



## I. COURSE DESCRIPTION:

The learner will continue to learn about the normal structures and functions of the human body. Students will examine the physiological components, homeostasis and compensatory mechanisms of the human body. Associated medical terminology, pathophysiology and basic microbiology will also be covered.

**This course is designed to enable students to attain competencies specified in the National Association of Pharmacy Regulatory Authorities (NAPRA) Professional Competencies for Canadian Pharmacy Technicians at Entry to Practice September 2007.**

(Full document available at [www.napra.ca](http://www.napra.ca))

This course meets NAPRA competency categories 1.2, 1.3, 2.1, 7.1, 7.2

**This course is designed to enable students to attain the educational outcomes specified in the Canadian Pharmacy Technician Educators Association (CPTA) Educational Outcomes for Pharmacy Technician Programs in Canada.(March 2007).** (Full document available at [www.cptea.ca](http://www.cptea.ca))

**This course is designed to enable students to meet and maintain the standards of practice expected within the pharmacy technician's role. The standards are specified in the National Association of Pharmacy Regulatory Authorities (NAPRA) Model Standards of Practice for Canadian Pharmacy Technicians. November 2011.** (Full document available at [www.napra.ca](http://www.napra.ca))

## II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Describe the location, development, structure and function of cells, tissues and organs of the stated body system and understand homeostatic imbalances of each body system.

### Potential Elements of the Performance:

#### Endocrine

- Describe the difference between endocrine and exocrine glands and their functions
- Identify the appropriate location of endocrine glands and tissues
- List and describe the hormones and functions of the major endocrine glands including: pituitary, thyroid, parathyroid, adrenal, pancreatic islets, pineal, thymus and male and female gonads
- Describe the process of hormonal secretion and regulation
- Describe major pathological consequences of disorders of the endocrine system
- Describe the effect of aging on the endocrine system and body homeostasis

### Blood

- Describe the general composition of blood
- List the 3 major categories of formed elements and their cell types and describe the major function of each type
- Describe disorders of the blood system such as anemia, leukocytosis, leukopenia, polycythemia
- Describe the sequence of events in the blood clotting process (hemostasis)
- Explain human blood typing and its importance

### Cardiovascular

- Identify the location, structure and function of the heart and blood vessels
- Trace the pathway of blood through the heart
- Describe the basic circulation system and compare the pulmonary and systemic circulation
- Name the major veins and arteries and identify the organs or body region supplied by each
- Discuss the components and function of the intrinsic conduction system of the heart
- Define pulse and blood pressure and explain how they are regulated
- Define hypertension and describe possible associated adverse health consequences
- Define atherosclerosis and describe possible associated adverse health consequences

### Lymphatic and Immune Systems

- Describe the source of lymph
- Identify the major types of structures composing the lymphatic system
- Describe the function of the lymphatic system and relate to the cardiovascular and immune systems
- Identify the location and function of lymph nodes, tonsils, spleen and thymus gland
- Describe and compare pathogens encountered by the immune system
- Compare the innate and adaptive defenses of the body
- Explain the mechanism of humoral immunity
- Explain the mechanism of cellular immunity
- Describe disorders of the immune system such as immunodeficiencies, allergies, and autoimmune disease

### Respiratory

- List and describe the major components of the respiratory system
- Describe the functions of the major structures in the respiratory system
- Describe how ventilation and respiration occurs
- Explain the process of gas exchange in the lungs and tissues
- Name several physical factors that affect respiratory rate
- Define the basic respiratory volumes
- Explain how oxygen and carbon dioxide are transported in the blood
- Discuss diseases relating to the respiratory system

#### Digestive system and Body Metabolism

- Explain the purpose of the gastrointestinal system
- List the structures and functions of the digestive system
- Describe the process of digestion
- List the six nutritional source categories, identify dietary sources of each and explain their cellular use
- Describe diseases of the gastrointestinal system
- Describe the process of cellular respiration and explain its importance

#### Urinary System

- List the major structures of the urinary system and describe their functions
- Describe the functions of the kidneys
- Explain the process of urine formation
- Describe the normal composition of urine
- Explain how kidneys regulate and maintain blood's normal composition
- Describe diseases of the genitourinary system

#### Reproductive System

- List the structures of the male and female reproductive systems and describe the functions of these structures
- Describe spermatogenesis
- Describe oogenesis
- Discuss hormonal regulation of reproduction in males and females

### III. TOPICS:

1. Endocrine System
2. Blood
3. Cardiovascular system
4. Lymphatic System and body Defenses
5. Respiratory System
6. Digestive system and Body metabolism
7. Urinary System
8. Reproductive System

### IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Marieb E. Essentials of Human Anatomy and Physiology, Tenth Edition. 2012 Pearson Education Inc. ISBN -13:978-0-321-69598-7

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Test #1	15%
Test #2	15%
Test #3	15%
Online quizzes (8)	15%
Final exam	40%
<b>Total</b>	<b>100%</b>

1. The pass mark for the course is 60%. The total grade is composed of marks accumulated for 3 tests, a final exam, and 8 online quizzes.
2. All policies and procedures as outlined in the current Student Success Guide related to submitting assignments, scholarly work/academic honesty, tests and examinations will be followed.
3. **No supplements** will be provided for tests or the final exam.
4. **Health science online quizzes:** Students will be allowed two attempts for each quiz. The highest mark for each quiz will be recorded.
5. Students missing tests or the final exam because of illness or other serious reason must contact the professor before the test or exam to inform him/her (759-2554, ext. 2785 or via email). Those students who have notified the professor of their absence, according to policy, will be eligible to arrange an opportunity to write the test or exam at another time. Students must contact the professor on their first day back at school following a missed test or exam. Those students who do not follow the above procedures will receive a zero for that test or exam.

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.

***NOTE: Mid Term grades are provided in theory classes and clinical/field placement experiences. Students are notified that the midterm grade is an interim grade and is subject to change.***

**A minimum of a “C” grade is required to be successful in all PTN coded courses.**

It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

**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.

**VII. COURSE OUTLINE ADDENDUM:**

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