbers. Use the text and/or the instructor's office hours to sort out difficulties in understanding the material when these problems arise, not the day before the exam! Most students find that **the exams are hard!** They will test your understanding of concepts as well as the facts that support them. We will ask you to use your knowledge, not just spit it back. One method many students find successful is to study in small groups, but also leave time to study on your own. You should plan on devoting 10-12 hours per week study time (outside of class time).

Biology 203 Course Schedule – Spring 2010

Dr. Kathleen McGuire and Dr. Ralph Feuer

Class Meeting	Day	Month	Date	Topic	Reading	Instructor
1	Thurs	Jan	21	Introduction: Review of Chemistry I	Ch. 2-4	Feuer
2	Tues	Jan	26	Review of Chemistry II	Ch. 2-4	Feuer
3	Thurs	Jan	28	Amino Acids and Proteins	Ch. 5	Feuer
4	Tues	Feb	2	Carbohydrates and Lipids	Ch. 5	Feuer
5	Thurs	Feb	4	Cell Structure	CH. 6	Feuer
6	Tues	Feb	9	Energy, Enzymes and Metabolism	Ch. 8	Feuer
7	Thurs	Feb	11	EXAM I – Chaps 2-6, 8		
8	Tues	Feb	16	Membrane Structure and Transport	Ch. 7	Feuer
9	Thurs	Feb	18	Respiration: Glycolysis and the Citric Acid Cycle	Ch. 9	Feuer
10	Tues	Feb	23	Cell Respiration Mitochondrial Transport	Ch. 9	Feuer
11	Thurs	Feb	25	Photosynthesis: Light Reactions and the Calvin Cycle	Ch. 10	Feuer
12	Tues	March	2	Cell Signaling	Ch. 11	Feuer
13	Thurs	March	4	Mitosis	Ch. 12	Feuer
	Tues	March	9	Furlough Day		Feuer
15	Thurs	March	11	EXAM II – Chaps 7, 9-12		
16	Tues	March	16	Meiosis	Ch. 13	McGuire
17	Thurs	March	18	Genetics: Mendel and the Gene Idea I	Ch. 14	McGuire
18	Tues	March	23	Genetics: Mendel and the Gene Idea II	Ch. 14	McGuire
19	Thurs	March	25	Furlough Day		McGuire
	Tues	March	30	Spring Recess		
	Thurs	April	1	Spring Recess		
20	Tues	April	6	Chromosomal Basis of Inheritance I	Ch. 15	McGuire
21	Thurs	April	8	Chromosomal/Molecular basis of Inheritance	Ch. 15, 16	McGuire
22	Tues	April	13	Molecular Basis of inheritance	Ch. 16	McGuire
23	Thurs	April	15	From gene to protein I	Ch. 17	McGuire
24	Tues	April	20	EXAM III – Chaps. 13-16		McGuire
25	Thurs	April	22	From gene to protein II	Ch. 17	McGuire
26	Tues	April	27	Prokaryotic gene expression	Ch. 18	McGuire
27	Thurs	April	29	Eukaryotic gene expression	Ch. 18	McGuire
28	Tues	May	4	Biotechnology I	Ch. 20	McGuire
29	Thurs	May	6	Biotechnology II	Ch. 20	McGuire
30	Tues	May	11	EXAM IV – Chaps. 17, 18, 20	Ch. 20	McGuire