



**School of Arts & Science
BIOLOGY DEPARTMENT**

BIOL 142A-section
Physiology Lab for Sport
Semester/Year, eg, 2007F or 2007Q1

CALENDAR DESCRIPTION

This course provides an overview of functional relationships within the human body. Physiological processes are studied at both the cellular and organ system level, with an emphasis on homeostasis as it relates to exercise, health and disease. This course is designed for students in Exercise and Wellness, Sport Management and Athlete and Coach Development Diploma programs.

PREREQUISITES

Grade of C+ or better in English 12, Grade 11 level science, Math 11, Biology 141 and 141A

COREQUISITE

Biology 142A (Physiology labs)

1. Instructor Information

Instructor: Peggy Hunter
Office hrs: Mondays and Wednesdays 2:30–4:00
Location: TBA
Phone: 370-3427
E-mail: hunterp@camosun.bc.ca
Web site: <http://hunterp.disted.camosun.bc.ca>

2. Required Materials

Text: *Essentials of Anatomy and Physiology (3rd edition)*, Martini, F. and Bartholomew, E. (2007).

3. Course Particulars

Class hours: 3 hrs lecture/week

Out of class: 6 hrs/week minimum

Credits: 3 credits

4. Intended Learning Outcomes

- Describe the concept of homeostasis and explain how it operates in the major physiological systems of the human body.
- Demonstrate an understanding of the functioning of the major physiological systems of the human body at the cellular and systemic levels.
- Explain the interactions between the major physiological systems of the body particularly as these interactions pertain to exercise and health
- Understand how physiological processes are altered in injury or disease.
- Correctly apply anatomical vocabulary in a physiological context.
- Utilize critical thinking to apply physiological concepts to specific problem solving situations

5. Basis of Student Assessment

Quizzes and assignments	20%
Lecture midterm 1	25%
Lecture midterm 2	25%
Final	<u>30%</u>
	<u>100%</u>

6. Grading System

The following percentage conversions to letter grades will be used for this course:

A+	= 90 - 100%	B	= 73 - 76%	D	= 50 - 59%
A	= 85 - 89%	B-	= 70 - 72%	F	= 0 - 49%
A-	= 80 - 84%	C+	= 65 - 69%		
B+	= 77 - 79%	C	= 60 - 64%		

7. Learning support and services for students

Learning Skills offers assistance to learners in a variety of ways.

<http://www.camosun.bc.ca/learning-skills/>

7. Student Responsibilities

1. *Students are expected to hand in any required assignments on time. Assignments are due at the **beginning** of the class period on the due date. Assignments not handed in at the beginning of class will be considered late, for which there is a 10% penalty/day.*
2. *Attendance correlates highly with academic success. If unable to attend a lecture or lab session, the student is responsible for arranging with a classmate to obtain information such as notes, handouts and announcements.*
3. *Examinations must be written as scheduled except in the case of illness or emergency. The student must notify the instructor **in advance** of the examination. Documentation acceptable to your instructor is required to schedule a make-up exam. **Vacation or travel plans do not constitute an emergency and exams will not be rescheduled***
4. *Any evaluation of work for in-class/lab assignments, reports and/or participation will not be given if a student is not present for any reason.*
5. *Quizzes will be written at the beginning of class; if you are late for class you will not be allowed to write the quiz*
6. *Students are expected to work independently on assignments unless instructed that the evaluation is based on group effort. Please see **ACADEMIC MISCONDUCT**.*

There is an **Academic Conduct Policy**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section, and in the **Camosun calendar p 36-38**

7. Concerning spelling

Mastering the usage of anatomical and physiological terminology will be important to you for several reasons. Correct usage (pronunciation and spelling) will

- foster self confidence
- help to earn the respect of your professional colleagues
- reduce the chances of practical mistakes which may cause harm or embarrassment. Consider the difference between the terms **peroneal** and **perineal** or **ileum** and **ilium**

You will be expected to use acceptable pronunciation and correct spelling for presentations, assignments and exams. **Penalties for spelling errors will be applied.** If writing is illegible, no marks will be given.

COURSE SCHEDULE - WINTER 2008

The following schedule is a **tentative** outline of lectures and laboratories. It is subject to change as the need arises. Changes will be announced in class.

WEEK/DATE	LECTURE TOPIC		LAB
1. Jan 7–11	Intro to Cellular physiology <ul style="list-style-type: none"> • homeostasis • cell membranes • transport mechanisms • enzymes 	Ch 1 p7 Ch 2 p28-55 Ch 3 p56-87	Lab 1: Intro to Laboratory Science
2. Jan 14–18	Digestive Physiology <ul style="list-style-type: none"> • chemical digestion - enzymes • absorption - chemicals, routes, locations • neural and hormonal controls • gastrointestinal function during exercise 	Ch 16 540-550	Lab 2: Intro to Chemical Concepts
3. Jan 21–25	Metabolism <ul style="list-style-type: none"> • carbohydrate metabolism • lipid and protein metabolism • interconversion of molecules • energy transfer in exercise • absorptive and postabsorptive states, hormonal control Endocrine Physiology	Ch 17 p552-517 Ch 10 p330-336	Lab 3: Digestion of Organic Molecules
4. Jan 28–Feb 1	Neural Physiology <ul style="list-style-type: none"> • membrane potentials • synapse and neurotransmitters neural integration • reflex pathways 	Ch 8 p243-252	Lab 4: Cellular Respiration and Glucose Monitoring
5. Feb 4 –8	MIDTERM 1 Sensory Perception <ul style="list-style-type: none"> • general senses • theories of smell, taste, vision and hearing 	Ch 9 p298-301 p309-314 p315-329	Lab 5: Reflexes and cranial nerve tests
6. Feb 11-13 Feb 14–15	READING BREAK Sensory Reception (cont'd)		NO LAB
7. Feb 18–22	Muscle Physiology <ul style="list-style-type: none"> • neuromuscular junction • sliding filament contraction theory • gross muscle physiology 	Ch7 p184-203	Lab 6: Sensory perception
8. Feb 25–Feb 29	Cardiovascular Physiology <ul style="list-style-type: none"> • ECG (action potentials) • cardiac cycle and controls 	Ch12 p398-411	Lab 7: Muscle Physiology

9. Mar 3–7	Cardiovascular Physiology continued • blood flow / blood pressure capillary exchange	Ch 13 p418-429	Lab 8: Cardiovascular Physiology
10. Mar 10–14	Hematology • erythrocyte cycle • hemostasis Immunology • specific vs non-specific defense	Ch11 p364-387 Ch 14 p452-480	Lab 9: Hematology and Immunology
11. Mar 17–20	MIDTERM 2 Respiratory Physiology • ventilation • lung volume and capacities • gas laws and diffusion • blood flow/gradients (O ₂ /CO ₂)	Ch 15 492-513	Lab 10: Respiratory Physiology
12. Mar 24 Mar 25– 27	EASTER HOLIDAY Respiratory Physiology (cont'd)		NO LAB
13. Mar 31-Apr 4	Renal Physiology • filtration/reabsorption /secretion • fluid/electrolyte balance • acid/base balance	Ch 18 p578-611	Lab 11: Urinalysis
14. Apr 7-11	Renal Physiology (cont'd) Reproductive Physiology • hormonal regulation of reproduction	Ch 19 p621-622 P630-643	LAB EXAM
Apr 14–22	FINAL EXAM		

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