



**I. COURSE DESCRIPTION:**

This course will provide the student with a knowledge base of the structures and functions of the human body with special attention to the neuromusculoskeletal systems, as required for the needs of the Occupational Therapist Assistant and Physiotherapist Assistant.

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

Upon successful completion of this course, the student will:

1. Demonstrate an understanding of the basic structure and function of the human body and specified tissues, and their integral role in maintaining homeostasis.

Potential Elements of the Performance:

- Define anatomy and physiology
- Explain the levels of structural organization of the human body
- Name the systems of the body and briefly state the major functions of each system
- List the functions for humans to maintain life
- List the survival needs of humans
- Explain homeostasis and give at least three examples
- State the four types of cells
- State the function of the major organelles in cells
- State the four types of tissues and their major subclassifications
- Explain the major structural and functional importance of connective and muscle tissue
- Describe anatomical position and explain why it is important to know
- Use anatomical terminology to describe body directions, surfaces and planes of movement
- Locate major body cavities and state the major organs in each one

2. Demonstrate knowledge of and describe the major muscle groups, bones, and joints and understand their relationships in sufficient detail to comprehend their functions.

Potential Elements of the Performance:

- Bones:
  - Identify the subdivisions of the skeleton
  - List the functions of the skeletal system
  - List and describe the four major kinds of bones
  - Identify and name the bones of the skeleton
- Joints:
  - List and describe the different types of joints
  - Name, identify and state the function of the ligaments of the body
- Muscles:

- Explain the functions of the muscular system
  - Identify accurately the different types of body movement exhibited for specified muscles
  - Name and locate the major muscles of the human body (with origin and insertion points of specified muscles) on a chart, diagram, and state the action of each
  - State the importance of a nerve supply and exercise in keeping muscles healthy
3. Demonstrate an understanding of basic anatomy and physiology of the nervous system sufficiently to comprehend its role in controlling voluntary movement.
- Potential Elements of the Performance:
- State the general functions of the nervous system
  - Explain the structural and functional classification of the nervous system
  - State the function of neurons and neuroglia
  - State the types and functions of general sensory receptors
  - Explain the conduction of a nerve impulse
  - Explain a reflex arc
  - Identify the parts of the Central Nervous System and briefly state their functions
  - Describe the general structure of a peripheral nerve
  - State and identify the major parts of the Peripheral Nervous System
  - State the functions of specified nerves, plexuses and divisions of the PNS
4. Identify relevant surface landmarks and develop adequate palpatory skills to accurately demonstrate their location.
- Potential Elements of the Performance:
- Identify and palpate bones and significant bony landmarks on self and on another person
  - Identify and palpate major ligaments of the body on self and on another person
  - Identify and palpate major muscles, including origin and insertion of the human body on self and on another person
5. Demonstrate knowledge of and describe the basic structure of connective, muscle and epithelial tissue and define its role as it responds to mobility and activity
- Potential Elements of the Performance:
- Describe the structure of skeletal muscle
  - Define the following; endomysium, perimysium, epimysium, tendon, aponeurosis
  - Describe the structure and function of synovial membrane, ligaments, tendons, cartilage, synovial membrane and intervertebral disk
  - State the different membrane types and where they are located
  - Explain the functions of the integumentary system
  - State the function of major structures in the skin

6. Demonstrate an understanding of the basic structure and function of specified organs and systems.

Potential Elements of the Performance:

- Special Senses:
  - Identify and state the function of the structures of the eye
  - Define the following terms: accommodation, astigmatism, blind spot, cataract, emmetropia, glaucoma, hyperopia, myopia, presbyopia, refraction
  - Identify and state the function and structures of the ear
  - Briefly describe the location and function of the olfactory and taste receptors
- Endocrine System:
  - Describe the general role of the endocrine system
  - Define the following: hormone, target organ/tissue, endocrine gland, exocrine gland
  - Explain how endocrine glands are regulated
  - Identify specified endocrine glands on a diagram, chart or model
  - Explain the function of key hormones as they relate to the musculoskeletal system
- Other Systems:
  - Describe the basic anatomy and physiological function of the following systems: cardiovascular system, respiratory system, digestive system, urinary system and reproductive system

### III. TOPICS:

1. Structural Organization
2. Overview of Body Systems
3. Homeostasis
4. Important Terms
5. Cells and Tissue (Connective and Muscle Tissue Emphasized)
6. Integumentary System (Skin)
7. Skeletal System
8. Joints, Ligaments
9. Muscles
10. Surface Landmarking/Palpation Skills
11. Nervous System
12. Special Senses
13. Endocrine System
14. Other Systems (Cardiovascular, Respiratory, Digestive, Urinary, Reproductive)

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

Lippert, Lynn. (2011). Clinical Kinesiology and Anatomy. (5th. ed.) F.A. Davis Company.

Lippert, Lynn. (2011). Laboratory Manual for Clinical Kinesiology and Anatomy (3rd. ed.) F.A. Davis Company.

Cael, Christy. (2010). Functional Anatomy Flash Cards. Bones, Joints and Muscles. Lippincott Williams and Wilkins.

Marieb, Elaine. (2012). *Essentials of human anatomy and physiology*. (10<sup>th</sup> ed.) Benjamin Cummings/Addison Wesley Longman, Inc.

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

**Students in the OTA/PTA program must successfully complete this course with a minimum C grade (60%) as partial fulfillment of the OTA/PTA diploma.**

A combination of tests and assignments will be used to evaluate student achievement of the course objectives.

|                       |            |
|-----------------------|------------|
| Theory Quizzes (3)    | 45%        |
| In Class Work         | 5%         |
| Lab Skill Evaluations | 40%        |
| <u>Lab Book</u>       | <u>10%</u> |
| Total                 | 100        |

1. All tests/exams are the property of Sault College.
2. Students missing any of the tests or exams because of illness or other serious reason must notify the professor **BEFORE** the test or exam. The professor reserves the right to request documents to support the student's request.
3. Those students who have notified the professor of their absence that day will be eligible to arrange an opportunity as soon as possible to write the test or exam at another time. Those students who **DO NOT NOTIFY** the professor will receive a zero for that test or exam.
4. For assignments to be handed in, the policies of the program will be followed. For assignments not handed in by the due date, the mark received will be zero. Extensions will be granted if requested in writing at least 24 hours before the due date. There will be a deduction of one percent (of final grade) per day for every school day late with the permission of an extension. This means that an extension for 5 school days (1 week), will result in 5 percentage points deducted from the final grade.

The following semester grades will be assigned to students in post-secondary courses:

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

***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.

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. *It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be guaranteed admission to the room.*

## VII. COURSE OUTLINE ADDENDUM:

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