

Biology 232: Human Physiology – Syllabus for Spring 2019

(1) Course Information

- Sections: B/2082 (labs on Wednesdays) and C/2084 (labs on Fridays)
- Year and quarter: Spring 2019
- Schedule:
 - Lectures in Shuksan 141:
 - Tuesdays and Thursdays, 10:00-11:50am
 - Mondays, 11:00-11:50am
 - Labs in Shuksan 144:
 - Section B/2082: Wednesdays, 10:00-11:50am
 - Section C/2084: Fridays, 10:00-11:50am
 - Final exam in Shuksan 141 on Tuesday, June 18, 10:00-11:50am

(2) Instructor Information

- Instructor name: Gregory J. Crowther, Ph.D.
- Contact information:
 - Email: gcrowther@everettcc.edu (Canvas messages work too)
 - Office phone number: 425-388-9480 (note: I do not check voice-mail often)
 - Website: <http://faculty.washington.edu/crowther/>
- Office location: Shuksan 118
- Office hours for this quarter:
 - Mon/Tues/Wed/Thurs/Fri, 9:15-9:45am
 - Mondays, 9:45-10:45am
 - Mon/Tues/Wed/Thurs, 2:25-2:55pm
 - Canvas Chat the night before exams, 9:00-10:00pm
 - And by appointment

(3) Course Description*

Detailed study of the functioning, integration and interrelationships of the following organ systems of the human body using lecture and lab exercises: Neurologic (Including Autonomic and Special Senses), Muscular, Endocrine, Cardiac, Circulatory, Renal, Reproductive (including Pregnancy, Development, Growth and Senescence), Immune, Hematologic, Respiratory.

(4) Learning Objectives and Core Learning Outcomes*

Upon successful completion of this course, students will be able to meet these Learning Objectives:

- Describe in detail the functioning of the following systems: Neurologic (Including Autonomic and Special Senses), Muscular, Endocrine, Cardiac, Circulatory, Renal, Reproductive (including Pregnancy, Development, Growth and Senescence), Immune, Hematologic, Respiratory.
- Describe the integration of and interrelationships between these bodily systems.

- Clinically apply understanding of human physiology to factual scenarios, case problems, and/or pathologic conditions altering normal physiology.

Four of EvCC's seven Core Learning Outcomes are also introduced or assessed in this course:

- *Engage and take responsibility as active learners.* Students will acquire active learning skills by using multiple resources to answer application questions in lab, to complete clinical problems in teams, to complete worksheets and group discussions, and to learn material not taught through lecture.
- *Think critically.* Students will acquire analytical skills, problem-solving skills and the ability to distinguish physiologically rational claims from irrational claims through collaborative clinical problems, application questions in lab, and interactive questioning in lecture.
- *Communicate effectively.* Students will participate in class discussions and respond to short-answer question on lab worksheets and lecture exams.
- *Demonstrate computer and technology proficiency.* Students will use data-logging sensors to send experimental data to computers for graphing and analysis.

(5) Required Resources

- Summary of the details below: If you buy the bookstore bundle, you will probably need to contact the publisher (Pearson) to upgrade your online access from MasteringAandP.com (which we will not use) to PearsonMyLabAndMastering.com for an additional fee. Otherwise, you may be able to save money by obtaining each required resource as a separate item.
- Textbook: *Human Anatomy & Physiology* (11th edition/2019) by Elaine N. Marieb & Katja Hoehn, published by Pearson.
 - You are welcome to buy or rent this textbook, either as a physical copy or an online version, whatever works better for you. (Personally, I prefer to own a physical copy that I can annotate easily and keep for future reference.)
 - Sometimes this textbook is “bundled” with online resources. Please be aware that bundles such as the one offered by the Everett CC bookstore may include access to MasteringAandP.com, which is not a website we will use (see below). If you have access to MasteringAandP.com, you will probably need to pay an additional charge to upgrade to PearsonMyLabAndMastering.com. If you are in this situation, please confer with Pearson's technical support staff (contact info available from the websites listed above).
 - I frequently refer to page numbers, section numbers, figure numbers, and problem numbers in the current edition. If you choose to use an older edition, it is your responsibility to notice and overcome discrepancies between editions. Basically, if you use an old edition, you should make sure that you also have easy access to a current edition (e.g., through a friend who is taking the course) so that you can compare the two as needed.
- Lab manual: none! Lab handouts will be posted to the Canvas website (address below).

