



**I. COURSE DESCRIPTION:**

This course will provide the student with a knowledge base of the principles of normal functional human movement. Students will explore the basis for normal body posture and movement, the factors involved and normal variables due to age, work environment, psychosocial impact. This course is best taken concurrently with OPA 103 (Human Movement) which together are a foundation for further courses in the OTA/PTA curriculum.

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

In general, this course addresses Vocational Learning Outcomes (cross-referenced with the Program Standards) in: communication skills (1, 8P, 8O), safety (1, 4, 8P, 8O), professional competence (1, 4, 8P, 8O), documentation skills (1, 4) and application skills (1, 4, 8P, 8O). It addresses all of the Generic Skills Learning Outcomes.

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

**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. (2003). Essentials of Human Anatomy and Physiology. (8<sup>th</sup> ed.) Benjamin Cummings/Addison Wesley Longman, Inc.

Lippert, Lynn. (2006). Clinical Kinesiology and Anatomy. (4th. ed.) F.A. Davis Company.

Lippert, Lynn. (2007). Laboratory Manual for Clinical Kinesiology and Anatomy (2nd. ed.) F.A. Davis Company.

Lippert, Lynn. (2007). Kinesiology Flashcards (2nd. 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.**

**A combination of tests and assignments will be used to evaluate student achievement of the course objectives. Value in terms of marks is placed on in class participation as well as independent learning activities. A description of the evaluation methods follows and will be discussed by the teacher within the first two weeks of class.**

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 Tests</b>	<b>25%</b>
<b>Lecture Activities</b>	<b>10%</b>
<b>Lab Activities</b>	<b>25%</b>

*(NOTE: Lecture/Lab Activities are ONLY completed and handed in as scheduled – there will be no make up allowance for absences)*

<b>Midterm Bellringer Test</b>	<b>15%</b>
<b>Final Exam – Written</b>	<b>25%</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	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:** 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.

***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.***

#### VI. SPECIAL NOTES:

##### Student Portal

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

##### 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. Admission to the classroom for late arrivers will at the discretion of the professor.*

##### Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade "C", (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Electronic Devices in the Classroom

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.