**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**

<table>
<thead>
<tr>
<th>Dr. Kathleen McGuire</th>
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<tr>
<td>Office: North Life Sciences 407</td>
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<tr>
<td>Phone: (619) 594-7191</td>
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<tr>
<td>email: <a href="mailto:kmcguire@sunstroke.sdsu.edu">kmcguire@sunstroke.sdsu.edu</a></td>
</tr>
<tr>
<td>Office Hours: Tues/Thurs 12:00pm-1:00pm</td>
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<tr>
<th>Dr. Ralph Feuer</th>
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<tr>
<td>Office: South Life Sciences 358</td>
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<tr>
<td>Phone: (619) 594-7377</td>
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<tr>
<td>Email: <a href="mailto:rfeuer@sciences.sdsu.edu">rfeuer@sciences.sdsu.edu</a></td>
</tr>
<tr>
<td>Office Hours: Tues/Thurs 9:30am-10:30am</td>
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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:

<table>
<thead>
<tr>
<th>Cell Structure and Function</th>
<th>Energy Metabolism</th>
<th>Classical Genetics</th>
<th>Molecular Biology</th>
</tr>
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</table>

**Textbook Required:**
Publisher Website: [www.campbellbiology.com](http://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.**

<table>
<thead>
<tr>
<th>Exam I material</th>
<th>100 points</th>
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<tbody>
<tr>
<td>Exam II material</td>
<td>100 points</td>
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<tr>
<td>Exam III material</td>
<td>100 points</td>
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<tr>
<td>Exam IV material</td>
<td>100 points</td>
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Grades are earned on a straight percentage basis as shown below:

<table>
<thead>
<tr>
<th>Scale:</th>
<th>B+: 87-89.9%</th>
<th>C+: 77-79.9%</th>
<th>D+: 67-69.9%</th>
<th>F: &lt;59.9%</th>
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<tbody>
<tr>
<td>A: 93-100%</td>
<td>B: 83-86.9%</td>
<td>C: 73-76.9%</td>
<td>D: 63-66.9%</td>
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<tr>
<td>A-: 90-92.9%</td>
<td>B-: 80-82.9%</td>
<td>C-: 70-72.9%</td>
<td>D-: 60-62.9%</td>
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</table>

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).
<table>
<thead>
<tr>
<th>Class Meeting</th>
<th>Day</th>
<th>Month</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Instructor</th>
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<tr>
<td>1</td>
<td>Thurs</td>
<td>Jan</td>
<td>21</td>
<td>Introduction: Review of Chemistry I</td>
<td>Ch. 2-4</td>
<td>Feuer</td>
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<td>2</td>
<td>Tues</td>
<td>Jan</td>
<td>26</td>
<td>Review of Chemistry II</td>
<td>Ch. 2-4</td>
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<td>Thurs</td>
<td>Jan</td>
<td>28</td>
<td>Amino Acids and Proteins</td>
<td>Ch. 5</td>
<td>Feuer</td>
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<td>Tues</td>
<td>Feb</td>
<td>2</td>
<td>Carbohydrates and Lipids</td>
<td>Ch. 5</td>
<td>Feuer</td>
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<td>5</td>
<td>Thurs</td>
<td>Feb</td>
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<td>6</td>
<td>Tues</td>
<td>Feb</td>
<td>9</td>
<td>Energy, Enzymes and Metabolism</td>
<td>Ch. 8</td>
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<td>Thurs</td>
<td>Feb</td>
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<td>EXAM I – Chaps 2-6, 8</td>
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<td>Feb</td>
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<td>Feb</td>
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<td>25</td>
<td>Photosynthesis: Light Reactions and the Calvin Cycle</td>
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<td>March</td>
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<td>March</td>
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<td>March</td>
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<td>Meiosis</td>
<td>Ch. 13</td>
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<td>March</td>
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<td>Ch. 15</td>
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<td>April</td>
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<td>Molecular Basis of inheritance</td>
<td>Ch. 16</td>
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<td>Thurs</td>
<td>April</td>
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<td>From gene to protein I</td>
<td>Ch. 17</td>
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<td>From gene to protein II</td>
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<td>May</td>
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<td>Ch. 20</td>
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<td>May</td>
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<td>EXAM IV – Chaps. 17, 18, 20</td>
<td>Ch. 20</td>
<td>McGuire</td>
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