- Websites
 - Canvas website: <https://everettcc.instructure.com/courses/1762587>. Please check this site every day and/or adjust your Canvas settings so that you are notified of all new announcements, assignments, etc.
 - There is no additional charge for using this website.
 - ADInstruments Lt website, hosted by kuracloud.
 - We will use this for selected laboratory exercises. Detailed instructions will be provided later.
 - There is no additional charge for using this website.
 - Pearson My Lab and Mastering site: <https://www.PearsonMyLabAndMastering.com>. Your course ID is crowther86205. Note: this is not the same as MasteringAandP.com, which we will not use.
 - You will need to access the following parts of this website: Learning Catalytics (for “clicker” questions), PhysioEx (for simulated experiments; in the Study Area section), and Practice Tests and Quizzes (in the Study Area section).
 - You are welcome to use any of the other online resources that are included.
 - With the exception of Learning Catalytics (“clicker” questions), you will not be submitting any to-be-graded work to the Mastering website. Instead, you will submit assignments in Canvas or in person.
 - Use of this website requires a subscription, which may or may not be bundled with other items.
 - Please make sure that your subscription is to PearsonMyLabAndMastering.com (not MasteringAandP.com) and that it includes Learning Catalytics. If you accidentally wind up with a subscription to MasteringAandP.com, please contact Pearson’s technical support to upgrade it for an additional charge.
 - If you took Biology 231 or 232 during the previous quarter, you may be able to save money by extending or upgrading an existing subscription, rather than starting a new one. Please check with Pearson’s technical support as needed.
 - If you are currently awaiting financial aid or have some other temporary financial constraint, you can register for a 14-day free trial, after which you will need to pay for continuing access.

(6) Other Requirements and Expectations

(6.1) Prerequisites

- BIOL& 211 and 231 (or BIOL& 221 and 222 and 223) with a grade of C or higher
- CHEM& 121 (or CHEM& 161 and CHEM&162) with a grade of C or higher

Any student who has not yet met both prerequisites but wants to take this course should consult me as soon as possible (if you have not already done so).

(6.2) Attendance and Participation

Consistent attendance and participation are critical for success!

- Most important of all is that you come on time to all labs and exams. In cases of unavoidable scheduling conflicts or personal emergencies, contact me as early as possible and explain the situation in enough detail for me to grasp its seriousness; I will try to work something out with you. Arriving late to an exam does not entitle you to extra time unless you have an exceptionally good excuse. Arriving late to a lab inconveniences both your lab partner (who has to start without you) and your instructor (who has to re-explain things once you arrive).
- I urge you to attend all lectures as well. Please take advantage of the presence of your classmates and instructor, rather than figuring everything out on your own outside of class! I will do my best to make lectures engaging, interactive, and relevant to the exams. We will explore the material through think-pair-share discussions, clicker questions, worksheets, and even content-rich songs. Lectures will generally be recorded via Panopto, but recordings should be used as a supplement to (not a replacement for) participation in lectures. If you simply cannot get to a particular lecture, please notify me (in advance, if possible) so that I can help you stay on top of the material.

