

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

<b>COURSE TITLE:</b>	Human Movement		
<b>CODE NO. :</b>	OPA104	<b>SEMESTER:</b>	1
<b>PROGRAM:</b>	Occupational Therapist Assistant and Physiotherapist Assistant Program		
<b>AUTHOR:</b>	Joanna MacDougall		
<b>DATE:</b>	Sept 2015	<b>PREVIOUS OUTLINE DATED:</b>	Sept 2014
<b>APPROVED:</b>	<i>“Marilyn King”</i>		<i>Aug. 2015</i>
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	<b>CHAIR OF HEALTH PROGRAMS</b>		<b>DATE</b>
<b>TOTAL CREDITS:</b>	4		
<b>PREREQUISITE(S):</b>	None		
<b>HOURS/WEEK:</b>	2 hour lecture, 2 hour lab		

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For additional information, please contact Marilyn King, Chair, Health Programs  
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This course addresses the following Vocational Learning Outcomes, Essential Employability Skills and General Education Requirements in the approved program standard (2008) for Occupational Therapist Assistant and Physiotherapist Assistant program of instruction leading to an Ontario College Diploma delivered by the Ontario Colleges of Applied Arts and Technology. (MTCU code 51502)

### ***Vocational Learning Outcomes***

<b>Check All That Apply</b>	<b>The graduate has reliably demonstrated the ability to:</b>
<b>X</b>	communicate appropriately and effectively, through verbal, nonverbal, written and electronic means, with clients, their families and significant others, occupational therapists, physiotherapists, other health care providers and others within the role of the therapist assistant participate in the effective functioning of interprofessional health care teams within the role of the therapist assistant.
<b>X</b>	establish, develop, maintain, and bring closure to client-centred, therapeutic relationships within the role of the therapist assistant. ensure personal safety and contribute to the safety of others within the role of the therapist assistant.
<b>X</b>	practice competently in a legal, ethical, and professional manner within the role of the therapist assistant. document and complete client records in a thorough, objective, accurate, and nonjudgmental manner within the role of the therapist assistant.
<b>X</b>	develop and implement strategies to maintain, improve, and promote professional competence within the role of the therapist assistant. perform effectively within the roles and responsibilities of the therapist assistant through the application of relevant knowledge of health sciences, psychosociological sciences, and health conditions.
<b>X</b>	perform functions common to both physiotherapy and occupational therapy practices that contribute to the development, implementation and modification of intervention/treatment plans, under the supervision of and in collaboration with the occupational therapist and/or physiotherapist. enable the client's occupational performance* by contributing to the development, implementation, and modification of intervention/treatment plans, under the supervision of and in collaboration with the occupational therapist. enable the client's optimal physical function by contributing to the development, implementation, and modification of intervention/treatment plans, under the supervision of and in collaboration with the physiotherapist.

### ***Essential Employability Skills:***

<b>Check All That Apply</b>	<b>The graduate has reliably demonstrated the ability to:</b>
<b>X</b>	<b><i>communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</i></b>
<b>X</b>	<b><i>respond to written, spoken, or visual messages in a manner that ensures effective communication.</i></b>
	<b><i>execute mathematical operations accurately.</i></b>
	<b><i>apply a systematic approach to solve problems.</i></b>
	<b><i>use a variety of thinking skills to anticipate and solve problems.</i></b>
	<b><i>locate, select, organize, and document information using appropriate technology and information systems.</i></b>
<b>X</b>	<b><i>analyze, evaluate, and apply relevant information from a variety of sources.</i></b> <b><i>show respect for the diverse opinions, values, belief systems, and contributions of others.</i></b>
	<b><i>interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.</i></b>
<b>X</b>	<b><i>manage the use of time and other resources to complete projects.</i></b>
<b>X</b>	<b><i>take responsibility for one's own actions, decisions, and consequences.</i></b>

**I. COURSE DESCRIPTION:**

This course will provide the student with a foundation in the principles of normal functional human movement. Essential terminology and concepts related to normal human movement, the articular system, components of movement, biomechanics, motor development and skill acquisition will be introduced. In addition, students will develop an understanding of normal growth and motor development, posture, balance, and body mechanics.

