

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE:	Health Sciences I		
CODE NO. :	PTN 100	SEMESTER:	1
PROGRAM:	Pharmacy Technician		
AUTHOR:	Maria Coccimiglio		
DATE:	Sep-2011	PREVIOUS OUTLINE DATED:	N/A
APPROVED:	"Marilyn King"		Sept./11
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	CHAIR, HEALTH PROGRAMS		DATE
TOTAL CREDITS:	3		
PREREQUISITE(S):	None		
HOURS/WEEK:	3		

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For additional information, please contact the Chair, Health Programs
School of Health and Community Services
(705) 759-2554, Ext. 2603

I. COURSE DESCRIPTION:

This course introduces the learner to the normal development, structures and functions of the human body. The learner will examine the physiological components, homeostasis and compensatory mechanisms of the human body. Pathophysiology, microbiology and associated pharmacology will be covered as well. Medical Terminology will be incorporated throughout the course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

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

1. Use the appropriate terminology related to the organization, structure and function of the human body.

Potential Elements of the Performance:

- Define anatomy and physiology
- Explain how anatomy and physiology are related
- Name the six levels of structural organization of the human body
- Name the major organ systems of the body
- Name the major organs and classify by organ system
- Describe verbally the anatomical position
- Use proper anatomical terminology to describe :
 - body directions
 - body surfaces
 - Body planes
- Name the major body cavities
- Name the chief organs in each body cavity

2. Describe the relationship between the structure and function of the human body.

Potential Elements of the Performance

- List eight functions that humans must perform to maintain life
- List five survival needs of the human body
- Define homeostasis and its relationship in maintaining normal body functions

3. Understand the chemical composition of the human body and the chemical interactions of body functions

Potential Elements of the Performance:

- Name four major energy forms and provide an example of how each is used in the body
- Define chemical element and list the four elements that form the bulk of body matter
- Explain how elements and atoms are related
- Describe the basic structure of an atom
- Define radioisotope and describe briefly how they are used in diagnosis and treatment of disease
- Define molecule and explain how molecules are related to compounds
- Understand what occurs during a chemical reaction
- Differentiate the 3 types of chemical bonds
- Differentiate the 3 types of chemical reactions
- Distinguish between organic and inorganic compounds and give examples of each
- Name several salts vitally important to bodily functions
- Differentiate a salt, an acid, and a base
- Explain the concept of pH and its relationships to acids, base, salts in the body
- Explain the role of enzymes
- Compare and contrast the structure and function of DNA and RNA
- Explain the importance of ATP in the body

4. 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:

CELLS

- Describe the major cell regions of a generalized cell
- List the function of each of the cell regions of a generalized cell
- Differentiate between the 2 types of cell membrane transport processes and give examples of each type of process
- Name the 2 phases of cell division
- Describe briefly the process of DNA replication and of mitosis
- Describe the role of DNA and of RNA in protein synthesis

BODY TISSUES

- Name the 4 major tissue types
- Explain how the major tissue types differ structurally and functionally
- Identify the common locations of the tissue type in the body

SYSTEMS

Skin and Body Membranes

- Name the 4 membrane types and the location of each in the body
- Describe the structure of the skin and its layers
- Describe the basic function of the skin
- Name the layers of the epidermis and describe the functions of each layer
- Describe which homeostatic imbalances of the skin are severe

Skeletal

- Identify the subdivisions of the skeleton
- Identify the functions of the skeletal system
- Name the four classifications of bone
- Identify the major anatomical areas of a long bone
- Describe the microscopic structure of compact bone
- Describe the process of bone formation
- Name and describe the types of bone fractures
- Identify the bones of the axial and appendicular skeleton
- Compare the parts of the cervical, thoracic and lumbar vertebra
- Name the three major categories of joints and compare the amount of movement allowed by each
- Identify some of the causes of bone and joint problems

Muscle

- Compare the structure and function of the 3 types of muscle tissue and indicate the location of each in body
- Explain the basic process of muscle contraction
- Explain the relationship between muscle origin, insertion and action
- Name and describe the location of the major muscle groups
- Describe the changes that occur in aging muscles

Nervous

- Explain the structural and functional classifications of the nervous system, their components and functions
- Name the two types of cells that make up the nervous tissue
- Describe the process of nerve impulse generation and conduction
- Describe how impulses are transmitted across a synapse
- Explain the four mechanisms by which the central nervous system is protected from injury
- Describe the structure and function of the four main areas of the brain
- Discuss various type of brain dysfunctions
- Discuss the structure and function of the spinal cord
- Discuss the location and function of cranial and spinal nerves
- Describe the divisions of the peripheral nervous system

Special Senses

- Identify the location, structure and function of the special sense organs
- Describe various imbalances that can occur with each of the four special senses

III. TOPICS:

1. Orientation to the Human Body
2. Basic Chemistry and Biochemistry
3. Cells and Tissues
4. Skin and Body Membranes
5. Skeletal System
6. Muscular System
7. Nervous System
8. Special Senses

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

Chabner D. Medical Terminology: A Short Course, Fifth Edition. 2009 Elsevier Inc.
ISBN: 978-1-4160-5518-1

V. EVALUATION PROCESS/GRADING SYSTEM:

Test #1	20%
Test #2	20%
Final exam	40%
Health science online quizzes (8)	20%
Medical terminology	S or U
<ul style="list-style-type: none"> • 5 terminology quizzes • Midterm test • Final test 	
Total	100%

1. The pass mark for the course is 60%. The total grade is composed of marks accumulated for 2 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.
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. **Medical Terminology:** This is a self-directed study component whereby the student is expected to complete activities from each chapter and write the subsequent quizzes online. The student will complete the 5 medical terminology quizzes online in LMS/Blackboard within the established timeframe and write the midterm and final tests during scheduled class time. The student must achieve a combined minimum average of 60% on the quizzes and tests in order to be satisfactory.
6. 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 (749-2554, ext. 2468 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.

Note: For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade.

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.