



EFFECTIVE: SEPTEMBER 2004 CURRICULUM GUIDELINES

A. Division: **Science and Technology** Effective Date: **September 2004**

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

If Revision, Section(s) Revised: **C, H, J, P, R**

Date Last Revised: **May 2002**

Date of Current Revision: **September 2004**

C: **Biology 1209** D: **Human Anatomy and Physiology II** E: **3**

| Subject & Course No. | Descriptive Title | Semester Credits |
|--|---|------------------|
| F: Calendar Description: The second half of a two-semester course. It examines nutrition, metabolism, and the anatomy and physiology of the digestive, circulatory, respiratory, excretory, endocrine, and reproductive systems. Enrolment is usually limited to students in the Sport Science program. | | |
| G: Allocation of Contact Hours to Type of Instruction / Learning Settings Primary Methods of Instructional Delivery and/or Learning Settings: Lecture / Tutorial / Laboratory Number of Contact Hours: (per week / semester for each descriptor) 5 hours per week 2 hours lecture / 1 hour tutorial / 2 hours lab Number of Weeks per Semester: 15 weeks | H: Course Prerequisites: Biology 1109 with a C- or better | |
| | I: Course Corequisites: None | |
| | J: Course for which this Course is a Prerequisite SPSC 309 | |
| | K: Maximum Class Size: Lectures: 42 Tutorials: 21 | |
| L: PLEASE INDICATE: <input type="checkbox"/> Non-Credit <input type="checkbox"/> College Credit Non-Transfer <input checked="" type="checkbox"/> College Credit Transfer: Requested <input type="checkbox"/> Granted <input checked="" type="checkbox"/> | | |
| SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS (www.bccat.bc.ca) | | |

M: Course Objectives / Learning Outcomes

Upon completion of this course, the student should be able to:

1. Describe the structure and functions of the digestive system.
2. Describe the structures and functions of carbohydrates, lipids, proteins, vitamins, and minerals.
3. Describe the relationship between nutrition and health.
4. Explain cellular respiration processes and describe the relationship between metabolism and body composition.
5. Describe the structure and functions of the cardiovascular system.
6. Explain the mechanisms controlling heart beat, the cardiac cycle, cardiac output, blood pressure, and blood flow.
7. Describe the immune system and the lymphatic system.
8. Describe the structure and functions of the respiratory system.
9. Describe respiratory exchange and explain the mechanisms controlling respiration.
10. Describe the structure and functions of the excretory system.
11. Explain the physiology of urine formation.
12. Identify the major fluids and electrolytes of the body and explain the mechanisms by which their balance is controlled.
13. Describe the structure and functions of the endocrine system.
14. Explain the mechanism of hormone action and the general adaptation syndrome.
15. Describe the structure and functions of the male and female reproductive systems.
16. Describe metabolic, nutritional, and fluid and electrolyte disorders, as well as disorders of the digestive, circulatory, respiratory, excretory, endocrine, and reproductive systems.
17. Identify structures on slides, models, and charts, and conduct tests and experiments related to course objectives.

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. **CIRCULATORY SYSTEM** -organization – circulatory routes
 -blood – structure and function
 -heart – structure and function
 -electrocardiogram
 -cardiac cycle
 -cardiac output
 -blood vessels – structure and function
 -circulation physiology – blood flow and blood pressure
 -hemostasis
 -immunity and the lymphatic system
 -disorders

5. **RESPIRATORY SYSTEM** -structure and function of the nose, pharynx, larynx, trachea, bronchi, and lungs.
 -pulmonary ventilation
 -air volumes and capacities
 -respiratory exchange
 -transport of gases
 -control and regulation of respiration
 -disorders

6. **EXCRETORY SYSTEM** -structure and function of the kidney, nephron, ureters, bladder, and urethra.
 -physiology of urine formation
 -homeostasis
 -disorders

7. **FLUIDS AND ELECTROLYTES** -fluid compartments
 -fluid balance
 -roles of water
 -electrolyte distribution
 -electrolyte functions
 -electrolyte regulation
 -acid-base balance
 -disorders

8. **ENDOCRINE SYSTEM** -endocrine glands and their hormones – structure and function
 -mechanism of hormone action
 -feedback control
 -general adaptation syndrome
 -homeostasis
 -disorders

9. **REPRODUCTIVE SYSTEM** -female reproductive system – structure and function
 -male reproductive system – structure and function
 -disorders

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 include lectures and tutorials with instructor assistance.

P: Textbooks and Materials to be Purchased by Students

1. Tortora and Grabowski, "Introduction to the Human Body". New York: John Wiley and Sons, Inc.
2. Douglas College produced manual: Biology 1109 Lab Manual.

Q: Means of Assessment

| <u>TYPE OF EVALUATION</u> | <u>POINTS</u> |
|---------------------------------------|--|
| Class Tests and Assignments | 20 |
| Laboratory Reviews (see Note 1 below) | (up to -22) |
| Laboratory Examination -final | 15 |
| Comprehensive Examinations -midterm | 30 |
| -final | 35 |
| TOTAL | 100 |
| <hr/> | |
| 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 Reviews:**

Required laboratory reviews will be assigned in most weeks, and these reviews must be completed in the week that they are assigned. The laboratory reviews are intended to provide an opportunity to review particular material with each student. Completion of the review will result in a grade of P (Pass), or R (Review Recommended) being marked on the laboratory sheet. **If more than one review is not completed satisfactorily (P or R), two marks will be deducted from the course total for each lab review in excess of one that is not completed.** A student **must complete 50 % of the reviews to receive a P or better grade in the course.**

2. Comprehensive Examinations:

There will be one midterm worth 30 marks in week 7 which will cover the course content to that point. 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 for 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 content.

 Course Designer(s)

 Education Council / Curriculum Committee Representative

 Dean / Director

 Registrar