Douglas College

EFFECTIVE: SEPTEMBER 2006
CURRICULUM GUIDELINES

A.	Division:	**Education**	Effective Date:		**September 2006**		
B.	Department / Program Area:	**Science and Technology Biology**	Revision	**X**	New Course		
			If Revision, Section(s) Revised:		**F, J, M, N, O, P, Q, R**		
			Date of Previous Revision:		**September 2004**		
			Date of Current Revision:		**March 2006**		
C:	**Biology 1209**	**D**:	**Human Anatomy and Physiology II**		**E:**	**3**	

Subject & Course No.	Descriptive Title	Semester Credits

F: Calendar Description:

Human Anatomy and Physiology II is a continuation of the study of the anatomy and physiology of humans. The anatomy and physiology of the digestive, nervous, excretory, endocrine and reproductive systems are studied. Enrolment is usually limited to students in the Sports Science program.

G: Allocation of Contact Hours to Type of Instruction / Learning Settings

Primary Methods of Instructional Delivery and/or Learning Settings:

Lecture/Tutorial/Lab

Number of Contact Hours: (per week / semester for each descriptor)

5 hours/week
(2 hours lecture/1 hour tutorial/2 hours lab)

Number of Weeks per Semester: **15 weeks**

H: Course Prerequisites:

Biology 1109

I: Course Corequisites:

None

J: Course for which this Course is a Prerequisite

None

K: Maximum Class Size:

Lecture = 42
Tutorial = 21

L: PLEASE INDICATE**:**

- [ ] Non-Credit
- [ ] College Credit Non-Transfer
- [X] College Credit Transfer:

SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bctransferguide.ca)

M: Course Objectives / Learning Outcomes

Upon completion of Biology 1209, the student will be able to:

1. Describe the basic requirements of human nutrition and describe the roles of various nutrients in the body.
2. Describe the absorption, transport, storage and metabolic importance of carbohydrates, lipids and proteins.
3. Describe the gross anatomy of the digestive system and describe the digestion of carbohydrates, lipids, and proteins.
4. Describe energy metabolism, including the processes of glycolysis, Krebs Cycle and the electron transport chain.
5. Describe the importance of oxygen in respiration and compare aerobic and anaerobic respiration.
6. Describe the fluid and electrolyte composition of the body and explain how fluid and electrolyte balance is maintained.
7. Describe the components of the urinary system and explain the process by which the kidney manufactures urine.
8. Describe the considerations included in a typical urinalysis.
9. Describe the components of the nervous system and identify the roles of the major components of the nervous system and associated sensory organs.
10. Describe the glands of the endocrine system and name and specify the function of all major hormones.
11. Describe the structure and functioning of the male and female reproductive systems.
12. Describe embryonic and fetal development and the changes which take place in the mother during fetal development and lactation.
13. Describe the principles of genetics as they apply to humans and describe the mode of inheritance, and methods of in utero detection of common genetic abnormalities.
14. Describe the structure and functioning of the major mammalian body systems using a dissected fetal pig as a model.

<u>Core Competencies</u> (General Academic Expectations of Students)

Students successfully participating in this course will be expected, in addition to specific course objectives, to demonstrate competency in the following:

1. Oral, Written and Interpersonal Communications.
   In-classroom assignments, weekly written tests, mid-term and final examinations in this course will include writing. Students will work in groups on in-classroom assignments.
2. Independent Learning and Information Literacy.
   Students will use computer technology to access study guide materials provided by the textbook producer and will also utilize computer technology for self assessment.
3. Critical and Creative Thinking.
   This is a science based course which will require a critical analysis of data and conclusions derived from observations and experiments. Students will be required to think critically as they apply theory learned in the course to everyday situations and problems.

4 Computational, and Information Technology Skills.

This is a lab based course and students will be required to take measurements and make various calculations in a laboratory setting. They will be required to make calculations on weekly tests, theory examinations and practical laboratory examinations.

5 Teamwork.

Students will be required to demonstrate the ability to cooperate with other students in problem solving exercises in class and in some laboratory experiments.

Academic Signature:

This course will contain the following elements of the college's academic signature:

1. Applied Skills and Abilities

This is a laboratory course which requires students to develop practical skills and knowledge on a regular basis throughout the course. Students will also be required to demonstrate these skills and abilities on a practical laboratory examination.

Interdisciplinary Studies
Students will be expected to learn and/or apply basic mathematics and chemistry to the study of human anatomy and physiology.

2. Ethical Behavior and Social Responsibility - Effective Citizenship

Students will discuss the political and ethical implications of biological research and discoveries and will be expected to demonstrate an understanding of the relevance of biological knowledge to society.

3. Intercultural, International, and Global Perspective

Biological knowledge gained in this course will be considered in the context of its international and global implications. For example, issues such as the implications of intensive use of antibiotics, the significance of adequate nutrition, and availability of clean water, and the spread of disease have cultural and global significance and will be among topics discussed in the course.

N: Course Content:

1. The components of the digestive system will be described. The significance of carbohydrates, lipids and proteins in nutrition and their roles in energy metabolism will be discussed.

2. The biochemistry of energy metabism will be discussed.

3. The major electrolytes of the body will be described. The regulation of the electrolyte composition and the regulation of fluid balance will be discussed.

4. The components of the excretory system will be examined. The functioning of the nephron in the manufacture of urine will be discussed.

5. The organization of the nervous system will be described. The structure and function of the parts of the brain, the spinal cord, the major nerves, and the reflex arc will be discussed. The structure and functioning of the sense organs will be described.

6. The hormones of the endocrine glands will be identified, and the effects of each hormone will be studied.

7. The male and female reproductive structures will be identified and the functioning of the reproductive system will be described.

8. Human embryonic development will be studied. Fetal development, labor and lactation will be

studied.

9. The principles of genetics, as they apply to humans, will be examined. Modes of inheritance, common genetic disorders, and amniocentesis will be discussed.

10. Fetal pig dissections will be studied, with particular reference to the respiratory, digestive, cardiovascular, excretory, and reproductive systems.

O: Methods of Instruction

This course involves three hours per week of classroom instruction and two hours per week of laboratory activity. Classroom work will consist of two hours of lecture per week and one hour of group work (with instructor assistance) per week.

P: Textbooks and Materials to be Purchased by Students

1. Tortora, G.J. and Derrickson, B. Principles of Anatomy and Physiology. New York: John Wiley and Sons Inc.

2. Douglas College produced manual: Biology 1209: Human Anatomy and Physiology II.

Q: Means of Assessment

TYPE OF EVALUATION		**POINTS**
Class Tests and Assignments		20
Laboratory Experiments and Activities (seen Note 1 below)		(*up to* –20)
Laboratory Examination	- final	15
Comprehensive Examinations	- midterm	30
	- final	35
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:

1. **Laboratory Experiments and Activities:**

Laboratory work will be assigned each week. The laboratory work must be completed in the week it is assigned. If more than one lab assignment is not completed, two percentage points will be deducted for each lab assignment (in excess of the one permitted without penalty). **Laboratory experiments and assignments are a compulsory component of this course. A minimum of 50% of the laboratory experiments and assignments must be completed to receive a P or better grade in the course.**

2. **Examinations:**

There will be one midterm and one final examination. The final examination will cover the entire course. If the student achieves a better grade on the final exam than on the midterm examination, the midterm grade will be raised to equal that achieved on the final examination.

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

There is no provision of PLAR, other than that normally done by examining transcripts and comparing course outlines of human biology courses taken within the last five years elsewhere to the Douglas College Biology 1209 course content.

Course Designer(s)	Education Council / Curriculum Committee Representative
Dean / Director	Registrar