

Division: ACADEMIC

 DATE: February 28, 1992

 B: Department: SCIENCE & MATHEMATICS

 New Course: X

Revision of Course Information form: _____

DATED: _____

 C: Biology 209
 Subject & Course No.

 D: Human Anatomy and Physiology
 Descriptive Title

 E: 3
 Semester Credit

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 Physical Education program.

Summary of Revisions:
 (Enter date & section)
 Ex: Section C,E,F, &R

G: Type of Instruction:	Hours Per Week/	Per Semester
Lecture	_____	Hrs.
Laboratory	<u>3</u>	Hrs.
Seminar	<u>2</u>	Hrs.
Clinical Experience	_____	Hrs.
Field Experience	_____	Hrs.
Practicum	_____	Hrs.
Shop	_____	Hrs.
Studio	_____	Hrs.
Student Directed Learning	_____	Hrs.
Other	_____	Hrs.
TOTAL	<u>5</u>	HOURS

H: Course Prerequisites:
 Bio 109

I: Course Corequisites:
 Nil

J: Course for which this course
 is a pre-requisite
 PE 309, PE 409

K: Maximum Class Size:
 25

M: Transfer Credit:
 Requested _____
 Granted X
 Specify Course Equivalents or
 Unassigned Credit as Appropriate

 U.B.C. BIO 109/209 = PE 391(3)
 S.F.U. BIO 109/209 = KIN 205(3) + KIN(3)
 U. Vic. BIO 109/209 = PE 141(1.5) + 241B(1.5)
 or PE 100 level(3)

OTHER:

COURSE DESIGNER(S)

DIRECTOR/CHAIRPERSON

DIVISIONAL DEAN

REGISTRAR

**N: Textbooks and materials to be purchased by students
(Use Bibliographic Form):**

1. Spence, A.P. and E.B. Mason. Human Anatomy and Physiology. West Publishing Co. St. Paul. Minn. 1992.
2. Biology 209 Laboratory Manual.

Complete Form with Entries Under the Following Headings:

- O. Course Objectives; P. Course Content; Q. Method of Instruction;**
R. Course Evaluation

O. Course Objectives:

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

1. describe the structure and functions of the digestive system
2. describe the structure and function 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 function 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 function of the respiratory system
9. describe respiratory exchange and explain the mechanisms controlling respiration
10. describe the structure and function of the excretory system
11. explain the physiology of urine formation
12. identify the major fluids and electrolytes in the body and explain the mechanisms by which their balance is controlled.
13. describe the structure and function of the endocrine system
14. explain the mechanism of hormone action and the general adaptation syndrome
15. describe the structure and function of the female and male reproductive systems
16. describe human growth and development
17. describe metabolic, nutritional, and fluid and electrolyte disorders and disorders of the digestive, circulatory, respiratory, excretory, endocrine, and reproductive systems
18. identify structures on slides, models and charts and conduct tests and experiments related to course objectives

P.

Course Content

1. **DIGESTIVE SYSTEM**
 - organization
 - structure and function of oral cavity, esophagus, stomach, pancreas, liver, gall bladder, small intestine, large intestine
 - digestive hormones and enzymes
 - fate of carbohydrates, lipids, proteins
 - disorders

2. **NUTRITION**
 - carbohydrate lipid, protein chemistry
 - roles of carbohydrates, lipids, proteins, vitamins, minerals
 - nutritional requirements
 - diet
 - body composition
 - disorders

3. **METABOLISM**
 - energy systems - anaerobic, aerobic
 - carbohydrate, lipid, protein metabolism
 - glycogenesis, glycogenolysis, 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
 - lymphatic system
 - immunity
 - disorders

5. **RESPIRATORY SYSTEM**
 - structure and function of nose, pharynx, larynx, trachea, bronchi, 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 kidney, nephron, ureters, bladder, 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 hormones - structure and function**
- mechanism of hormone action
 - feedback control
 - general adaptation syndrome
 - homeostasis
 - disorders
9. **REPRODUCTIVE SYSTEM, INHERITANCE AND DEVELOPMENT**
- female reproductive system - structure and function
 - male reproductive system - structure and function
 - growth and development
 - human genetics
 - disorders

Method of Instruction

There is a weekly lecture and laboratory period. In the lecture, the student is evaluated on the previous week's work by a written test. The current week's work is introduced and discussed.

In the laboratory period, students study basic human anatomy and physiology using models, charts, microscope slides, demonstration materials, audiotapes, videotapes, and test procedures.

R. Evaluation

Evaluation will be carried out in accordance with Douglas College policy. The instructor will present a written course outline with specific evaluation criteria at the beginning of the semester. Evaluation will be based on the following:

1.	Weekly tests	10 - 20%
2.	Laboratory evaluations	10 - 20%
3.	Laboratory examinations:	
	a) Midterm	0 - 10%
	b) Final	5 - 15%
4.	Comprehensive examinations:	
	a) Midterm	20 - 30%
	b) Final	20 - 30%