Cells are amazing and wonderful entities: they are diverse and complex, and despite their small size, carry out all the functions necessary for life. If some group of cells in your body ceases to function or malfunctions, you may experience the symptoms of diabetes, immune deficiency, or cancer. Some organisms are only one cell in size; others begin as single cells and develop until they contain multitudes of cells, specialized and carefully coordinated, functioning as one organism.

For students interested in ecology, animal behavior or organismal biology, a knowledge of cellular processes enhances understanding the mechanisms that influence behavior (action of hormones) or ability to survive certain environmental conditions (ecological physiology).

The first part of the course will serve as an introduction to cellular biochemistry, with an emphasis on proteins, the most diverse class of biological molecules. We will study protein structure and function, with a focus on how enzymes keep cells alive (the topic of metabolism) and how these enzymes are regulated.

The course will also focus on cellular processes, such as transport across membranes, the synthesis and targeting of proteins to various cellular destinations, how movement is generated, and how cells receive signals from their environment. As we cover these topics, you will see how these basic processes contribute to the function of specialized cells (such as neurons and muscle cells). We will finish the course by studying the complex and fascinating functioning of the immune system.

**Learning Outcomes:** By the end of the course, students should…

1. Gain a greater conceptual understanding and factual knowledge of cellular structures and processes, as well as the ability to apply this content knowledge in solving problems.
2. Become comfortable using a variety of laboratory approaches to study cells and cellular processes, and able to select the appropriate technique(s) to achieve a specific goal.
3. Be able to analyze, interpret and draw conclusions from data obtained in lab, in Data Set problems or from the scientific literature, and to clearly explain the conclusions and connections to course topics.
Prerequisites:
You must have completed one full year of college chemistry before taking this course. This is an absolute requirement. Biology 111 (or its equivalent) is also required. Completion of Organic Chemistry (Chem 250) before taking this class is helpful, but not mandatory.

Required Reading

Course structure:
This course will consist of two lectures and one 4-hour lab per week. Reading assignments and examinations are listed in the schedule. It is expected that you will prepare for lecture by scanning the assigned material before class and preparing answers for the discussion questions. Discussion questions are indicated with a bold (D) beside the lecture topic. Reviewing your lecture notes and a careful reading of pertinent sections of the text should be a routine follow-up to lecture.

### Biology 212 Tentative Lecture Schedule Fall 2019

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Lecture</th>
<th>Discussion/Review Questions in brackets [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Sept. 3</td>
<td>Course introduction / Q0 / Cells in context</td>
<td>ch. 1 [review questions]; ch. 7.1-7.2; Figs. 7.5 &amp; 7.24</td>
</tr>
<tr>
<td></td>
<td>Sept. 5</td>
<td>Cells in context / Proteins (D)</td>
<td>Ch. 2.8-2.12; ch. 12.21; ch. 18.11 &amp; 18.13 [proteins]</td>
</tr>
<tr>
<td>02</td>
<td>10</td>
<td>Proteins / Membranes (D)</td>
<td>Ch. 2.7; ch. 4.1-4.6 [membranes]</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Q1 / Cell death</td>
<td>Ch. 15.17</td>
</tr>
<tr>
<td>03</td>
<td>17</td>
<td>Cell death</td>
<td>Ch. 15.17</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>EXAM 1</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Oct. 24</td>
<td>Enzymes (D): energetics, substrate binding &amp; catalysts, kinetics</td>
<td>Ch. 3.1-3.7 [enzymes]</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Enzyme regulation &amp; inhibition</td>
<td>Ch. 13.12</td>
</tr>
<tr>
<td>05</td>
<td>1</td>
<td>Cellular respiration (D): glycolysis &amp; Krebs cycle</td>
<td>Ch. 3.9-3.11 [metabolism &amp; cellular respiration]</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Handling electrons &amp; generating ATP</td>
<td>Ch. 5.4-5.9</td>
</tr>
<tr>
<td>06</td>
<td>8</td>
<td>Q2 / ATP generation / Photosynthesis (D)</td>
<td>Ch. 5.7-5.9; ch. 6.1-6.3 [photosynthesis]</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Photosynthesis</td>
<td>Ch. 6.4-6.9</td>
</tr>
<tr>
<td>07</td>
<td>15</td>
<td>EXAM 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Protein synthesis, targeting &amp; secretion</td>
<td>Ch. 8.1, 8.3-8.4, 8.8-8.9, 8.13-8.14, 8.21; ch. 12.2</td>
</tr>
<tr>
<td>08</td>
<td>22</td>
<td>FALL BREAK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Transport (D) / Ion channels / nerve function</td>
<td>Ch. 4.9-4.14, 4.16-4.17</td>
</tr>
</tbody>
</table>
Biology 212  Lab Schedule  Fall 2019

