SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT
COLLEGE

COURSE OUTLINE

COURSE TITLE:	Human Movement		
CODE NO. :	OPA104	**SEMESTER:**	1
PROGRAM:	Occupational Therapist Assistant and Physiotherapist Assistant Program		
AUTHOR:	Joanna MacDougall		
DATE:	Sept 11	**PREVIOUS OUTLINE DATED:**	Sept 10
APPROVED:	"Marilyn King"		July 2011
	CHAIR OF HEALTH PROGRAMS		**DATE**
TOTAL CREDITS:	4		
PREREQUISITE(S):	None		
HOURS/WEEK:	2 hour lecture, 2 hour lab		

I. COURSE DESCRIPTION:

This course will provide the student with the principles of normal functional human movement. Essential terminology related to human movement, the articular system, components of movement and biomechanics will be introduced. Students will explore normal growth and motor development, posture, body mechanics, and the mechanics of respiration.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will:

1. Demonstrate knowledge and comprehension related to essential components and concepts of movement.
   Potential Elements of the Performance:
   - Describe anatomical terms including: planes of movement and body surfaces and directions
   - Describe essential components required for normal functional movement and their normal age-related changes:
     a)motor
     b)sensory
     c)cognitive
     d)perceptual
     e)psychosocial
     f)environmental
   - Explain basic biomechanical concepts required to understand 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
   - Discuss the implications of the above objectives on normal functional movement

2. Demonstrate knowledge and comprehension of normal mobility of joints and soft tissues, the concepts of applied muscle physiology and resulting movement.

   Potential Elements of the Performance:

   - Describe and demonstrate:
     a)types of joints and associated movement 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
   - Define the following terms relating to skeletal muscles: origin, insertion, prime mover, antagonist, synergist, fixator
   - Identify accurately the different types of body movement exhibited for specified muscles
   - Define graded response, tetanus, muscle fatigue and muscle tone as they apply to skeletal muscle
   - Describe and demonstrate the following types of muscle contractions:
     a) isometric
     b) isotonic – eccentric and concentric
     c) isokinetic
   - Briefly describe the effects of aerobic and resistive exercise on skeletal muscles
   - Describe and demonstrate the following types of movement: resistive, active, active assistive, passive
   - Describe the normal age related changes of joints and muscles and the implications on movement

3. Demonstrate knowledge and comprehension of the foundations for normal functional movement.

   Potential Elements of the Performance:

   - Identify milestones in normal motor development through the lifespan:
     a)gross motor development
     b)fine motor development
     c)normal age-related changes
   - Identify the normal stages of motor development (rolling, sitting, standing, walking etc.)
   - Describe infant reflexes and their role in normal motor development

4. Demonstrate knowledge and comprehension of normal posture and postural control and make application to clinical situations.
   Potential Elements of the Performance:
   - Relate biology to postural control:
     a)explain how the sensory system affects posture
     b)describe how the motor system impacts postural control
     c)discuss how the integration of sensory and motor control is essential for normal functional movement
   - Explain the purpose and benefit of positioning and proper body alignment
   - Describe the effects of poor posture/positioning on joints/muscles
   - Describe normal age-related changes related to posture
   - Demonstrate how to maintain proper spinal alignment
   - Demonstrate the ability to assist others to a variety of positions using good body alignment

5. Demonstrate application of body mechanics in a clinical setting.
   Potential Elements of the Performance:
   - Identify essential body mechanics required for work in health and human services
   - Demonstrate safe body mechanics in simulated situations in the lab
   - Demonstrate the ability to teach a client how to effectively move using correct body mechanics: from lying to sitting, from sitting to standing, lifting;
   - Analyze and correct body mechanics

6. Demonstrate comprehension of normal gait patterns.
   Potential Elements of the Performance:
   - Identify the normal functional sequence of gait, including ascending and descending stairs
   - Describe normal gait using correct terminology
   - List and describe factors affecting gait (vertical and horizontal displacement, width of base of support, lateral pelvic tilt, step length, stride length)
   - Describe normal age-related changes of gait

7. Demonstrate knowledge and comprehension of chest wall movement.
   Potential Elements of the Performance:
   - Describe the anatomy of the respiratory system
   - Explain the functions of the components of the respiratory system
   - Describe the normal movement patterns of the chest wall and normal age-related changes
   - Describe normal breathing patterns and rates
   - Describe diaphragmatic breathing

8. 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
11. Age Related Changes

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Marieb, Elaine. (2012). Essentials of Human Anatomy and Physiology. (10th 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.

Lippert, Lynn. (2011). Kinesiology Flashcards (3rd. ed.) F.A. Davis Company.

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.

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

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

Online Tests	**25%**
Lecture Participation	**10%**
Lab Activities	**10%**
Pop (unannounced) Quizzes	**25%**
(NOTE: Lecture/Lab Activities/Pop Quizzes are ONLY completed and handed in as scheduled during lecture/lab time – there will be no make up allowances for absences)	
Final Exam – Written	**30%**
Total	**100%**

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:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	
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.

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.