



**EFFECTIVE: JANUARY 2007**  
**CURRICULUM GUIDELINES**

A. Division: **Education** Effective Date: **January 2007**

B. Department / Program Area: **Science and Technology** / **Biology** Revision  New Course

If Revision, Section(s) Revised:  
 Date of Previous Revision:  
 Date of Current Revision:

C: **Biology 1205** D: **Human Anatomy & Physiology II** E: **3**

Subject & Course No.	Descriptive Title	Semester Credits
<b>F: Calendar Description:</b>  <b>This course is a continuation of the study of human anatomy and physiology. Students use a problem solving process to examine digestion, cellular respiration, fluids and electrolytes, excretion, the nervous system, endocrine system and genetics. Enrolment is usually limited to students in the Therapeutic Recreation program.</b>		
<b>G: Allocation of Contact Hours to Type of Instruction / Learning Settings</b>  Primary Methods of Instructional Delivery and/or Learning Settings:  <b>Problem-based learning-seminar, student directed learning and laboratory</b>  Number of Contact Hours: (per week / semester for each descriptor)  <b>4 hours per week in group sessions and laboratory</b>  Number of Weeks per Semester: <b>15</b>	<b>H: Course Prerequisites:</b>  <b>Biology 1105</b>	
	<b>I: Course Corequisites:</b>  <b>None</b>	
	<b>J: Course for which this Course is a Prerequisite</b>  <b>None</b>	
	<b>K: Maximum Class Size:</b>  <b>30</b>	
<b>L: PLEASE INDICATE:</b> <input type="checkbox"/> Non-Credit <input checked="" type="checkbox"/> College Credit Non-Transfer <input type="checkbox"/> College Credit Transfer: SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS ( <a href="http://www.bctransferguide.ca">www.bctransferguide.ca</a> )		

**M: Course Objectives / Learning Outcomes**

Upon completion of this course, students will:

1. Have gained an understanding of basic human anatomy and physiology in a context that will be useful to them in their work.
2. Have learned how to integrate knowledge, including how to use inquiry, critical thinking and scientific reasoning to solve problems.
3. Have experienced the value of teamwork, of developing good interpersonal skills, and the importance of psycho social issues in maintaining health and wellness.

More specifically, students will have learned to:

- Develop an appreciation for the interrelated nature of the physical, biological and behavioural mechanisms that must be considered with each health problem during the process of generating a management plan.
- Reinforce and/or develop effective reasoning processes including the skills of problem solving, hypothesis generation, critical appraisal of available information, data analysis and decision-making.
- Effectively use a problem-solving process to formulate a plan to address any health-related problem independently or in a group, in a timely manner.
- Critically evaluate literature, research findings, laboratory data and other resources in relation to accuracy, relevance and utility.
- Develop creative strategies for addressing problems by considering alternative ways of viewing a problem or situation.
- Function effectively as an active participant within a small group.
- Share and explain information.

**N: Course Content:**

1. DIGESTIVE SYSTEM
  - organization
  - structure and function of the oral cavity, esophagus, stomach, pancreas, liver, gall bladder, small intestine, and large intestine.
  - digestive system hormones and enzymes.
  - fates of carbohydrates lipids, and proteins.
  - disorders
2. NUTRITION
  - carbohydrate, lipid, and protein chemistry.
  - roles of carbohydrates, lipids, proteins, vitamins, and minerals.
  - nutritional requirements
  - diet
  - body composition
  - disorders
3. METABOLISM
  - energy systems- anaerobic and aerobic
  - carbohydrate, lipid, and protein metabolism
  - glycogenesis, glycogenolysis, and gluconeogenesis
  - regulation of metabolism
  - fatigue
  - disorders

#### 4. FLUIDS AND ELECTROLYTES

- fluid compartments
- fluid balance
- roles of water
- electrolyte distribution
- electrolyte functions
- electrolyte regulation
- acid-base balance
- disorders

#### 5. EXCRETORY SYSTEM -structure and function of the kidney, nephron, ureters, bladder, and urethra.

- physiology of urine formation
- homeostasis
- disorders

#### 6. NERVOUS SYSTEM - organization-CNS, PNS, ANS

- growth and development
- brain- structure and function
- spinal cord- structure and function
- physiology of impulse transmission
- spinal and cranial nerves
- neurotransmitters
- reflex arc
- sensory receptors
- proprioception
- sensory and motor pathways - motor unit
- special senses- vision, hearing, smell, taste
- disorders

#### 7. ENDOCRINE SYSTEM -endocrine glands and their hormones - structure and function

- mechanism of hormone action
- feedback control
- general adaptation syndrome
- homeostasis
- disorders

#### 8. GENETICS

- principles of genetics
- modes of inheritance
- amniocentesis
- disorders

#### **O: Methods of Instruction**

This course involves four hours of lectures, laboratory activities and self-directed, interdependent, small group and problem-based learning. The information content is integrated with problem sets, videos, laboratory experiences, journal articles and textbook readings.

#### **P: Textbooks and Materials to be Purchased by Students**

1. Donald Woods, 1994. *Problem-based Learning: How to Gain the Most from PBL*. McMaster University.
2. Marieb, Elaine, 2004. *Human Anatomy & Physiology*. 6<sup>th</sup> Edition. Benjamin/Cummings Science Publishing. (Includes the *Study Partner* CD Rom)

**Q: Means of Assessment**

TYPE OF EVALUATION	POINTS
Weekly Class Participation	25
Project	25
Minor Exam	20
Major Exam	<u>30</u>
TOTAL	100

GRADES:	A+ 95-100	A 90-94	A- 85-89	B+ 80-84	B 75-79	B- 70-74
	C+ 65-69	C 60-64	C- 55-59	P 50-54	F 0-49	

**Notes:**

**Exam:** Both exams are open book and similar in style to the classroom work, except that each student must analyze the problem on their own, without discussion. The minor exam will take one to two hours, the major exam will take about three hours.

**Participation:** As problem-based learning requires that each student be present to gain information and problem solving skills, participation is essential. At the end of each case, students will be assessed for their contribution to the problem solving process. Thus, when a class is missed, the participation opportunity is lost. Each class missed can result in the loss of a maximum of **2.5%**, to a total of 25%. A minimum of 1.5% will be lost for each class missed, even if the cause of the missed class is unavoidable.

**Project:** Each student will be required to choose a health issue of interest, relating to the topics in that semester and write a short ( max. 5 pages) description of the issue, and the facts currently known with respect to cause and, if possible, treatment.

**R: Prior Learning Assessment and Recognition: specify whether course is open for PLAR**

Student may present a portfolio documenting previous experience in A&P and will be asked to dissect a problem presented by the instructor.

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 Course Designer(s): Rob McGregor

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 Education Council / Curriculum Committee Representative

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 Dean / Director

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 Registrar