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

Upon successful completion of this course, the student will:

**1. Demonstrate an understanding of terminology and concepts related to normal movement of the human body.****Potential Elements of the Performance:**

- Identify and describe anatomical terms including: planes of movement, body surfaces and directions of movement
- Describe the following aspects of normal functional movement and where appropriate, normal changes across the lifespan:
  - a) motor
  - b) sensory
  - c) cognitive
  - d) perceptual
  - e) psychosocial
  - f) environmental
- Explain the following biomechanical concepts and the implications of these on normal functional movement.
  - a) weight
  - b) gravity
  - c) force
  - d) leverage
  - e) momentum
  - f) inertia
  - g) equilibrium
  - h) base of support
  - i) center of mass

**2. Describe the basic structure of connective tissue and muscle and function.****Potential Elements of the Performance:**

- Define the following; endomysium, perimysium, epimysium, tendon, aponeurosis
- Describe the structure and function of synovial membrane, ligaments,
- tendons, cartilage, synovial membrane and the intervertebral disk

3 **Demonstrate an understanding of the articular system and resulting movement.**

Potential Elements of the Performance:

- Identify and describe:
  - a) types of joints and associated movements including normal range of motion for each joint
  - b) directional terms (abduction, adduction, extension etc.)
- Identify the normal curvatures of the vertebral column and explain their normal development
- Identify and describe scoliosis, lordosis and kyphosis
- Identify normal age related changes of the articular system throughout the lifespan

4. **Demonstrate an understanding of the role of muscles in the production of movement.**

Potential Elements of the Performance:

- Define the following terms: origin, insertion, prime mover/agonist, antagonist, synergist, fixator
- Describe graded response, tetanus, muscle fatigue and muscle tone as they apply to skeletal muscle
- Identify and describe different types of muscle contractions:
  - a) isometric
  - b) isotonic – eccentric and concentric
  - c) isokinetic
- Describe and demonstrate the following types of movement: resistive, active, active assistive, passive
- Describe the length-tension relationship of muscle tissue (active and passive insufficiency)
- Demonstrate skill in manual muscle testing
- Identify normal age related changes of the muscular system throughout the lifespan

5. **Demonstrate an understanding of normal motor development throughout the lifespan.**

Potential Elements of the Performance:

- Identify normal motor milestones in gross and fine motor development
- Identify and explain the role of infant reflexes in normal motor development

6. **Demonstrate knowledge of normal posture and postural control throughout the lifespan.**

Potential Elements of the Performance:

- Explain how the sensory system (vestibular, vision, somatosensory systems) controls posture
- Describe balance strategies and their impact on postural control
- Identify and describe proper body alignment
- Identify normal age-related changes related to posture
- Describe how to maintain good posture and body alignment

7. **Demonstrate knowledge and skill in the application of good body mechanics.**

Potential Elements of the Performance:

- Identify, describe and demonstrate best practice of body mechanics required for work in health and human services
- Analyze and correct body mechanics of another

8. **Demonstrate knowledge of terminology and concepts related to normal gait patterns.**

Potential Elements of the Performance:

- Identify the normal functional sequence of gait throughout the lifespan
- Describe normal gait using correct terminology
- Identify factors affecting gait (vertical and horizontal displacement, width of base of support, lateral pelvic tilt, step length, stride length)

9. **Demonstrate knowledge of terminology and concepts related to the mechanics respiration.**

Potential Elements of the Performance:

- Identify the gross anatomy of the respiratory system
- Explain the functions of the components of the respiratory system
- Describe the normal movement patterns of the chest wall during respiration throughout the lifespan
- Describe normal breathing patterns and rates of respiration throughout the lifespan
- Describe and demonstrate diaphragmatic breathing

10. **Demonstrate knowledge of the process of motor learning.**

Potential Elements of the Performance:

- Identify and describe the three stages of motor learning (cognitive, associative and autonomous)
- Recognize the characteristics of the learner during each stage of learning
- Identify appropriate instructional strategies for each stage of learning
- Describe intrinsic and extrinsic feedback and the timing of providing such feedback

**III. TOPICS:**

1. Normal Functional Movement – Anatomic Planes, Movements
2. Joint and Soft Tissue Mobility
3. Muscle Physiology
4. Concepts of Movement
5. Normal Motor Development
6. Postural Control
7. Posture
8. Body Mechanics
9. Normal Gait
10. Chest Wall Movement

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

Marieb, Elaine. (2012). Essentials of Human Anatomy and Physiology. (10<sup>th</sup> ed.) Benjamin Cummings/Addison Wesley Longman, Inc.

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

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

**Students in the OTA and PTA program must successfully complete this course with a minimum C grade (60%), for subsequent courses in the OTA and PTA program which this course is a pre-requisite, and also as partial fulfillment of the OTA and PTA diploma.**

1. All tests/exams are the property of Sault College.

**Course Evaluation:** to be discussed by the professor during the first week of class.

<b>Online Quizzes</b>	<b>20%</b>
<b>Lecture Participation</b>	<b>10%</b>
<b>Lab Activities</b>	<b>20%</b>
<b>Tests (3x10% each)</b>	<b>30%</b>
<i>(NOTE: Lecture Participation and Lab Activities are completed and handed in as scheduled during lecture/lab)</i>	
<b>Final Exam – Written</b>	<b>20%</b>

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<b>Total</b>	<b>100%</b>
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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 prior to the test or exam, 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 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%	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.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

## 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 in D2L and on the portal form part of this course outline.