(6.3) Assignments

We learn through regular, focused, thoughtful practice. This course will give you many opportunities to practice working with and processing the material. In general, there will be assignments due before each lecture and lab to ensure that you are prepared for the day's work. There will also be numerous in-class and in-lab assignments, plus several lecture exams. These different assignments will be graded in different ways:

- Daily assignments will be graded for completeness (did you do the whole thing?) and timeliness (did you turn it in on time?).
- Exams will be graded for quality (were your answers good?). Exams will consist mostly of multiple-choice and short-answer questions.
- Lab worksheets will be graded for completeness, timeliness, and quality. In general, only a few answers will be checked for quality.

<i>Assignment category</i>	<i># of assignments</i>	<i>Points per assignment</i>	<i>Total points in this category</i>
Pre-lecture homework	24	2	48
In-lecture assignments	25 (lowest 5 dropped)	4	80
Pre-lab homework	9	2	18
Lab worksheets	9	10	90
Exams	5	100	500
Approximate total			736

(6.4) Final Grades

Final grades will be based on the percentage of total points earned, according to the chart below. No “curving” will be applied at the stage of awarding final grades.

0.00-59.49%: F	59.50-66.49%: D	66.50-69.49%: D+	69.50-72.49%: C-	72.50-76.49%: C	76.50-79.49%: C+
79.50-82.49%: B-	82.50-86.49%: B	86.50-89.49%: B+	89.50-92.49%: A-	92.50% and up: A	

(6.5) Late Work

In general, late work is accepted but penalized 20% per day, up to a maximum penalty of 60%. For example, a 10-point assignment would receive a 2-point penalty if submitted 0.1 to 24 hours late, a 4-point penalty if submitted 24.1 to 48 hours late, and a 6-point penalty if submitted more than 48 hours late. To minimize late penalties on assignments collected in class, email me a scanned or photographed copy as soon as possible. If you have a spectacularly good excuse for being late (e.g., a sudden illness or family emergency), let me know as soon as possible and I'll consider waiving the penalty.

(6.6) Academic Integrity – Cheating and Plagiarism

For exams, working with other students is NOT allowed (unless stated otherwise). For all other assignments, working together IS allowed (unless stated otherwise).

This class does not involve extensive library research or paper-writing. Nevertheless, if you use any sources other than your instructor, classmate, textbook, or lab handout, please cite them (I am not picky about format; a URL is generally fine). Examples:

- You quote the exact words used by another source, using quotation marks:
 - *According to Wikipedia, "People with extensive, bilateral hippocampal damage may experience anterograde amnesia—the inability to form and retain new memories." (source: <http://en.wikipedia.org/wiki/Hippocampus>).*
- You gather information from another source and put it in your own words:
 - *Patients with severe lesions in their hippocampus cannot create new memories (source: <http://en.wikipedia.org/wiki/Hippocampus>).*

Accidental or intentional use of someone else's work, ideas, research, or writing without attribution of the source may result in a failing grade on the assignment or a failing grade in the course, depending on the details of the situation. Any incidents of this type will be reported to the Dean of Student Development as a violation of the Student Conduct Code, which is described in the Student Rights and Responsibilities Handbook (everettcc.edu/files/students/student-activities/student-rights-responsibilities-and-policies.pdf).

(6.7) Other Tips for Success

- *Actively participate in everything.* Take notes in class. Ask questions. Answer questions, even if you have to guess. Don't let your lab partner do all the fun stuff. Take charge of your education!
- *Practice metacognition.* Metacognition refers to cognition about cognition, i.e., thinking about how you think. For students, this encompasses "knowing how to learn, being able to monitor their own understanding, being reflective about what they understand and do not understand,

and being able to strategize about how to resolve their confusions” (K.D. Tanner, *CBE Life Sciences Education* **11**: 113-120, 2012).

