

M: Course Objectives / Learning Outcomes

Upon completion of Biology 1203, 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 foetal development and the changes which take place in the mother during foetal 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 foetal pig as a model.

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 metabolism 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. Foetal development, labour 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. Foetal pig dissections will be studied, with particular reference to the respiratory, digestive, cardiovascular, excretory, and reproductive systems.

O: Methods of Instruction

This course involves four hours per week of classroom instruction and two hours per week of laboratory activity. Classroom work will consist of lectures, tutorials, and work in small groups.

P: Textbooks and Materials to be Purchased by Students

Tortora, G.J. and Derrickson, B. *Principles of Anatomy and Physiology* (Current Edition). New York: John Wiley and Sons, Inc.

Douglas College produced manual: **Biology 1203/1209: Human Anatomy and Physiology II.**

Q: Means of Assessment

TYPE OF EVALUATION	POINTS
Class Tests and Assignments	20 – 30 %
Laboratory Experiments and Activities (see Note 1 below)	(up to –20 %)
Laboratory Examination - final	10 – 15 %
Comprehensive Examinations - midterm	25 – 35 %
- final	25 – 35 %
TOTAL	100

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 1203 course content.

 Course Designer(s)

 Education Council / Curriculum Committee Representative

 Dean / Director

 Registrar