



Land Acknowledgement

We respectfully acknowledge the Syilx Okanagan Nation and their peoples, in whose traditional, ancestral, unceded territory UBC Okanagan is situated.

HES 101: Human Physiology I

Faculty: Faculty of Health and Social Development

Department: Health and Exercise Sciences

Instructor(s): Dr Gina Whitaker

Duration: Term 1 Winter 2024

Delivery Modality: In-Person

Course Location: ASC 140

Course Days: Mon/Wed

Class Hours: 6:30pm – 7:50pm

Office hours: Weekly office hours will be held in ART 159 (Dr Whitaker's office). Time will be posted on canvas at the beginning of the semester. Students can also make an appointment to meet with me in person in my office, or on zoom if needed.

Course Description

Human physiology from the cellular to the systemic level including cellular function, metabolism, the skeletal system, neuromuscular system, and nervous system.

Course Format

We will meet together for class twice per week on Mondays and Wednesdays 6:30pm-7:50pm in ASC 140. These sessions will also be recorded and posted on canvas after class. Weekly labs (9 in total) will begin in week 3 in UCH 010. **Please note that lab attendance is mandatory and you must attend the lab day and time that you registered for.**

Course Overview, Content and Objectives

This course is the first of a two-semester series which will introduce the student to foundational concepts in human anatomy and physiology, with an emphasis on integration and regulation of homeostasis. HES 101 topics include: Cell and molecular biology; Microscopic functional anatomy of bones and muscles; Function and integration of the skeletal, muscular and nervous systems. In

keeping with competency-based learning, concepts will be consistently applied to exercise and the field of health.

The content presented in this course is based on the following objectives:

1. Develop foundational knowledge of the anatomical and functional characteristics of cells, organs and organ systems relevant to human function and movement.
2. Understand the link between structure and function, and the application to integration and regulation of physiological function
3. Apply foundational knowledge of human anatomy and physiology to movement, exercise and the field of health

Learning Outcomes

Upon successful completion of this course, students will be able to...

1. Explain foundational concepts in human physiology relating to: Homeostasis; Molecular and Cellular Biology; Energy Metabolism
2. Outline the organization and integration of cells to tissues to organs and organ systems
3. Identify and explain the structural and basic functional anatomy of the skeletal, muscular and nervous systems
4. Explain the basic function, regulation and integration of the skeletal, muscular and nervous systems

Assessments of Learning

Weekly Review Quizzes	10%
Lab activities	30%
Midterm 1 – Oct 7 th	10%
Midterm 2 – Nov 6 th	15%
Class participation (i-clickers)	5%
Final Exam (cumulative)	30%
<i>Total</i>	<i>100%</i>

Learning Activities

Weekly learning content, readings and activities will be posted by the Friday before in canvas modules

- In-class active learning and participation will be facilitated using iclickers (information on how to download the iclicker app will be posted on canvas. This app is free for UBC students).
- Weekly review quizzes (open book) will be taken on canvas and based on the previous week's class.
- Pre-Lab quizzes will be due prior coming to labs and will be based on that week's lab content. Lab activities will be completed during lab using LT software (online software can be accessed in lab and from home).
- Midterms (closed book) will be taken in person during class time on the posted dates. Midterm 2 is non-cumulative (only tested on material covered in class in week 6-9).
- Final exam (closed book) **will be cumulative** (based on all course material covered over the semester) and will be taken in person during exam period (date and time is TBA).

Course Schedule & Required Readings

Please note: this schedule is subject to change and exact detailed content will be posted in the weekly modules on canvas. Midterm exam dates are final (not subject to change).

	Topics, labs & exams	Required Readings
Week 1 Sept 3 - 6	No classes Monday (Labour Day) Intro to the course Core Principles in Anatomy & Physiology	Ch 1
Week 2 Sept 9 - 13	Molecular and Cellular Physiology Overview	Ch 2 Ch 3
Week 3 Sept 16 - 20	Histology: Introduction to Tissues, Tissue types, Membranes Lab 1 – Intro to lab	Ch 4
Week 4 Sept 23 - 27	Bone Physiology Lab 2 – Tissue types – structure/function	Ch 6
Week 5 Sept 30 – Oct 4	No classes Monday (National TRC day) Midterm 1 Review (Oct 4) Lab 3 – Bone Physiology	
Week 6 Oct 7 - 11	Midterm 1 Oct 7 (based on week 1-4) Nervous System I Neuromuscular Physiology I No labs	Ch 11 Ch 10
Week 7 Oct 14 - 18	No classes Monday (Thanksgiving) Neuromuscular Physiology II Lab 4 – Muscle EMG I	Ch 10
Week 8 Oct 21 - 25	Neuromuscular Physiology III Lab 5 – Muscle EMG II	Ch 10
Week 9 Oct 28 – Nov 1	Neuromuscular Physiology IV Lab 6 – Muscle Twitch & Tetanus	Ch 10
Week 10 Nov 4 - 8	Midterm 2 Review Midterm 2 Nov 6 (based on week 6 – 9)	
Week 11 Nov 11 – 15	MIDTERM BREAK	
Week 12 Nov 18 – 22	Nervous System II – CNS & PNS Lab 7 – CNS & Cranial Nerve – Functional Anatomy	Ch 12-13
Week 13 Nov 25 – 29	Nervous System III – ANS Lab 8 – Spinal Reflexes & Reaction Times	Ch 14
Week 14 Dec 2 – 6	Nervous System IV – Special Senses Semester Review (Dec 4 th) Lab 9 – Special Senses Activities	Ch 15
Dec 9- 20	Final Exam period (HES 101 final exam date is TBA. Exam schedule for UBCO is usually published later in October). Please ensure that you are in town for the entire exam schedule and do not make any travel plans for any sooner until you get your final exam schedule. Final exams will not be re-scheduled to accommodate early departure.	