- *Work together.* This can be done both online (via Canvas Discussion posts and Chats) and in person. Form study groups and help each other out! Just be sure that your submitted work reflects your own understanding and credits any outside sources.
- *Respect me and your peers, and expect respect in return.* Respectful behavior includes: listening carefully when spoken to; giving people the time and space to think and to ask and answer questions; refraining from harsh or persistent criticism; avoiding language, attire, or movements likely to be annoying or distracting; keeping conversations reasonably focused on course material; and maintaining reasonable control over one’s emotions.
- *Get help when you’re starting to struggle, not after weeks of problems.* Let’s address small problems – regardless of whether they concern the material itself, study habits, interactions with classmates, or whatever – before they become big problems. Office hours and lab sessions are especially good times to check in with me.

(7) Approximate Class Schedule

Textbook chapters are referred to as “Ch.” This schedule is subject to change; however, every effort will be made to hold the tests on the days indicated.

Week # (Dates)	Mon. lecture (sections B&C)	Tues. lecture (sections B&C)	Wed. lab (section B)	Thurs. lecture (sections B&C)	Fri. lab (section C)
1 (April 8-12)	Ch. 1 (orientation)	Ch. 2 (chemistry)	Lab 1: Crossing Membranes (Ch. 3)	Ch. 3-4 (cells, tissues)	Lab 1: Crossing Membranes (Ch. 3)
2 (April 15-19)	Ch. 5 (integument)	Ch. 11 (nervous system)	Lab 2: Sensation, Reflexes, Reaction Times (Ch. 11-13)	Ch. 11 (nervous system)	Lab 2: Sensation, Reflexes, Reaction Times (Ch. 11-13)
3 (April 22-26)	Ch. 12 (CNS)	Ch. 13 (PNS/reflexes)	Lab 3: Special Senses (Ch. 15)	Exam 1 (Ch. 1-5, 11)	Lab 3: Special Senses (Ch. 15)
4 (April 29-May 3)	Ch. 14 (autonomic NS)	Ch. 15 (special senses)	No lab	Ch. 9 (muscles)	No lab
5 (May 6-10)	Ch. 10 (muscles)	Ch. 16 (endocrinology)	Lab 4: Muscles (Ch. 9)	Ch. 17 (blood)	Lab 4: Muscles (Ch. 9)
6 (May 13-17)	Ch. 18 (heart)	Exam 2 (Ch. 9-10, 12-15)	Lab 5: Blood (Ch. 17)	Ch. 19 (blood vessels)	Lab 5: Blood (Ch. 17)
7 (May 20-24)	Ch. 20 (lymphatic system)	Ch. 21 (immunity)	Lab 6: The Heart, ECG, BP (Ch. 18-19)	Exam 3 (Ch. 16-19)	Lab 6: The Heart, ECG, BP (Ch. 18-19)
8 (May 27-31)	No class (Memorial Day)	Ch. 22 (respiration)	Lab 7: Respiration (Ch. 22)	Ch. 25 (urinary system)	Lab 7: Respiration (Ch. 22)

9 (June 3-7)	Ch. 26 (fluid/ solute balance)	Ch. 23 (digestion)	Lab 8: Urinalysis (Ch. 25)	Exam 4 (Ch. 20- 22, 25)	Lab 8: Urinalysis (Ch. 25)
10 (June 10-14)	Ch. 24 (metabolism)	Ch. 27 (reproduction)	Lab 9: Digestion (Ch. 23)	Ch. 28 (pregnancy)	Lab 9: Digestion (Ch. 23)
11 (June 17-21)	No class (finals week)	Final exam (Ch. 23-24, 26-28)			

(8) Support for Students: Equity and Accessibility*

Everett Community College through its Vision, Mission, and Strategic Plan, has made an institutional commitment to establish a diverse, equitable and inclusive working and learning environment. My goal is to create a classroom environment in which everyone can participate and learn. Because of the diversity of backgrounds, experiences, and beliefs all of us bring to this class, I expect you to interact with your peers in a spirit of generosity, mutual respect, and understanding.

If there are aspects of this course that prevent you from learning or that exclude you, please speak with me as soon as possible. Together we can develop strategies to meet both your needs and the requirements of this course. I am happy to talk privately after class or during my office hours.

