



CAMOSUN COLLEGE
School of Arts & Science
Department of Biology

BIOL-151-D02A/B
Human Physiology
Winter 2021

COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/biol.html>

Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

| | |
|------------------|--|
| (a) Instructor | Jennifer Giuliani |
| (b) Office hours | Drop-in: Wednesdays 9:00-11:00am and Thursdays 1:00-3:00pm (*plus other times possible, by appointment) |
| (c) Location | Online in the "Office Hours" room in Collaborate, accessed through our D2L course |
| (d) Phone | 250-370-3445* Alternative: n/a |
| (e) E-mail | GiulianiJ@camosun.bc.ca |
| (f) Website | online.camosun.ca to login to D2L |

*Note: Since I am working remotely this semester, email is generally the best way to contact me.

2. Intended Learning Outcomes

Upon completion of this course the student will be able to:

1. Describe the concept of homeostasis and explain how it operates in the major physiological systems of the human body.
2. Demonstrate an understanding of the functioning of the major physiological systems of the human body at the cellular and systemic levels.
3. Explain how the major physiological systems of the body interact to bring about biological behaviors.
4. Understand how physiological processes are altered in injury or disease.
5. Apply anatomical vocabulary in a physiological context.
6. Perform laboratory procedures relevant to physiology (observe physiological phenomena, measure physiological data, organize / record / analyze results of physiological experiments).
7. Utilize critical thinking to apply physiological concepts to specific problem solving situations.

3. Required Materials

(a) Texts

One of the following, either:

Fundamentals of Anatomy and Physiology, 11th edition, by Martini, Nath & Bartholomew.

*note: this might be the same text that you used for Biol 150 Human Anatomy last semester!

or:

Human Physiology: From Cells to Systems, 4th edition, by Sherwood.

*You do not need to purchase this text if you already have a copy of the A&P text listed above!

(b) Other

A Biol 151 Lab Manual will be posted on D2L, with new labs added throughout the semester.

4. Course Content and Schedule

This course includes 3h lecture and 3h lab each week. Most of the lecture work will be covered asynchronously (outside of the scheduled class meeting time); most of the lab work will be covered synchronously (during the scheduled class meeting time). Specific lecture and lab topics will be covered each week – please refer to the detailed schedule on the last pages of this course outline. Detailed week-by-week information will also be posted on D2L.

Scheduled class meeting times (synchronous work):

Section D02A: Mondays, 9:30am – 12:20pm

Section D02B: Mondays, 1:30pm – 4:20pm

A detailed, weekly course schedule can be found on the last pages of this course outline.

5. Basis of Student Assessment (Weighting)

| | | |
|-------------------------------|----------------------------------|-----|
| Weekly Assignments | (approx. 11 assns) | 17% |
| Scientific literature project | (due mid-March) | 3% |
| Lab Exam #1 | (Friday, Feb. 26 th) | 10% |
| Final Lab Exam | (Friday, Apr. 16 th) | 15% |
| Lecture Midterm #1 | (Friday, Feb. 12 th) | 15% |
| Lecture Midterm #2 | (Friday, Mar. 19 th) | 15% |
| Lecture Final Exam | (date TBA) | 25% |

6. Grading System

Standard Grading System (GPA)

Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at <http://camosun.ca/services/writing-centre/learning-skills.html>

General Information for Students

As mentioned in section 4 above, this course will include a mix of synchronous work (which takes place during scheduled class meeting times) and asynchronous work (which will be completed on your own schedule each week). Note, though, that this is not a self-paced course. There will still be specific topics to cover and assignments to complete each week throughout the semester. A list of topics can be found on the last pages of this course outline, and on D2L.

During the scheduled class meeting times we will do a variety of activities, including some small group discussions. These small group discussions will take place in breakout rooms within the Collaborate program, accessed through our D2L course. You (and your groupmates) will get the most benefit from these discussions if you arrive prepared by keeping up with the course work (synchronous and asynchronous work).

Attendance, Exams, and Submission of Assignments

It is expected that you will attend all of your scheduled class meetings. You have 3h per week scheduled for synchronous work for this course. Please ensure that you keep these 3h available – avoid creating schedule conflicts!

