INTRODUCTION TO BIOLOGY
SYLLABUS

Biology 101 is an introductory biology course for non-science majors that satisfies the Natural World and Natural Scientific Approaches Core requirements. This course is not intended to be a comprehensive survey of biology, but seeks to introduce basic biological principles and to illustrate these principles with relevant examples. This course does not fulfill requirements toward a major in Biology or the Natural Sciences and does not count towards a minor in Biology. Occasionally, a student will decide that they wish to major or minor in biology. If you find yourself in this position, please let me know so that we can discuss the best strategy for your future courses.

The study of biology involves examining organisms at many levels of a structural hierarchy: atoms, molecules, cells, tissues and organs, as well as looking at the transmission of characteristics from one generation to the next, and interactions between organisms. We will examine several of these topics using the theme of human health and disease and will delve more deeply into the topics of metabolic (the obesity epidemic) and infectious disease. In addition, an emphasis of the course will be the ability to acquire and evaluate biological information that will be useful to you throughout your lives.

The course will be divided into several sections.

- **The Scientific Process & Evaluating Information**—A consideration of the process of science and the mindset of scientists. This section will cover the design of experiments, clinical trials, and strategies for evaluating medical and scientific information.

- **Building an Organism: Structure, Development, Cell Division & Cancer**—A brief introduction to organ, tissue, and cell structure along with an overview of how an organism develops. The process of normal cell growth (cell division) will be contrasted with the abnormal growth regulation that leads to cancer.

- **Metabolic Disease: the Obesity Epidemic**—Unwanted weight gain is a multifaceted problem. This section will include background information on the digestive process, molecules that make up food, and metabolism. We will also briefly touch on the neurological and hormonal factors that influence weight gain or loss.

- **Inherited Disease**—Covers the mechanism for passing genetic information to offspring, and the patterns observed for inherited traits. The link between defective genes and observed inherited diseases will be explored, and the prospects for individualized treatment (personalized medicine) will be introduced.

- **Infectious Disease**—An introduction to the study of infectious disease. The mechanisms by which pathogens cause disease and the defense strategies of the host will be examined. Categories of disease-causing organisms will be introduced and example organisms will be covered in greater depth. We will also address the increasingly disturbing problem of antibiotic resistance in bacterial pathogens.
Learning Outcomes: By the end of the course, students should…

1. Gain a greater understanding of the scientific process and use this perspective in assessing and evaluating various claims encountered in daily life (such as promotions for fad diets, health products, or medical procedures).

2. Understand the connection between biological processes and the healthy or diseased states of cells, tissues and organs.

3. Practice and enhance the following skills:
   - the ability to learn from oral presentations (lectures) and reading
   - the ability to clearly explain biological processes
   - the ability to locate information sources related to biological topics
   - analytical and problem solving skills.

COURSE MECHANICS

Instructor: Joyce Tamashiro
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Office hours: For maximum availability and flexibility, I have an open door policy—you are welcome to visit anytime. I am often in my office unless I have lecture, lab, or meetings (if you are making a special trip over to Thompson Hall to see me, I suggest that you e-mail or call ahead to make sure I'll be available). If you come by and I am busy or not in my office, please sign up on the appointment sheet on my door.

Biology Office: Th 223A (Laura Strong, Biology secretary)

LECTURES:
The lecture meets Tu/Th 11-12:20 in Th 395. Lectures are used to discuss some of the more important or difficult topics as well as to consider information not available in the text. The lecture period will also be used for discussion of readings conducted outside of class and to introduce the types of problems typical for each section of the course.

It is essential that you prepare for lectures by reading or scanning your text. For certain topics, text material will not receive detailed coverage in lecture; rather the text reading will serve as a background and foundation for the lecture. Note-taking during lecture is important—some lecture material is not in your text. See the section on Study Strategies in this syllabus for suggestions on reading and note-taking.
READINGS:
The text for the course is *What is Life? A Guide to Biology with Physiology 3e*, by Jay Phelan. This text was written for an introductory one-semester college course in biology. It covers a range of topics in biology, and I hope you will enjoy exploring its pages. It is essential to preview the assigned chapter(s) in the text prior to each lecture: scan the text and pay special attention to diagrams. You will then be able to ask questions and integrate information from the text with material presented in the lecture. To guide your reading, **Preview Questions** will be available on Canvas. Following each lecture, you should attempt to integrate the information from the lecture with that in the text.

