

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: Pathophysiology I

CODE NO. : PNG233 **SEMESTER:** 3

PROGRAM: Practical Nursing

AUTHOR: Ann Boyonoski

DATE: Sept/14 **PREVIOUS OUTLINE DATED:** Sept/13

APPROVED: *"Marilyn King"* *Aug. 2014*

CHAIR, HEALTH PROGRAMS **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S): PNG111, PNG121, PNG127, PNG130, PNG131

HOURS/WEEK: 4

Copyright ©2012 The Sault College of Applied Arts & Technology
Reproduction of this document by any means, in whole or in part, without prior written permission of Sault College of Applied Arts & Technology is prohibited.
For additional information, please contact the Chair, Health Programs
School of Health Wellness and Continuing Education.
(705) 759-2554, Ext. 2689

I. COURSE DESCRIPTION:

This course provides the learner with a general understanding and working knowledge of the structure and function of various body systems experiencing both acute and chronic health challenges. The learner will examine changes that occur in the human body and explore how the body compensates for those challenges. Included in this course is the study of the basic principles of microbiology.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Use the appropriate **terminology** related to how normal physiological processes are altered by health challenges (disease).
2. Explain the **pathophysiological concepts** of various health challenges.
3. Describe how the human body **compensates** during a health challenge.
4. Examine common health challenges and their effect on the human body.
5. Examine typical **diagnostic testing** for common health challenges.
6. Examine the **effects of microbes** on the body.

Review the selected key terms (vocabulary) for each specific concept/system.

The requirements of the learning outcomes will be met by the defined elements of performance under the following :

CONCEPTS OF DISEASE

1. Introduction to Pathophysiology

- 1.1 Explain the role of pathophysiology in the diagnosis and treatment of disease
- 1.2 Review normal defences of the body
- 1.3 Identify and describe specific and non-specific defences
- 1.4 Discuss the stress response and its relationship to disease
- 1.5 Identify and describe the various types of cellular injury, adaptation and death
- 1.6 Identify and describe the most common causes of cell injury, adaptation and death

2. Inflammation & Healing

- 2.1 Explain the inflammatory process
- 2.2 Describe the signs and symptoms of inflammation (local and systemic effects)
- 2.3 Describe the characteristics of exudates
- 2.4 Discuss diagnostic tests used to diagnose and monitor inflammation
- 2.5 Explain the healing process
- 2.6 Identify and describe factors that affect healing

3. Pain

- 3.1 Identify and describe the causes, signs and symptoms of pain
- 3.2 Describe the pain pathway
- 3.3 Discuss factors that may alter perception of pain
- 3.4 Compare acute and chronic pain

4. Fluid and electrolyte balance – Acid /base imbalance

- 4.1 Identify and describe functions and regulatory mechanisms that maintain fluid and electrolyte balance
- 4.2 Identify and describe the common causes signs and symptoms and complications of fluid volume excess and deficit
- 4.3 Identify and describe the common causes, signs and symptoms and complications of the more common electrolyte imbalances
- 4.4 Identify and describe the common causes, signs and symptoms and complications of acidosis and alkalosis (metabolic and respiratory)
- 4.5 Discuss diagnostic tests used to diagnose and monitor fluid, electrolyte and acid/base imbalances

5. Immunological Diseases

- 5.1 Identify the etiology, contributing factors, signs and symptoms, complications of immune disorders
- 5.2 Examine diagnostic tests used to diagnose and monitor immune disorders

6. Infection

- 6.1 Describe the typical characteristics of a bacteria, virus, fungus, parasite
- 6.2 Examine the transmission of infectious agents
- 6.3 Describe the chain of infection
- 6.4 Discuss interventions to prevent spread of infection (Guidelines for standard and transmission based precautions)
- 6.5 Describe the progression of infection
- 6.6 Identify and describe common nosocomial infections
- 6.7 Discuss diagnostic tests used to diagnose and monitor infection

7. Hematological Diseases

- 7.1 Identify the etiology, contributing factors, signs & symptoms of various blood disorders (anemias, clotting)
- 7.2 Examine diagnostic tests used to diagnose and monitor blood disorders

8. Cardiovascular

- 8.1 Identify and describe the etiology, contributing factors, pathophysiology, signs and symptoms of various cardiovascular and peripheral vascular disorders
- 8.2 Identify and describe the common causes, signs and symptoms and complications of the various stages of shock

8.3 Examine the diagnostic tests used to diagnose and monitor cardiovascular & peripheral vascular disorders

9 Respiratory

- 9.1 Identify and describe the etiology, contributing factors, pathophysiology, signs and symptoms of various acute respiratory disorders (upper and lower)
- 9.2 Explain the progressive airway response to a stimulus
- 9.3 Identify the etiology, contributing factors, signs and symptoms and complications of chronic respiratory disorders
- 9.4 Compare and contrast emphysema, asthma and bronchitis
- 9.5 Discuss diagnostic tests used to diagnose and monitor respiratory disorders

III. TOPICS:

1. Introduction to Pathophysiology
2. Inflammation & Healing
3. Pain
4. Fluid and electrolyte balance – Acid /base imbalance
5. Immune Disorders
6. Infection
7. Hematological Disorders
8. Cardiovascular Disorders
9. Respiratory Disorders

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Gould B. E. (2011). *Pathophysiology for the Health Professions* (4th ed.). Saunders.

Marieb, E. N. *Anatomy and Physiology*. Benjamin-Cummings.

Sault College D2L (LMS) (course notes, important announcements)

Sault College Student Portal – www.mysaultcollege.ca

USEFUL:

Springhouse (2002). *Pathophysiology made Incredibly Easy* (2nd ed.). Lippincott, William and Wilkins.

Kee Lefever, Joyce (2001). *Handbook of laboratory and diagnostic tests* (4th ed.). Upper Saddle River, NJ: Prentice Hall. (*used in Semester 4*)

V. EVALUATION PROCESS/GRADING SYSTEM:

1. **The pass mark for this course is 60% = C.** It is composed of term tests and a final exam. There are no rewrites for any test or exam.

2. Evaluation Methods:

1 "intro" quiz	10%
2 term tests (MC)	50%
5 Online quizzes	10%
Final Exam (multiple choice)	30%
TOTAL	100%

3. Students missing the quizzes or the final exam because of illness or other serious reason must inform the professor at least one hour **before** (759-2554, Ext. 2635 OR via email/LMS). Those students who have notified the professor of their absence, according to policy, must, **as soon** as they return to school (or clinical) make arrangements to write the test. Those students who **do not notify** the professor will receive a zero for that evaluation. Students that miss a quiz/exam and wish to write the quiz/exam will be asked to provide documentation for their absence. See Student Success Guide for further information

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 - 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session. *It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivals may not be granted admission to the room.*

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on LMS and the portal form part of this course outline.