



DEPARTMENT OF SCIENCE

**COURSE OUTLINE – PZ 1500 Physiology I
3(3-0-0) UT [45 HOURS]**

INSTRUCTOR: Dr. Georgia Goth **PHONE:** 780-539-2827

OFFICE: J222 **E-MAIL:** ggoth@gprc.ab.ca

OFFICE HOURS: Drop in or by appointment

REQUIRED TEXT/RESOURCE MATERIALS: Saladin, K.S., 2010, Anatomy and Physiology: The Unity of Form and Function, 5th ed., McGraw-Hill, Boston

DESCRIPTION: This is an introductory course in physiology for the health sciences. It is available only to students in the nursing program. The first semester of this course covers fundamental concepts in physiology. Some of the topics may require extra reading /study by the students.

DELIVERY MODE(S): Lecture with some discussions; Classes will be held Tuesday and Thursday from 1:00 to 2:20, beginning September 2nd, 2010

OBJECTIVES: [1] To understand basic physiological concepts and processes
[2] To understand the relationship between structure and function
[3] To be able to describe the regulation of various physiological systems comprising the human body

TRANSFERABILITY: U of A, U of C, AU, AF, other

GRADING CRITERIA: Examinations and quizzes will consist of a variety of question types, including multiple choice and short-answer questions.

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A⁻	3.7	80 – 84	FIRST CLASS STANDING
B⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C⁻	1.7	60 – 62	
D⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline

EXAMINATIONS:

Quiz I: 25%

Final Exam I: 25%

Quiz II: 15%

Final Exam II: 25%

STATEMENT ON PLAGIARISM AND CHEATING:

Please refer to pages 49-50 of the College calendar regarding plagiarism, cheating and the resultant penalties. These are serious issues and will be dealt with severely.

LECTURE SCHEDULE YA2:

FALL SCHEDULE:

1. Introduction to physiology Chapter 1 (pages 16-19)
 - Homeostasis
 - Feedback mechanisms

2. Enzymes and Metabolism Chapter 2 (pages 77-83)
 - Structure and function
 - Metabolic pathways
 - ATP

3. The cell Chapter 3 (pages 102-110)
 - Membrane transport
 - Osmolarity

4. Cellular respiration Chapter 26 (pages 1025-1035)
 - Carbohydrate metabolism
 - Anaerobic respiration
 - Aerobic respiration
 - Lipid metabolism

5. Cellular function Chapter 4 (pages 130-140)
 - Genetic code
 - Protein synthesis
 - DNA replication
 - The cell cycle

6. The circulatory system: Blood Chapter 18
 - Functions and properties of blood
 - Blood cell formation
 - Blood types
 - Hemostasis
 - Coagulation disorders

QUIZ I: September 29th

- | | |
|--------------------------------------|-------------------------------------|
| 7. Nervous Tissue | Chapter 12 (pages 443-467) |
| - Neurons & neuroglia | |
| - Electrophysiology of neurons | |
| - Synapses | |
| 8. Muscle tissue | Chapter 11 (pages 405-420; 425-430) |
| - Muscle tissue | |
| - Muscle innervations | |
| - Contraction and relaxation | |
| - Muscle metabolism | |
| 9. Somatic reflexes | Chapter 13 (pages 503-509) |
| - Mechanism | |
| - Types of reflexes | |
| 10. Autonomic nervous system | Chapter 15 (pages 566-569; 572-580) |
| - Arrangement of the ANS | |
| - Autonomic effects on target organs | |
| 11. Muscle physiology | Chapter 12 |

FINAL EXAMINATION I: October 20th

WINTER SEMESTER:

- | | |
|----------------------------------|------------------------|
| 1. Male reproductive system | Chapter 27 |
| - Sex determination | |
| - Puberty | |
| 2. Female reproductive system | Chapter 28 |
| - Puberty | |
| - Oogenesis and the sexual cycle | |
| 3. Birth control | Chapter 28 (1108-1110) |

4. Human Development Chapter 29 (pages 1118-19; 1147-48)
- Fertilization
 - Pre-embryonic development
 - *in vitro* fertilization

5. Respiratory system Chapter 22 (pages 877-898)
- Pressure & flow (Boyles Law)
 - Inspiration and expiration
 - Resistance and surface tension
 - Alveolar ventilation
 - Alveolar gas exchange
 - Gas transport
 - Systemic gas exchange
 - Oxygen imbalances
 - COPD

QUIZ I: January 31st/2012

6. Sensory organs Chapter 16 (pages 589-630)
- Sensory receptors (piai)
 - Taste (gestation)
 - Smell (olfaction)
 - Hearing
 - Vision

7. Menopause Chapter 28 (pages 1089)

8. Cancer and the cell cycle Chapter 4 (page 147)
- Causes of cancer
 - Breast cancer

FINAL EXAMINATION: As scheduled