You also have the right to request accommodation for a verified disability. For information and assistance, contact the Center for Disability Services (located in Parks 267, 425-388-9272, or cds@everettcc.edu) for help documenting specific needs you may have and determining appropriate accommodations.

We understand that for our campus to be welcoming and safe, it must be free from all forms of discrimination. Everett Community College does not discriminate based on, but not limited to, race, religion, creed, color, national origin, age, sex, sexual orientation, gender identity or expression, pregnancy or parental status, marital status, disability, genetic information, or status as a veteran of war. If you believe that you have been subjected to discrimination or harassment based upon any of these, you should let me know or contact the college's Title IX Coordinator at TitleIXCoordinator@everettcc.edu or 425-388-9271.

Additional student support information:

- *Canvas*. Assistance with the Canvas learning management system including logging in and course access. Whitehorse 210 – 425-388-9027 or 1-866-575-9027. Canvas Help Desks are also in the library, outside the Tutoring Center and the Whitehorse lobby.
- *Counseling and Student Success*. Assistance with career counseling, academic/educational counseling, advising, and referral to community mental health resources. Parks 3rd Floor – 425-388-9263.
- *Library*. Information and services to support research and learning including books, media materials, and databases. Librarians assist students in locating information and developing research skills. Parks 1st floor – 425-388-9353 (checkout) and 425-388-9354 (reference assistance).
- *Tutoring Center*. Free academic/tutorial support with course material, study skills, time management, and preparation for exams. Rainier 119 and Baker 112 – 425-388-9356.
- *Writing Center*. Peer writing assistants offer feedback, ideas, and methods for editing and polishing work. Gray Wolf 150 – 425-388-9406.

- *Additional Support Services.* Visit the Everett Community College Student Services website (everettcc.edu/students).

(9) General Information about EvCC Policies and Procedures*

As outlined in the campus civility statement (everettcc.edu/files/administration/policies/evcc1010-civility-statement.pdf), Everett Community College is committed to providing a safe learning and working environment. The expectation is that all students will conduct themselves in a civil, respectable and appropriate manner as a responsible member of the college community. The Student Rights and Responsibilities Handbook (everettcc.edu/files/students/student-activities/student-rights-responsibilities-and-policies.pdf) identifies and describes college expectations, students' rights, and outlines the process for resolving disciplinary matters, including Student Code of Conduct violations. The provisions of the Student Code of Conduct apply to all students whenever they are on the college campus, in college housing, or engaged in college-sponsored activities and functions.

(9.1) Emergency Preparedness and Campus Closures*

In the event of an emergency situation adversely affecting college operations, public health, or the well-being and safety of students or employees, the college president may declare a temporary closure of any or all units of the institution. If the event of a closure, information will be posted on the opening screen of the EvCC website, emailed to students and employees at their college email address, and will also be available as a message on the college's main phone line at 425-388-9100. Students may sign up to receive an emergency alert as a text message or by personal email through the Rave system (getrave.com/login/everettcc). Faculty will communicate with students about adjustments in course content or requirements, including assignment deadlines that may be impacted by a closure.

(9.2) Academic Calendar*

Registration and payment dates, application and refund deadlines, the final examination schedule, and all other information related to the academic year and each individual quarter is available on the college website (everettcc.edu/enrollment/registration/important-dates-calendar).

The image shows two lines of musical notation in 4/4 time. The first line starts with a treble clef and a key signature of one flat (Bb). The melody is written on a single staff. Above the staff, chords are indicated: F, Gm, F, and Dm. The lyrics are: "Al - dos-ter-one and cor-ti-sol (A C, A C, A C!) _ are what the A C's pu-shing. _". The second line starts with a measure rest labeled "5". The melody continues on the same staff. Above the staff, chords are indicated: F and Gm. The lyrics are: "(A C, A C, A C!) _ They're awf - ly low or cra - zy high".