



School of Arts & Science
BIOLOGY DEPARTMENT
BIOL 151
Human Physiology
Winter/2011

COURSE OUTLINE

Course Description

(4 credits) W (3, 3, 0, 0)

This course is the companion to BIOL 150. It 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 the maintenance of homeostasis. Laboratory exercises illustrate basic physiological principles (T).

Prerequisite(s): BIOL 150 and Chemistry 11 or CHEM 060.

Ω *Please note: the College electronically stores this outline for five (5) years only. It is **strongly recommended** you keep a copy of this outline with your academic records. You will need this outline for any future application/s for transfer credit/s to other colleges/universities.*

1. Instructor Information

Instructor:	Don MacRae
Office Hours:	TBA
Location:	F346A
Phone:	370-3437
Email:	dmacrae@camosun.bc.ca
Website:	D2L

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) Text: Anatomy & Physiology: The Unity of Form and Function, 5th Edition. Saladin, K., McGraw-Hill (2010) **OR** another college level textbook of anatomy or anatomy and physiology.

(b) Laboratory Exercises and Assignments – available for printing via D2L website.

4. Course Content and Schedule

Week	Dates	Lecture Topic	Lab Activity
1	Jan 10-14	Digestion and Metabolism	Chemical Concepts and Physiology
2	Jan 17-21	Digestion and Metabolism	Lab 1: Movement of molecules in biological systems
3	Jan 24-28	Neuromuscular Physiology	Lab 2: Acids, Bases and Buffers Digestion of Organic Molecules
4	Jan 31-Feb 4	Neuromuscular Physiology	Lab 3: Fermentation and Respiration
5	Feb 7-11	Physiology of Sense Organs	Lab 4: Electromyography Reaction time
6	Feb 14-18	Cardiovascular Physiology Mid-term Exam 1	LAB 5: Reflexes
7	Feb 21-23	Cardiovascular Physiology	Lab tutorial
	Feb 24-25	Reading Break	
8	Feb 28-Mar 4	Immunology	Lab 6: Somesthetic testing Vision testing
9	Mar 7-11	Urinary Physiology	Lab 7: Electrocardiograms Cardiovascular physiology
10	Mar 14-18	Fluid Balance Mid-term Exam 2	Lab 8: Hematology and Immunology
11	Mar 21-25	Respiratory Physiology	Lab 9: Urinalysis Osmoregulation and water balance
12	Mar 28-Apr 1	Respiratory Physiology	Lab 10: Respirometry Respiratory gases and ventilation
13	April 4-8	Reproductive Physiology	Overview of labs
14	April 11-15	Reproductive Physiology	LAB EXAM
	April 18-21	FINAL EXAM – scheduled by registrar	

Readings from Saladin (5th edition)

Chemical Concepts and Physiology	Characteristics of Life (pp. 15-19) The Chemistry of Life (Ch 2) Carbohydrate metabolism (pp. 1025 - 32) Lipid and Protein metabolism (pp. 1033 - 35) Lipid transport (pp. 1020)
Digestion and Metabolism	General Regulation (p. 969) Mastication + Salivation (p.973 - 74) Swallowing (pp. 975 - 76) Gastric secretions (pp. 979 - 81) Regulation of gastric activity (pp. 983 – 986) The gallbladder and bile (p. 989) The pancreas (pp. 990 - 91) Regulation of secretion (pp. 991 -92) Intestinal secretion + motility (p. 995) Chemical digestion and absorption (pp. 996 - 1001) Colon, rectum and defecation (pp. 1004 - 1005) Nutrition (pp. 1014 - 25)
Neuromuscular Physiology	Neurophysiology (pp. 453- 469) Muscle physiology (pp. 414 - 434)
Physiology of Sense Organs	General senses 16.2 (pp. 589 - 595) Chemical senses 16.3 (pp. 595 - 599) Vision 16.5 (pp. 614 - 631)
Cardiovascular Physiology The heart	Blood (pp. 685 – 689, pp. 696 - 701) Hemostasis 18.5 (pp. 707 - 713) The Heart (pp. 731 - 749) Cardiovascular Physiology (pp. 764 - 776)
Immunology	pp. 837 - 855
Urinary Physiology	pp. 914 - 931
Fluid Balance	pp. 943 - 953
Respiratory Physiology	Ventilation 22.2 (pp. 875 – 886) Gas Exchange 22.3 (pp. 886 – 895)
Reproductive Physiology	Male (pp. 1061 - 1062) Female (pp. 1089 - 1097)

5. Basis of Student Assessment (Weighting)

Assignments/tests	15%
Midterm Exam 1	17.5%
Midterm Exam 2	17.5%
Lab Exam	20%
Final Comprehensive Exam	30%

6. Grading System

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	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

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 E-1.5 at camosun.ca 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i>
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.

Learning Support and Services are 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.

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and the College web site in the Policy Section.