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Lab Exercise</th>
<th>Assignment</th>
<th>Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Sept. 4, 6, 9</td>
<td>Ethical issues in science (P-questions only)</td>
<td>Worksheet (5)</td>
<td>Today in lab</td>
</tr>
<tr>
<td>02</td>
<td>11, 13, 16</td>
<td>Analyzing proteins 1 (P-10)</td>
<td>Worksheet (10)</td>
<td>Today in lab</td>
</tr>
<tr>
<td>03</td>
<td>18, 20, 23</td>
<td>Analyzing proteins 2 (P)</td>
<td>Duplicate pages (5)</td>
<td>Today in lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Worksheet (5)</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>25, 27, 30</td>
<td>Absorption spectroscopy (P)</td>
<td>Figures, tables &amp; duplicate pages (25)</td>
<td>Wk 5 in lab</td>
</tr>
<tr>
<td>05</td>
<td>Oct. 2, 4, 7</td>
<td>Light Microscopy (P-questions only, 10)</td>
<td>Duplicate pages and sketches (10)</td>
<td>Today in lab</td>
</tr>
<tr>
<td>06</td>
<td>9, 11, 14</td>
<td>Centrifugation (P-10)</td>
<td>Worksheet (15)</td>
<td>Today in lab</td>
</tr>
<tr>
<td>07</td>
<td>16, 18, 21</td>
<td>NO LAB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>23, 25, 28</td>
<td>Enzymes 1 (P-Questions)</td>
<td>Proposal</td>
<td>Today in lab</td>
</tr>
<tr>
<td>09</td>
<td>Oct./Nov. 30, 1, 4</td>
<td>Enzymes 2 (P-Reagents)</td>
<td>Assignment (20) &amp; oral presentation</td>
<td>Wk 10 in lab</td>
</tr>
<tr>
<td>10</td>
<td>6, 8, 11</td>
<td>Enzymes 3</td>
<td>Duplicate pages</td>
<td>Today in lab</td>
</tr>
</tbody>
</table>

FINAL EXAM – TUESDAY, DEC. 19, 12-2 P.M.
11  13, 15, 18  Enzymes 4  Formal report (100)  Week 14 in lab
12  20, 22, 25  Advanced microscopy  Worksheet (5)  Today in lab
13  Nov./Dec.  27, 29, 2  NO LAB
14  4, 6, 9  Literature workshop  Worksheet (10)  Today in lab
                      (P—Questions only)
                      Lab Quiz (5)

$P = \text{pre-lab assignment required—see the lab exercise for specific components needed}$
(each pre-lab is worth 5 pts. unless another value is indicated)

Canvas
Canvas is an online companion to this course and using these resources is one key for success. You
will be held responsible for announcements and information posted on Canvas. The Cell Biology
home page has quick navigation links for the various course modules.

BIOL 212 A Cell Biology

<table>
<thead>
<tr>
<th>Module links</th>
<th>Getting started</th>
<th>Lab Aids</th>
<th>Lecture Slides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1</td>
<td>Unit 2</td>
<td>Unit 3</td>
<td>Unit 4</td>
</tr>
</tbody>
</table>

- **Getting started**—this module contains electronic copies of the syllabus and schedule as
  well as a variety of study aids (such as amino acid flash cards) and helpful information
  regarding my teaching/testing style, test anxiety, and the impact of sleep on memory.
- **Lab Aids**—this section contains resources for lab
- **Lecture slides**—after class each day, the slides from class will be posted here.
- **Units 1-4** list the resources that are relevant for a particular set of class topics: discussion
  questions, practice problems, sample exams, etc.

Here are the types of resources available on Canvas (distributed within various modules).

- **Announcements**—Updates regarding the lecture schedule & information about upcoming
  assignments, quizzes, and exams. These are sent out by email; you can also access the
  Announcements on Canvas by clicking on the Canvas menu
- Electronic copy of the lecture/lab schedule and syllabus (in the Getting Started module)
- **Discussion & Review Questions**—Questions to answer before certain lectures (indicated in
  the lecture schedule with a bold “D”).
- **Practice Problems**—Sample problems to accompany various course topics. Many of these
  problems are taken from my old exams and emphasize the application-style questions that I
  tend to write.
Sample Exams—Last year’s exams. These exams show you the overall structure of an exam, including both factual and application questions. They are good practice tools (don’t try to answer the data set questions—these are completely different each year—but reading over the key to note the desired level of detail in an answer can be instructive).