If you do miss a class, it is your responsibility to find out what you missed that day and get caught up. Participation in the small group discussions (during our synchronous class meeting times) will be important for effectively completing your weekly assignments and enhancing your overall understanding of the course material. If you are unable to attend a class, please contact your instructor as soon as possible to discuss possible alternate arrangements.

Exams must be written at their scheduled time. Please refer to the detailed course schedule for the dates and times of these exams. This course will have a total of five exams. Four of them have been scheduled to take place during the semester. These include the two lecture midterms, lab exam #1, and the final lab exam. These in-semester exams will all be scheduled for Fridays. There will be a range of possible times that you can write your exam on the scheduled exam day; once you begin your exam, there will be a time limit for you to complete your exam. For example, lecture midterm #1 is scheduled for Friday, February 12th. The exam will be available between 8:30am and 5:00pm that day, but once you start your exam you will have 1.5h to complete it. So, if you start your exam at 8:45am, you will have until 10:15am to complete it, and if you start your exam at 2:30pm, you will have until 4:00pm to complete it. *If these exam dates/times conflict with other parts of your schedule, please contact your instructor as soon as possible so that we can make alternate arrangements, if needed.

There will also be one final lecture exam which will be scheduled by the college registrar and written at the specified time during the final exam period. The final exam schedule is usually announced by the college in mid-February, and will be posted on Camlink.

**If you are unable to write a scheduled exam due to extreme, extenuating circumstances, you must contact your instructor as soon as possible, prior to the exam. Appropriate documentation will be required for alternate arrangements to be made.

All course assignments will have a specified due date. Be sure to submit all assignments on time to avoid deductions. A 10% deduction per day late will be applied to any assignments that are submitted after the due date/time. Submitting assignments on time will help you to keep up with the course material and

receive timely feedback that will help you with other course assignments and exams. If you are having troubles completing an assignment on time, please contact your instructor. Weekly assignments will generally be due on Wednesday evenings, and will be based on that week's lab topic plus lecture topics from the previous week's work (which will generally relate to the lab topic as well). Detailed information about each assignment will be posted on D2L.

Even though we will be engaging in weekly group discussions, your course assignments will be individual work. When submitting your own, individual assignment, be sure that it is your work and yours alone. This applies even if you are working with a study group! I do encourage you to study and work with other students (virtually), but the work that you submit must still be your own. Academic integrity matters.

These course expectations will be discussed during the first week of classes and additional information may also be posted on D2L. If you have any further questions, please contact your instructor.

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts

@ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence, Student Ancillary Fees, Academic Integrity, Grade Review & Appeals, Student Misconduct and Academic Accommodations for Students with Disabilities and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|--------------------------------------|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

| Grade | Description |
|-------|---|
| COM | The student has met the goals, criteria, or competencies established for this course, practicum or field placement. |
| DST | The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement. |
| NC | The student has not met the goals, criteria or competencies established for this course, practicum or field placement. |

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

| Temporary Grade | Description |
|-----------------|--|
| I | <i>Incomplete</i> : A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| IP | <i>In progress</i> : A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course. |
| CW | <i>Compulsory Withdrawal</i> : A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

Detailed Course Schedule: Biol 151 Winter 2021

The following schedule is the planned schedule of lecture and lab topics. Changes will be posted on D2L, if needed. More detailed information, including a weekly checklist, can be found on D2L.