A variety of readings will be handed out in class or posted on Canvas. It is important to prepare for class discussion by reading these resources and answering any accompanying questions.

CANVAS:
I place important announcements, readings, and study materials on Canvas (Canvas.pugetsoud.edu). It is essential that you check this site frequently.

Here’s a guide to the types of information on Canvas:

- **Announcements**—Updates regarding the lecture schedule, information regarding coverage of exams and quizzes, other course announcements. Canvas will forward the announcement to you via e-mail, but will also retain the postings if you need to check an earlier announcement.
- **Syllabus & schedule**—Copy of the lecture/lab schedule and syllabus.
- **Lecture slides**—After each day of class, slides will be posted on Canvas as PowerPoint files and also in pdf format (the latter lose slide annotations, but are useful for reviewing the practice Clicker (polling) questions.
- **Preview Questions**—Questions to answer before certain lecture topics. When a reading is assigned, the announcement will also mention whether preview questions are available.
- **Lab Resources**—articles and links to use in preparation for lab. You will also need to purchase a Lab Manual at the Bookstore that contains the actual exercises.
- **Articles**—Additional reading. Some of these articles appear in the reading schedule OR will be announced via the news forum.
- **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.
- **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.
- **Assignment/Project**—documents describing assignments and the term project.
- **External links**—Websites with useful or interesting course-related material.
- **Blank Exams**—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.

You will be held responsible for announcements and information posted on Canvas.
CLICKERS

These devices are great learning tools; former students have enjoyed weighing in on clicker questions, and the resulting discussions and review of material have increased their understanding of the material. I hope clicker use will also be beneficial for you this semester. The model we are using is Turning Technologies Response Card LCD.

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).
LABORATORY:
Each student must register for a laboratory section. Each laboratory section will meet one day a week for 3 hours in Th 271. The lab manual is available at the bookstore.

To prepare for your lab you should:

- Consult the lab schedule for the assigned lab exercises
- Carefully read through the laboratory exercises BEFORE the lab
- Complete the pre-lab questions (see below)
- Review relevant pages of the text and the lecture notes

To complete the laboratory exercises within the scheduled 3 hours, it is imperative that you arrive at the lab having previously reviewed the laboratory instructions. Pre-lab questions accompany most lab exercises—be sure to have these questions answered and ready to turn in. Upon arrival at the lab you should turn in your pre-lab questions.

- Most lab sessions will cover more than one exercise and some exercises will take more than one week. Check the laboratory schedule carefully.
- Pre-lab questions that are turned in after the lab lecture has started will receive a late penalty and pre-lab questions turned in after students have started working on the lab exercises will not receive credit, so be sure to come on time.
- It is imperative that you attend your assigned lab section. If you cannot attend your regular section, let me know as soon as possible (in advance, unless your absence is due to a last minute emergency). Be ready to provide documentation for any missed labs. It may or may not be possible to make up a missed lab.

CLASS ATTENDANCE & PARTICIPATION:
Brief assignments (due in lecture) and selected in-class exercises will be collected, and points will be awarded for participation. The in-class exercises will not be announced ahead of time and cannot be made-up if you are absent from class. The assignment descriptions may be handed out in class or announced via Canvas and will be due at the beginning of the next class period (no late assignments accepted). Be sure to read the Canvas e-mails and consult a classmate or e-mail me if you needed to miss a class.

If you miss a class session, it is important to get notes from one of your classmates. Remember that someone else’s notes are never as good as being present and recording your own notes.

EXAMS AND GRADING:
Exams will be objective. The format may include multiple choice, matching, completion, definitions, and short essays. Some questions will be designed to test your knowledge of lecture material; other questions will require you to apply the principles you've learned to new situations. The exams are scheduled during lecture times (see lecture schedule). In addition, there will be several quizzes given during lecture (see lecture schedule). NO MAKE-UP exams or quizzes are given. Absence for bona fide medical reasons will require written evidence and MAY (OR MAY NOT) be considered in assessing final grades.
ALL ASSIGNMENTS AND ANSWERS TO PRE-LAB AND LAB EXERCISE QUESTIONS MUST BE WRITTEN INDIVIDUALLY. The minimum penalty for work copied or paraphrased from other sources (including another student) or for fabrication of information or sources will be 100 points, 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 Academic Handbook available online (http://www.pugetsound.edu/student-life/personal-safety/student-handbook/academic-handbook/academic-integrity/) for a definition academic dishonesty and examples of plagiarism.