Quiz & Exam Keys—Answers for your exams and quizzes. If a question proved difficult for the class, I will sometimes provide additional explanation and information—you are responsible for this additional information on future exams.

Current Data Sets & Exams—Data sets will be posted here in case you lose yours. Towards the end of the semester, this term’s exams will be posted in case you’d like blank copies to use in studying for the final exam.

Study & Lab Aids (in the Getting Started module)—A variety of resources from specific items for study (amino acid flash cards, lecture diagrams, lab materials) to general aids to improve efficiency of studying (checklist to use before exams, tips from the TAs, deciphering professor teaching & testing styles)

Clickers
The clicker model we are using is Turning Technologies Response Card LCD. Turning Technologies uses a cloud-based format, and you will need to register your clicker.

Here are the steps to register your clicker:
1. You’ll receive an email from Turning Technologies with an invitation to enroll.
2. Follow the link/instructions in the email. You will need to enter your Puget Sound e-mail address and click “Create an account.”
3. A message will be sent to your email address. Open the message and click on the verification link.
4. In the box that appears, fill in all required fields (indicated by *) and click “Finish.”
5. Enter the device id (the boxed # in the photo). You will NOT need a license code since the department has purchased a course license to cover everyone in the class.

- We will be using Channel 41—this is the default setting, but if you have a used clicker, you should check the channel setting by pressing the channel button & looking at the display. If you need to change the channel, follow the directions below. This excerpt from the instruction manual also indicates the meaning of the flashing lights.
Clicker responses will contribute to your participation credit. Bring your clicker daily; if you don’t have your clicker, you can’t accumulate participation points. In addition, you must be present to earn clicker participation credit (asking someone else to use the clicker to give you points is a breach of academic honesty).

**Grading**

Success on examinations and quizzes in this course requires precise knowledge of terms, definitions, and details of mechanisms, and an understanding of general principles, as well as the ability to apply your knowledge to new situations. The ability to explain your answers thoroughly and clearly is very important. A take-home problem (data set) will be provided before each exam for your contemplation. You are free to discuss data sets with any currently enrolled cell student (but NOT with anyone outside of this class). Questions on the data set will appear on the exam. Exam content and format is often a source of concern for students. Exam question sources and formats are listed below to help focus your studying.

<table>
<thead>
<tr>
<th>Sources of Exam Questions</th>
<th>Formats &amp; types of Exam Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture notes (major component)</td>
<td>Multiple choice (with potential for multiple answers)</td>
</tr>
<tr>
<td>Data set</td>
<td>Fill in tables</td>
</tr>
<tr>
<td>Treasure Hunt questions (specifically defined</td>
<td>Creation and labeling of diagrams</td>
</tr>
<tr>
<td>questions based on text)</td>
<td>Essay</td>
</tr>
<tr>
<td>Discussion/review questions</td>
<td>Factual—may be detailed</td>
</tr>
<tr>
<td>Assigned articles</td>
<td>Conceptual (significance &amp; understanding)</td>
</tr>
<tr>
<td>Lab—theory &amp; practice</td>
<td>Application (apply facts &amp; concepts to new scenarios)</td>
</tr>
<tr>
<td>Practice problems</td>
<td>Additional formats may be used occasionally</td>
</tr>
</tbody>
</table>

Make-up examinations and quizzes will **not** be given (but please inform me if you must miss an exam or quiz--excused absences will be considered in the calculation of your final grade). **If you find you are having difficulty with any aspect of the course or school in general (or just want to visit), please come and see me.** The most rewarding aspect of teaching at a school like Puget Sound is the opportunity to get to know students individually--I hope you will stop by so that I can get to know you better.

Course grades will be assigned based on the **total accumulated points**.

