



School of Arts & Science
Biology Department

Biology 151 Human Physiology
Spring 2007

COURSE OUTLINE

CALENDAR DESCRIPTION

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.

PREREQUISITES

Biology 150, Chemistry 11 (or equivalent), English 12 or assessment.

1. Instructor: Jennifer Giuliani

Office hrs: Mon., Tues., Thurs., Fri.: 1:00pm – 2:00pm (**or by appointment)
Location: E304
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2. Intended Learning Outcomes

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

TEXTBOOK:

Seeley, R.R., Stephens, T.D. and Tate, P. *Anatomy and Physiology (7th edition)*, McGraw Hill, New York, 2006.

Lab Manual:

Biology Department (Camosun College). *Biology 151 Laboratory Manual*, Camosun College, 2007.

Recommended materials:

Lab coat (disposable lab coats are acceptable)

4. Basis of Student Assessment (weighting)

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

TOTAL 100%

5. Grading System

The following percentage conversion to letter grade will be used:

A+ = 95% - 100%	C+ = 65% - 69%
A = 90% - 94%	C = 60% - 64%
A- = 85% - 89%	D = 50% - 59%
B+ = 80% - 84%	F = less than 50%
B = 75% - 79%	
B- = 70% - 74%	

Student Responsibilities

1. Sign a **Laboratory Safety Contract**, give it to the instructor prior to commencing laboratory work in the course and follow all safety rules and procedures during laboratory exercises.
2. Use acceptable English grammar, pronunciation, spelling and legible handwriting for presentations and evaluations.
3. Hand in assignments on time. There is a 10% penalty per day late.
4. Work independently on reports - unless instructed that the evaluation is based on group effort and evaluation. Please see Student Conduct Policy.

COURSE SCHEDULE - SPRING 2007

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 (Mondays and Thursdays)	LABORATORY ACTIVITIES (Tuesdays and Fridays)
1. May 7-11	<p>Cellular physiology</p> <ul style="list-style-type: none"> • Homeostasis, cell membranes, transport, enzymes <p>Digestive Physiology</p> <ul style="list-style-type: none"> • chemical digestion - enzymes • absorption - chemicals, routes, locations • neural and hormonal controls 	<p>LAB INTRO, SCIENTIFIC METHOD, and CHEMISTRY REVIEW</p> <p>LAB 1. Introduction to chemical concepts</p>
2. May 14-18	<p>Cellular Respiration</p> <ul style="list-style-type: none"> • cellular metabolism • cellular respiration <p>Metabolism</p> <ul style="list-style-type: none"> • carbohydrate metabolism • lipid and protein metabolism • interconversion of molecules • absorptive and postabsorptive states, hormonal control 	<p>LAB 2. Digestion of organic Macromolecules</p> <p>LAB 3. Fermentation and glucose monitoring</p>
3. May 22-25 (Monday, May 21 is a Holiday – College closed)	<p>Neural Physiology and Integration</p> <ul style="list-style-type: none"> • reflex pathways • membrane potentials • synapse and neurotransmitters neural integration <p>Sensory Reception</p> <ul style="list-style-type: none"> • general senses • theories of smell, taste, vision and hearing 	<p>“LAB”: Neurophysiology Lecture</p> <p>LAB 4. Electroencephalograms and reflexes</p>
4. May 28-June 1	<p>Muscle Physiology</p> <ul style="list-style-type: none"> • neuromuscular junction • sliding filament contraction theory • gross muscle physiology • comparison of smooth, skeletal and cardiac physiology <p>Endocrine Physiology (start)</p> <p>Cardiovascular Physiology</p> <ul style="list-style-type: none"> • ECG (action potentials) • cardiac cycle and controls • blood flow / blood pressure capillary exchange 	<p>LAB 5. Sensory Reception</p> <p>LAB EXAM 1: Friday, June 1st (Labs 1-5)</p>
5. June 4-8	<p>Hematology</p> <ul style="list-style-type: none"> • erythrocyte cycle • hemostasis <p>Start on Immunology (See Week 6)!</p> <p>MIDTERM EXAM: Thursday, June 7th (Topics covered: TBA in class)</p>	<p>LAB 6. Cardiovascular physiology</p> <p>LAB 7. Hematology</p>

6. June 11-15	<p>Immunology</p> <ul style="list-style-type: none"> • non-specific <ul style="list-style-type: none"> -mechanical, chemical, cells, complement -inflammatory response • specific <ul style="list-style-type: none"> - antibody mediated immunity - cell mediated immunity - acquired immunity <p>Respiratory Physiology</p> <ul style="list-style-type: none"> • ventilation • lung volume and capacities • gas laws and diffusion • blood flow/gradients (O₂/CO₂) 	<p>LAB 8. Immunology</p> <p>LAB 9. Respiratory Physiology</p>
7. June 18-22	<p>Renal Physiology</p> <ul style="list-style-type: none"> • filtration/reabsorption /secretion • fluid/electrolyte balance • acid/base balance <p>Reproductive Physiology</p> <ul style="list-style-type: none"> • spermatogenesis and oogenesis • regulation of reproduction • introduction to developmental biology • if time permits: regulation of pregnancy/parturition and lactation <p>Endocrine Physiology (Recap)</p>	<p>LAB 10. Urinalysis</p> <p>LAB EXAM 2: Friday, June 22nd (Labs 6-10)</p>
June 25-27	FINAL EXAM	(Date/time TBA)

STUDENT CONDUCT POLICY

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 on the College web site in the Policy Section.

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 camosun.ca.

There are also several links on my website (<http://moore.disted.camosun.bc.ca>) for more information on learning support and other resources. Or, drop in to my office hours and I will help to steer you in the right direction!