Missed Lab Policy:

Lab attendance is mandatory. There are certain extenuating circumstances that will allow for a missed lab. These are for example: acute illness, emergency, travel for team sports. Please note that we will not make accommodations for work schedule or other extracurricular activities. Please reach out to your TA BEFORE YOUR LAB TIME to let them know that you are missing a lab and why. They will determine whether your absence is excused and will consult with Dr Whitaker if needed. If you miss more than 1 lab, you will be put in contact with Dr Whitaker to set up a meeting to discuss a plan for making up these labs. You are not permitted to miss more than 2 labs in total over the semester.

Both the lowest weekly review quiz and lowest lab activity mark will be dropped at the end of semester in order to accommodate for life circumstances that might cause you to miss one. For example, if you forget to submit a quiz one week, this will be dropped (not counted toward your final grade). If you do not miss any, then your lowest mark will be dropped.

Late policy

You must submit lab activities and lab quizzes by the posted due date. There are certain extenuating circumstances that will allow of extension of a lab quiz or lab activity. These are: illness, family emergency. Please reach out to your TA prior to the upcoming lab activity or quiz due date and the TA will work with Dr Whitaker to determine eligibility for extension on a case-by-case basis. Please note that the instructor will not make accommodations for work schedule or other extracurricular activities. These should be organized into your schedule such that you make time to complete your course requirements on time.

There will be NO extensions or omissions provided for weekly online review quizzes. The lowest quiz mark will be dropped at the end of term. This can account for an accidental miss and if you don't miss any, the lowest mark of all your completed quizzes will be dropped.

Missed exam policy

If you need to miss a midterm for an extenuating circumstance (acute illness or emergency), you must submit a self-declaration form PRIOR TO THE MIDTERM START, to the School of Health & Exercise Sciences and once approved, together you and your instructor will schedule an alternate exam. Please see the HES student policies (posted on HES 101 canvas course front page) for more detail and link to the self-declaration form. You can also find the self-declaration form linked on the MyHES canvas course (forms & policies).

If you need to miss the final exam for an extenuating circumstance (acute illness or emergency), you must apply for an out-of-time exam through the department, and provide valid documentation of the reason for the missed final exam. Please see our HES student policies for valid extenuating circumstances.

Passing/Grading Criteria

As per the HES Policies, **you must pass both the lab and lecture components** of a course to receive a passing grade in that course. If you happen to fail one of these components, even if your total grade is above 50%, then your final grade will be 49%.

Learning Materials

You will require the following learning materials for this course. Please note, we will also be using these same resources in the following semester in HES 111 (you will not need to purchase these again)

- Course textbook package: Amerman, EC (2025) Human Anatomy & Physiology 3rd Edition with Mastering A&P. This is to be purchased through the UBC Okanagan bookstore and can be purchased as an e-text package. Once you purchase this, you have the option to also buy a hard copy (unbound) of the textbook. Instructions on how to do this will be found in our Canvas course.
- Lab Software: LT lab software. (to be purchased through the UBC-Okanagan bookstore). You will purchase a 6-month pass. **PLEASE DO NOT ACTIVATE THIS UNTIL OCTOBER!! Dr Whitaker will instruct the class when it is time to activate this.** The 6-month pass must remain active until the end of March (we will use it in HES 111). If you activate this too soon, you will need to purchase another pass in term 2 for HES 111.
- UBC Canvas will be used as the online learning management system for this course. Weekly learning, class notes, grades and course communication will be posted here. Dr Whitaker will use the announcements to communicate weekly with the class.

Other Course Policies

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. **For example, incidences of plagiarism or cheating usually result in a failing grade or mark of zero on the assignment or in the course.** Careful records are kept to monitor and prevent recidivism.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at:

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,54,111,0>

Final Examinations

You can find the [Senate-approved term and examination dates here](#). Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 27-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on Academic Concession can be found under Policies and Regulation in the Okanagan Academic Calendar <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>

Grading Practices

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>

Student Services Resources:

UBC Okanagan Disability Resource Centre

The DRC facilitates disability-related accommodations and programming initiatives to remove barriers for students with disabilities and ongoing medical conditions. If you require academic accommodations to achieve the objectives of a course please contact the DRC at:

UNC 215 250.807.8053

email: drc.questions@ubc.ca

Web: www.students.ok.ubc.ca/drc

UBC Okanagan Equity and Inclusion Office

Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's Human Rights Code. If you require assistance related to an issue of equity, educational programs, discrimination or harassment please contact the EIO.

UNC 325H 250.807.9291

email: equity.ubco@ubc.ca

Web: www.equity.ok.ubc.ca

Student Wellness

At UBC Okanagan health services to students are provided by Student Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Student Wellness for more information or to book an appointment.

UNC 337 250.807.9270

email: healthwellness.okanagan@ubc.ca

Web: www.students.ok.ubc.ca/health-wellness

Student Learning Hub

The Student Learning Hub is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. Students are encouraged to visit often and early to build the skills,

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strategies and behaviors that are essential to being a confident and independent learner. For more information, please visit the Hub's website.

LIB 237 250.807.8491

email: learning.hub@ubc.ca

Web: www.students.ok.ubc.ca/slh

Safewalk

*Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at **250-807-8076**.*

For more information, see: www.security.ok.ubc.ca