<table>
<thead>
<tr>
<th>Grade Points:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 exams (100 pts each)</td>
<td>300</td>
</tr>
<tr>
<td>Final exam</td>
<td>200</td>
</tr>
<tr>
<td>Laboratory work &amp; report</td>
<td>280</td>
</tr>
<tr>
<td>Participation &amp; attendance</td>
<td>20</td>
</tr>
<tr>
<td>Quizzes (40 pts each)*</td>
<td>120</td>
</tr>
<tr>
<td>Total</td>
<td>920</td>
</tr>
</tbody>
</table>

* the lowest quiz score will be dropped

Grades will be assigned on a straight-scale basis (Note: if the class average is exceptionally low at the end of the course, I will consider a curve). The grading scale is listed below:
<table>
<thead>
<tr>
<th>% of total points</th>
<th>grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93 - 100</td>
<td>A</td>
</tr>
<tr>
<td>90 -</td>
<td>A-</td>
</tr>
<tr>
<td>87 -</td>
<td>B+</td>
</tr>
<tr>
<td>83 -</td>
<td>B</td>
</tr>
<tr>
<td>80 -</td>
<td>B-</td>
</tr>
<tr>
<td>77 -</td>
<td>C+</td>
</tr>
<tr>
<td>73 -</td>
<td>C</td>
</tr>
<tr>
<td>70 -</td>
<td>C-</td>
</tr>
<tr>
<td>67 -</td>
<td>D+</td>
</tr>
<tr>
<td>63 -</td>
<td>D</td>
</tr>
<tr>
<td>60 -</td>
<td>D-</td>
</tr>
</tbody>
</table>

**Late policy**

All late lab reports and worksheets must be turned in to me (in person) or to Laura Strong in the Biology office (Th 223A, x2855). Please ask the secretary to stamp your paper with the date and time. The Instructor Assistants (IAs) have been instructed not to accept late labs because some students may have more access to the IAs than other students (for example, if they live near each other or attend the same classes). *Please note: sliding assignments under doors* is not acceptable—**hand your paper to a Biology staff or faculty member and ask them to date & initial it and place it in my box.* [*It’s a little-known fact that the space under office doors leads directly into black holes. Students who have used this route to submit papers often had their assignments mysteriously disappear before I could find them.]*

**Late penalty for lab assignments:** 5% per day (excluding weekends) will be assessed.

**Late prelabs:** A 10% deduction will be assessed for a prelab turned in after the lab lecture has started. No credit will be given for a prelab once the lab lecture is finished and students have started work.

*Please turn off cell phones during class—distractions interfere with learning, which makes it harder to do well on exams. No electronic devices will be allowed during exams.*

**The Laboratory**

**Lab dress code:** Close-toed shoes, goggles and covered arms/legs (you can wear a long-sleeve shirt/jacket or bring a lab coat.

Lab exercises are available in a **printed lab manual** that you should obtain from the Bookstore; be sure to get your copy well in advance of the week 2 lab (there’s a long prelab required).

Some of the lab exercises are designed to acquaint you with important methods used in cell biology; other exercises allow you to use these techniques to design your own experiments. In addition, all exercises emphasize the development of laboratory and analytical skills:

- organization of a lab notebook & recording observational detail
- quantitative skills, data processing and analysis
- development of conclusions from results, and written communication of your findings.
You will work with a partner during the collection of laboratory data, however, all written lab work is to be composed individually.


**Lab notebook**

All pre-lab assignments and laboratory data must be recorded in a **bound lab notebook with duplicate pages**. Reserve the initial pages for identification (your name, course number and semester) and a table of contents—the lab notebooks I have ordered for this course have a designated section for a table of contents. Because these notebooks have carbonless duplicate pages, you need to be careful to place the cover flap underneath the set of pages on which you are writing or you may end up with a superimposed jumble on the duplicate page.

In your lab notebook, you should keep an account of procedures actually used and data collected. **ALL** data should be recorded directly into your lab notebook, not on scratch paper or paper towels for later recopying (I did this once and lost the paper towel before I retrieved my data). The lab notebook is also the place to record your observations, thoughts, and conclusions about an experiment or lab exercise. Your notebook should be sufficiently organized and detailed to allow someone else to reproduce your work. Your notebook should contain a thorough record of your results and observations. Data should be recorded in tabular form and plotted in graph form directly in the lab notebook during the lab session. All records should be in ink. If you make a mistake, cross it out with a single line, don't completely cover it with scribbles. The duplicate pages for each lab will be turned in at the end of each lab period.

The importance of organization in a lab notebook can't be over-emphasized. A good lab notebook is never perfect, but it is well labeled. Use headings for different information and titles for tables and graphs. These labels will help you when it comes time to write lab reports, and they will also help other people understand and/or repeat your work. From time to time, your IA will be directed to look for information in the duplicate pages you turn in. It is essential that they be able to locate the information quickly and easily. Credit will not be given if the IA can't find the information (even if it's there, buried in some obscure corner of the page).