Note that most weeks we will cover the lab topics during our scheduled class meeting time (synchronous work), with some review of the previous week's lecture topics. (Lecture topics will generally be covered asynchronously, using a variety of methods.) Exceptions to this general pattern will be described in detail on D2L.

| Week/ Dates | Lab Topics | Lecture Topics | Assignment (due Wed.) or Exam (Fridays)? |
|-------------------------------|---|---|---|
| Week 1 Jan. 11 - 15 | Introduction | Homeostasis - Positive and negative feedback Membranes & transport - Review of organelles - Membrane structure - Types of membrane transport (incl. osmosis) | Assn #1: feedback and feedback! (a short assn.) |
| Week 2 Jan. 18 – 22 | Lab 1: Movement of molecules | Neural physiology - Membrane potential - Action potential in neurons - Synapses | Assn #2: Membranes & transport (incl. Lab 1) |
| Week 3 Jan. 25 – 29 | Lab 2: Nervous system | Neural physiology (cont'd) - Synapses (cont'd) - EPSPs, IPSPs, circuits Senses - Sensory transduction - Physiology of general senses - Physiology of special senses | Assn #3: Nervous system (incl. Lab 2) |
| Week 4 Feb. 1 – 5 | Lab 3: Senses | Cardiovascular physiology: heart - Electrical activities in the heart - Cardiac cycle and control | Assn #4: Senses (incl. Lab 3) |
| Week 5 Feb. 8 – 12 | Lab 4: Cardiovascular system | Cardiovascular physiology: blood vessels - Blood flow, blood pressure, capillary exchange - Regulation of blood pressure | Lecture Midterm #1: Friday, Feb. 12 th |
| Week 6 Feb. 15 – 19 | Reading Break! No classes this week. (Assn #5 can be submitted earlier, if you like.) Monday, February 15 th : College Closed (Family Day) | | Assn #5: Cardiovascular physiology (incl. Lab 4) |
| Week 7 Feb. 22 – 26 | Lab 5: Dive reflex (and review) | Respiratory physiology - Ventilation and lung volumes - Gas laws and diffusion - Transport of gasses - Regulation of respiratory functions | Lab Exam #1 (Labs 1-4): Friday, February 26 th |
| Week 8 Mar. 1 – 5 | Lab 6: Respiratory system | Renal physiology (part 1): - Nephron function (filtration, reabsorption, secretion) - Micturition - Regulation of renal function | Assn #6: Respiratory physiology (incl. Lab 6) |

| | | | |
|--|--|--|--|
| Week 9 Mar. 8 – 12 | Lab 7: Urinary system | Renal physiology (part 2): - Fluid, pH, and electrolyte balance Digestion - Chemical digestion (enzymes) - Absorption of nutrients - Control of digestion | Assn #7: Renal physiology (incl. Lab 7) Approx. due date for Scientific Literature Project (specific details TBA) |
| Week 10 Mar. 15 – 19 | Lab 8: Digestion | Metabolism - Glucose metabolism (aerobic and anaerobic) - Carbohydrate, protein, and lipid metabolism - Absorptive and post-absorptive states and hormonal regulation Muscle physiology - Excitation-contraction coupling - Cell and whole muscle physiology | Lecture Midterm #2: Friday, March 19 th |
| Week 11 Mar. 22 – 26 | Lab 9: Muscle physiology | Immunology - Non-specific and specific defenses - Response to exposure to antigen - Topics in immunology | Assn #8: Digestion (incl. Lab 8) AND Muscle phys. (incl. Lab 9) |
| Week 12 Mar. 29 – Apr. 2 | Lab 10: Immunology | Hematology - Hemopoiesis and the erythrocyte cycle - Hemostasis | Assn #9: Immunology (incl. Lab 10) |
| Friday, April 2 nd : College Closed (Good Friday) | | | |
| Monday, April 5 th : College Closed (Easter Monday) | | | |
| Week 13 Apr. 5 – 9 | Lab 11: Endocrine and blood | Endocrine physiology - Mechanisms of hormone transport and action - Regulation of hormonal secretion Reproduction (part 1): - Spermatogenesis - Oogenesis | Assn #10: Endocrine phys. and hematology (incl. Lab 11) |
| Week 14 Apr. 12 – 16 | Review! | Reproduction (part 2): - Cyclical changes in female reproductive system - Regulation of reproduction - Pregnancy, development, parturition, and lactation | Final Lab Exam (all labs): Friday, April 16 th Assn #11: Reproduction (due date TBA) |
| Final exams: Apr. 19 – 27 | Final Lecture Exam: date and time to be scheduled by the college registrar (Final exam schedule to be posted mid-February) | | |