DEPARTMENT OF SCIENCE

COURSE OUTLINE – PZ 1500

PHYSIOLOGY I

INSTRUCTOR: Dr. Georgia Goth **PHONE:** 780-539-2827
OFFICE: J222 **E-MAIL:** ggoth@gprc.ab.ca

OFFICE HOURS: Tuesday 11:30-12:50, Thursday 11:30-12:50, Friday 12:30-12:50

PREREQUISITE(S)/COREQUISITE: Biology 30; Restricted to nursing students

REQUIRED TEXT/RESOURCE MATERIALS: : Saladin, K.S., 2012, Anatomy and Physiology: The Unity of Form and Function, 6th ed., McGraw-Hill, Boston

CALENDAR 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.

CREDIT/CONTACT HOURS: 3 (3-0-0)

DELIVERY MODE(S): Lecture

OBJECTIVES (OPTIONAL):

[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: UA, UC, AU, AF, UL, Other

**** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

GRADING CRITERIA:

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**

EVALUATIONS:

Quiz I: **25%**

Final Exam I: 25%

Quiz II: 25%

Final Exam II: 25%

STUDENT RESPONSIBILITIES: It is the responsibility of the student to attend all classes and to hand in assignments on time.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

**Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE/TENTATIVE TIMELINE:

FALL SCHEDULE:

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

2. Enzymes and Metabolism — Chapter 2 (pages 69-72)
   - Structure and function
   - Metabolic pathways
   - ATP

3. The cell — Chapter 3 (pages 91-97)
   - Membrane transport
   - Osmolarity

4. Cellular respiration — Chapter 26 (pages 1012-1022)
   - Carbohydrate metabolism
   - Anaerobic respiration
   - Aerobic respiration
   - Lipid and protein metabolism

5. Cellular function — Chapter 4 (pages 115-127)
   - 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 27th

7. Nervous Tissue — Chapter 12 (pages 446-465)
    - Neurons & neuroglia
    - Electrophysiology of neurons
    - Synapses

8. Somatic reflexes — Chapter 13 (pages 500-506)
    - Mechanism
    - Types of reflexes

9. Autonomic nervous system — Chapter 15 (pages 566-569; 572-580)
    - Arrangement of the ANS
    - Autonomic effects on target organs

10. Muscle tissue — Chapter 11 (pages 403-427)
    - Muscle tissue
    - Muscle innervations
    - Contraction and relaxation
    - Muscle metabolism

FINAL EXAMINATION I: October 25th

WINTER SEMESTER:

1. Male reproductive system — Chapter 27
   - Sex determination
   - Puberty

2. Female reproductive system — Chapter 28
   - Puberty
   - Oogenesis and the sexual cycle
   - Menopause

3. Birth control — Chapter 28 (1096-1097)

4. Human Development — Chapter 29 (pages 1103-1107; 1132-33)
   - Fertilization
   - Pre-embryonic development
   - Reproductive technology

QUIZ I: January 29th/2013

5. Respiratory system — Chapter 22 (pages 871-890)
   - Pressure & flow (Boyles Law)
   - Inspiration and expiration
   - Resistance and surface tension
   - Alveolar ventilation
   - Alveolar gas exchange
   - Gas transport
   - Systemic gas exchange
   - Oxygen imbalances
   - COPD

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

7. Cancer and the cell cycle — Chapter 4 (page 131)

FINAL EXAMINATION: February 28th, 2013