**Pre-lab assignments**

You must come to lab thoroughly oriented with the purpose and procedures to be carried out. It is assumed that you will always prepare for lab by carefully reading the exercise (it is also wise to take note of the type of assignment you will be expected to turn in). Each week, a prelab assignment should be completed before lab—please note: late prelabs will receive a penalty and may not be accepted once students have started on the lab exercise. It is very important that you check BOTH the syllabus AND the lab exercise for pre-lab assignments. A complete pre-lab assignment consists of the following (some labs require only a partial pre-lab—check the lab schedule):

**Complete before lab & turn in at the beginning of lab (before the start of the lab lecture)**
• answer the **questions** posed at the beginning of the lab exercise (most, but not all, labs will have pre-lab questions at the beginning).

• state the **purpose or experimental question to be answered** by the lab exercise. If the lab exercise is divided into sections, you should identify an experimental question or purpose for each section. The purpose or question should focus on the experimental/biological information you will gain from the lab exercise, not the techniques you will learn. In other words, what will this exercise show you about the molecule/cell/organism you are studying?

• prepare a **list of reagents**. The important characteristics to note for each reagent are its
  o chemical formula or structure (whichever is more informative)
  o relative solubilities (basically—what solvent would you use if you had to had to wash it off, no specific numbers needed)
  o hazardous properties, and precautions that need to be taken.

  Where to find this information? Online chemical catalogs are useful. Here are a couple options. The lab manual has more information on locating information on the Sigma-Aldrich website.
  - Sigma-Aldrich [https://www.sigmaaldrich.com/united-states.html](https://www.sigmaaldrich.com/united-states.html)

  **Notes:**
  - You may see multiple listings for a chemical (slightly different forms—such as pyruvic acid vs sodium pyruvate. Select the one that seems most similar to the name in the lab manual, but don’t worry about slight differences.
  - While it is important to note hazards and precautions, be aware that the Safety Data Sheets (SDS) are usually written for a more concentrated or powder form than the more dilute solutions we are using in lab.

**Complete before lab & retain in your notebook for the IA to check—turn in at the end of lab**
*(you may want to make annotations)*

• write out the **procedures** in a step-wise manner or as a flow-chart in your lab notebook before coming to lab (you can also note any questions you have about the procedure, so that you can remember to ask them at the beginning of lab). Because you often need to modify the procedure in lab or may need to record observations, you may find it useful to write out the procedure in the left column of the page and leave the right column for notes, calculations and modifications (this is a suggestion—use whatever format that works for you).

**Research Reports (lab reports)**

A formal typed report of one experiment will be due as noted in the lab schedule. In addition to a hard (paper) copy of the report, you will ALSO need to submit a copy of your report as a Canvas Turnitin assignment.

A description of the research report format is provided in the Reference Section of the lab manual.
In summary, for each research report, you will need to submit…

- Hard copy for grading (determines whether the paper is on time)
- Electronic copy to Canvas (a Turnitin assignment link will be available on the class site)

In addition to comparing current and previous reports, the Turnitin will also compare your report with the lab exercise, so don’t copy the procedure for your methods section. Besides—methods sections of research reports are written as summaries, with certain specific information included, rather than step-by-step directions. Be sure to cite the lab manual. Assume that your reader knows how to set up and run a gel, but needs to know the types of things that can vary from gel to gel.

University Policies & Resources

Classroom Emergency Response Guidance
Please review university emergency preparedness and response procedures posted at 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. Our designated gathering area is along the sidewalk that runs from Thompson to Jones/Howarth (between Karlen Quad and Todd Field).

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. Stay low, away from doors and windows, and as close to the interior hallway walls as possible. Wait for further instructions.

Office of Accessibility and Accommodations
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Peggy Perno, Director of the Office of Accessibility and Accommodations, 105 Howarth, 253.879.3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Please notify me well in advance should you require accommodation in the class or lab.

Student Bereavement Policy
"Upon approval from the Dean of Students’ Office, students who experience a death in the family, including parent, grandparent, sibling, or persons living in the same household, are allowed three consecutive weekdays of excused absences, as negotiated with the Dean of Students’. For more information, please see the Academic Handbook."

To request bereavement leave, a student must notify the Dean of Students’ Office by email, phone, or in person about the death of the family member. When bereavement leave is approved, the Dean of Students’ Office will notify the student and the Office of Academic Advising. In turn, Academic Advising will notify the student's instructors and advisor of the dates of excused absences for bereavement leave. When the student
returns from leave, the student must submit to the Dean of Students’ Office an obituary notice, a funeral or memorial program, or other documentation regarding the death of the family member.

