

COURSE OUTLINE

BME 201–Quantitative Human Physiology

Term – SUMMER 2020 (202005)

Instructor

Dr. Carmen Sima
Phone: TBD
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Office Hours

Days: Thursday
Time: 17:00 - 18:00
Platform: Blackboard Collaborate

Course Objectives

Physiology is the science of the function of living systems. This course discusses anatomical, physiological, and pathophysiological features of the main systems of the human body. In addition, it provides information on the function of these systems from both medical and engineering perspectives.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Describe the structure (anatomy) of the major human organs and systems
2. Understand the function (physiology) of the major human organs and systems
3. Identify the interactions between different human organs and systems
4. Interpret the relationship between various physiological measures
5. Discuss the significance of the measured physiological parameters
6. Analyze different physiological control mechanisms
7. Discuss various mathematical models of physiological processes
8. Apply engineering principles to the medical field

Syllabus

Organization of the nervous system; Cardiovascular function and blood composition; Regulation of blood flow and arterial pressure; Mechanics of breathing; Gas exchange in the lungs; Control of ventilation; Body fluid compartments and functional anatomy of the urinary system; Acid-base balance; Overview of the endocrine system.

A-Section(s): A01 / CRN 30055

Days: Tuesday and Thursday

Time: 6:30pm – 7:50pm

Platform: Blackboard Collaborate

Dates: May 4 – July31, 2020

B-Section(s): B01 / CRN: 30056

Days: Monday

Time: 4:00pm – 6:50pm

Location: Online

Dates: May 25, Jun 8, Jun 22, Jul 13, 2020

B-Section(s): B03 / CRN: 30057
Days: Wednesday
Time: 12:30pm – 3:20pm
Location: Online

Dates: May 27, Jun 10, Jun 24, Jul 15, 2020

B-Section(s): B05 / CRN: 30058
Days: Wednesday
Time: 3:30pm – 6:20pm
Location: Online

Dates: May 27, Jun 10, Jun 24, Jul 15, 2020

B-Section(s): B07 / CRN: 30059
Days: Tuesday
Time: 12:30pm – 3:20pm
Location: Online

Dates: May 26, Jun 9, Jun 23, Jul 14, 2020

T-Section(s): T01 / CRN: 30060
Days: Monday
Time: 3:00p.m.-3:50p.m.
Platform: Blackboard Collaborate

Dates: May 4 – July 31, 2020

Required Text

Title: **Quantitative human physiology: An introduction (2nd Ed)**

Author: **Joseph Feher**

Publisher: Academic Press

Year: 2016

Other References:

Title: Medical Physiology

Author: Guyton, AC and Hall, JE

Publisher: Elsevier Saunders

Year: 2006

Title: Principles of Anatomy & Physiology (15th Ed)

Author: Tortora, GJ and Derrickson, B

Publisher: Wiley

Year: 2017

Online Course Delivery:

As this course will be conducted online during this term, students will need to complete assignments/labs online. The students will require access to a computer which has the following software installed: Google Chrome, which can be downloaded from <https://www.google.com/chrome/>.

Assessment:

Assignment (Review Paper)	20 %	Due Date: July 10, 2020 (11:59 pm)
Labs	20 %	TBD
Four Midterms (12% each)	48 %	Date: May 26, June 16, July 7, July 28, 2020
Student Presentation	6 %	Date: July 23, July 30, 2020
Group work	6 %	Date: July 23, July 30, 2020

There will be no Final Exam

Important: All deadlines and schedules for this course will reference Pacific Daylight Time.

Note: Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.
Failure to pass the final exam will result in a failing grade for the course.

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Graduate Calendar.

<https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/B13jeiMdE?bc=true&bcCurrent=07%20-%20Grading&bclItem=policies>

Note to Students:

Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

Course Withdrawal Deadlines:

- May 16, 2020: Withdrawal with 100% reduction of tuition fees
- June 6, 2020: Withdrawal with 50% reduction of tuition fees
- July 1, 2020: Last day for withdrawal (no fees returned)

Accommodation of Religious Observance:

<https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/SkmigiMOV?bc=true&bcCurrent=17%20-%20Accommodation%20of%20Religious%20Observance&bclItem=policies>

Policy on Inclusivity and Diversity:

Engineering: <https://www.uvic.ca/engineering/about/equity/index.php>

Academic Calendar: <https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/HkQ0pzdAN>

Standards of Professional Behaviour:

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

<http://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf>

Academic Integrity:

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Graduate Calendar for the UVic policy on academic integrity.

https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/BJuesM_E?bc=true&bcCurrent=02%20-%20Policy%20on%20Academic%20Integrity&bclItem=policies

Equality:

This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Centre for Accessible Learning located in the Campus Services Building: <https://www.uvic.ca/services/cal/>. The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

Course Lecture Notes:

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Sexualized Violence Prevention and Response at Uvic:

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support, please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR; Sedgewick C119

Phone: 250.721.8021

Email: svpcoordinator@uvic.ca

Web: www.uvic.ca/svp

Office of the Ombudsperson:

The [Office of the Ombudsperson](https://uvicombudsperson.ca/) is an independent and impartial resource to assist with the fair resolution of student issues. A confidential consultation can help you understand your rights and responsibilities. The Ombudsperson can also clarify information, help navigate procedures, assist with problem-solving, facilitate communication, provide feedback on an appeal, investigate and make recommendations. Phone: 250-721-8357; Email: ombuddy@uvic.ca; Web: <https://uvicombudsperson.ca/>