Collins Library has information on academic integrity and includes a quiz to help you test your understanding. http://research.pugetsound.edu/c.php?g=304242&p=2028010

Final grades will be determined after evaluating the total points accumulated by each student. The maximum number of points possible is:

- 2 exams (100 pts. each) 200
- 4 quizzes* 60
- written lab work (pre-labs + exercises) 225
- assignments 60
- class participation 40
- final exam (comprehensive) 200
- total possible 785

Assigned course grades will assume the average grade (mean) to be approximately in the C+/B-range. Students tend to score lower on exams and higher on lab work.

* NOTE: If you have been present for all quizzes, your lowest score will be dropped (the dropped score could be one full quiz or 2 mini-quizzes). A quiz missed for any reason (e.g. illness, school-related activity, or unexcused absence) will be considered your lowest score and will be dropped. It is still a good idea to have documentation for all absences due to illness, athletic events, etc., as this may be considered in the assignment of your final grade.

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.

If you are granted accommodations, you MUST inform me and provide documentation from the Office of Accessibility and Accommodations ONE WEEK prior the first exam or quiz for which you seek an accommodation.
STUDY STRATEGIES

BEFORE LECTURE
1. Scan the reading assignment, and answer the Preview Questions. Also pay special attention to section headings and figures.

IN LECTURE
1. Be very thorough in your note-taking--I tend to write down major points and vocabulary on the board/overhead, but it's also very important for you to jot down the explanations and questions that I mention. These explanations often reveal the main concept I am trying to convey, tie together different parts of the course, and let you know my perspective and emphases--these may be valuable hints as to the types of exam questions I could write. More exam questions come from lecture than the book, so lecture attendance and note-taking is critical.

2. Mark places where you have questions--if you don't feel comfortable asking your question in the middle of lecture, at least you'll know where the confusing spot is so you can ask after class or in an office visit.

AFTER LECTURE
1. Review your lecture notes as soon as you can--while your memory is fresh you can add comments and explanations that didn't get recorded during lecture. If you wait a week, you probably won't remember the explanations that you heard.

2. Read those sections of the text that directly pertain to the lecture. If you come across helpful information, you can annotate your notes with material from the book. Taking exhaustive notes from the text is not a good idea (unless you are sent to the book to locate specific information).

3. Get questions about the material cleared up as soon as possible. You may want to establish regular study groups to discuss the lecture notes, you can come to me or your Instructor Assistant (IA), or you can make an appointment with a tutor at the learning center (x3395).

4. Prepare vocabulary lists or flash cards to help you learn new terms and processes (flash cards are nice because they can be shuffled--words appear in varied order, more as you would see on an exam).

PREPARATION FOR QUIZZES AND EXAMS
1. Assuming that you have already done steps 1-4 from the previous section, your study time will basically be spent reviewing material that you already understand.

2. Go over your lecture notes and flash cards. You should not need to go over your text--test questions are based on lecture notes (the exceptions are when I specifically send you to the text to read something not covered in lecture).

3. Go over preview questions, practice problems and the sample exam from Blackboard. All of these could serve as sources for exam questions. In addition, these materials help you adjust to my testing style.
4. Once your individual study time is complete, try explaining ("teaching") the material to someone, something, or even the wall.

**Additional University Policies & Resources**

**Classroom Emergency Response Guidance**

Please review university emergency preparedness, response procedures and a training video 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.

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BIOLOGY 101

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
- The laboratory schedule, guidelines for lab preparation and policies on missed labs
- That assignments and pre-lab questions are due at the beginning of lab or lecture. I also understand the late policy on pre-lab questions and that late assignments will not be accepted.
- Canvas will be used for important course announcement and materials. I understand that I am responsible for checking Canvas regularly.

I HAVE READ AND UNDERSTAND THE DEFINITION OF ACADEMIC HONESTY. I understand that the minimum penalty for academic dishonesty is 100 points and that more severe penalties may be imposed. I pledge to refrain from any act of academic dishonesty, including:

- cheating on exams and quizzes
- any form of plagiarism
- mis-representation of information (citing fictitious or inappropriate sources)
- Misuse of library materials (including the unauthorized removal of library material or the damage of any library or reserve material).

SIGNATURE __________________________

NAME ______________________________

DATE ______________________________