While this policy excuses a student from class attendance, the student remains responsible for missed academic work. Therefore, the student is to seek the advice of each instructor to consider the options and to establish a plan to compensate for coursework missed during bereavement leave. For more information, please contact the Dean of Students’ Office. [http://www.pugetsound.edu/student-life/student-handbook/academic-handbook/bereavement-policy/]

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Course materials are for educational purposes only and limited to students enrolled in the course. They are protected by copyright law and may not be copied, downloaded, stored, transmitted, shared or changed in any way.

**Academic Honesty**

Just as scientific integrity is essential for the validity of scientific results, academic integrity is the fundamental principle upon which institutions of higher education are built. For this reason, academic institutions implement codes of academic honesty and establish penalties for the breaking of these codes. The policy on academic honesty at this university is stated in the Academic Handbook.

While the majority of students observe the standards of academic integrity (it's the only approach that maximizes learning), a few students have abused the system. Policies on academic honesty are designed to protect honest students (and arise when someone in the past was dishonest). I value your sincere effort--that's the reason that academic dishonesty won't be tolerated in this class.

Academic integrity should govern all your actions in this course. The following acts of academic dishonesty are especially relevant to this course:

- Cheating during exams or quizzes
- Discussion of data sets with any individual who is not currently enrolled in cell biology (you may approach me with questions, but all other non-classmates are off limits)
- Plagiarism on lab reports or any written assignment--all assignments are to be written **individually** unless the instructions explicitly allow group work. Plagiarism includes direct copying or paraphrasing of another source (book, lab manual or another student's paper) or using another person's ideas or organization without providing sufficient credit. Copying another source for any part of an assignment or report constitutes plagiarism.
- Alteration, misrepresentation, or misuse of lab data (this includes making one's results appear better than they really are).
- Misuse of library material. This includes unauthorized removal of material from the library or damaging library material. Nothing is more aggravating than finding that someone has removed an important book or paper that you need for a major assignment.
The minimum penalty for academic dishonesty will be a 100-point deduction and harsher grade penalties or failure of the course may occur for serious offences. The University requires that all incidents of academic dishonesty be reported to the Dean's office. If you are seeking admission to a professional school, you should be aware that many professional school applications specifically ask whether any action has been taken against you for academic dishonesty. See the Academic Handbook for information on Academic Honesty and a description of plagiarism.

While I don't relish addressing such a somber subject at the beginning of the course, academic honesty is an important issue. Now that the ground rules have been established, I would like to spend the remainder of the semester focusing on your intellectual development and on the stimulating topic at hand: the intriguing subject of cell biology.
**Syllabus Questions**

Answer the following questions to turn in at the next class.

1. In the lecture schedule, what does a bold “Q” (Q) represent? What does a bold “D” (D) indicate?

2. Of the variety of items found on Canvas, list 2 of the categories that you anticipate will be most useful to you (this will vary by individual).

3. What is a “data set” as it will be used in this class?

4. List the components of a full prelab.

5. What is the late penalty for late labs? For late prelabs?

6. What is the minimum penalty for academic dishonesty?

*Sign the contract on the next page*
Biology 212
Student Contract

This contract must be signed in order to receive a grade for this course:

I HAVE READ AND UNDERSTAND THE SYLLABUS PROVIDED. I AM AWARE OF THE FOLLOWING:

- Quiz, exam and final exam dates. I understand that no make-up quizzes or exams will be given, and that electronic devices are not allowed during quizzes or exams.
- The laboratory schedule, guidelines for lab preparation and lab due dates.
- That lab assignments and prelabs are due at the beginning of lab and that late assignments or prelabs will be penalized
- If I miss class, it is my responsibility to obtain notes and information about assignments from a classmate.

I HAVE READ AND UNDERSTAND THE STATEMENT ON ACADEMIC HONESTY AND THE PENALTIES ASSOCIATED WITH VIOLATIONS OF THIS POLICY. I pledge to refrain from any act of academic dishonesty, including:

- Cheating on exams and quizzes
- Discussion of data sets with non-classmates
- Any form of plagiarism (including copying or paraphrasing of any part of another person's lab report)
- Alteration, misrepresentation, or misuse of data
- Misuse of library materials (including the unauthorized removal of library material or the damage of any library or reserve material).

NAME (PRINT)________________________

SIGNATURE________________________

DATE________________________