

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**COURSE OUTLINE**

**COURSE TITLE:** Physical Agents  
**CODE NO. :** OPA109 **SEMESTER:** 2  
**PROGRAM:** Occupational Therapist Assistant/Physiotherapist Assistant  
**AUTHOR:** Joanna MacDougall  
**DATE:** Jan/10 **PREVIOUS OUTLINE DATED:** Jan/09  
**APPROVED:** "Marilyn King" Jan/10

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**CHAIR OF HEALTH PROGRAMS**

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**DATE**

**TOTAL CREDITS:** 3  
**PREREQUISITE(S):** OPA100, OPA101, OPA102, OPA103, OPA104, OPA105, PSY102  
**HOURS/WEEK:** 1 lecture and 2 hour lab

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*For additional information, please contact the Chair, Health Programs*  
*School of Health and Community Services*  
*(705) 759-2554, Ext. 2689*

**I. COURSE DESCRIPTION:**

This course will provide the student with a knowledge base and skills required to safely and effectively apply common therapeutic modalities used in physiotherapy and occupational therapy. Theory of less common therapeutic modalities will be introduced to the student. The student will also practice documentation skills required of the OTA/PTA related to the application of the therapeutic modalities.

**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, 2, 6, 8P, 8O, 9P, 12P, 12O), safety (1, 2, 4, 8P, 9P, 12P, 12O), professional competence (1, 2, 4, 5, 6, 7, 8P, 9P, 12P, 12O), documentation skills (1, 4, 5, 6) and application skills (1, 2, 4, 6, 8P, 9P, 12P, 12O). It addresses all of the Generic Skills Learning Outcomes.

Upon successful completion of this course, the student will:

1. Demonstrate an understanding and application of cellular biology.
  - Potential Elements of the Performance:
    - Describe basic cell structure and function including membrane transport mechanisms, electrical properties and cellular metabolism
    - List and describe the four categories of body tissues
    - Describe the events of cellular injury and adaptations
      - Identify the common causes of inflammation and factors which influence recovery (physical and psychological)
      - List and describe the three phases of healing: inflammatory phase, proliferation phase, maturation phase
2. Demonstrate an understanding of mechanisms and theories of pain.
  - Potential Elements of the Performance:
    - Explain acute versus chronic pain
    - Explain the gate control theory of pain
    - Explain the opiate mediated control of pain
3. Demonstrate knowledge and skills related to land marking relevant surface anatomy and appropriate draping skills required to expose common anatomical landmarks.
  - Potential Elements of the Performance:
    - Identify with accuracy relevant anatomical landmarks on self and on another person
    - Demonstrate appropriate draping skills while identifying surface anatomy and applying therapeutic agents

4. Demonstrate an understanding of the roles/responsibilities of the OTA/PTA in the application of physical agents.  
Potential Elements of the Performance:
  - Describe and demonstrate professional behaviour expected of an OTA/PTA while carrying out components of a treatment plan that includes the delivery of physical agents
  - Explain the roles/responsibilities of the OTA/PTA in the application of physical agents
  - Identify the limitations of the OTA/PTA in the application of physical agents
  - Observe and recognize significant departures from the expected patterns of patient response to the physical agents and report immediately to the Registered Physiotherapist
  
5. Demonstrate knowledge and skills related to body mechanics.  
Potential Elements of the Performance:
  - Explain the importance of and demonstrate proper body mechanics during the set up and application of physical agents
  
6. Demonstrate an understanding of the effects, benefits and indications for various physical agents.  
Potential Elements of the Performance:
  - Discuss Motion Restrictions and the role of physical agents in the treatment of such
  - Discuss Muscle Tone and role of physical agents in the treatment of such
  - Identify physical agents used in physiotherapy and provide a general description of the principles of each modality
  - Explain the effects, benefits and indications for the following physical agents:  
Thermal Agents – cryotherapy, heat, paraffin bath  
Ultrasound and phonophoresis  
Electrical Currents – TENS, NMES, Interferential, iontophoresis  
Diathermy  
Laser  
Traction and Compression  
Hydrotherapy  
Dynamometry  
Biofeedback
  - Explain normal and abnormal values of blood pressure and demonstrate accurate measurement of blood pressure
  
7. Demonstrate knowledge of and describe the contraindications and precautions of various physical agents.  
Potential Elements of the Performance:
  - List and explain the contraindications and precautions of the physical agents listed above
  - Identify and implement common precautions (positioning, interfaces, monitoring during procedures, aseptic procedures)
  - Recognize an adverse reaction and react appropriately

8. Demonstrate the skills required to competently apply various physical agents, as required by a supervising Physiotherapist or Occupational Therapist.  
Potential Elements of the Performance:
  - Safely and accurately carry out tasks related to the application of specific physical agents under the direction and guidance of a Registered Physiotherapist or Occupational Therapist
  - Recognize liability issues that may arise with the application of these modalities
9. Demonstrate competence in the care and maintenance of all equipment.  
Potential Elements of the Performance:
  - Correctly assemble and prepare for the application of each physical agent as directed by the Registered Physiotherapist/Occupational Therapist, and the necessary clean up
  - Explain and demonstrate an understanding of the care and maintenance of equipment, including physical agents (also include preventative maintenance plan and follow-up)
10. Demonstrate documentation skills required of the OTA/PTA related to the application of therapeutic modalities.  
Potential Elements of the Performance:
  - Accurately document the application of all physical agents, making note of any significant departures from the expected patterns of patient response, and any actions taken, and report immediately to the Registered Physiotherapist/Occupational Therapist
11. Demonstrate the ability to communicate to and reassure patients/clients the effects, benefits and indications/contraindications for various physical agents.
  - Describe in lay terms the effects and benefits of the physical agents listed above.
  - List and describe in lay terms the indications of the physical agents listed above
  - Appropriately inquire (in lay terms) regarding contraindications of the physical agents listed above
  - Reassure patients regarding any feelings of anxiety regarding the receipt of the physical agents listed above

### III. TOPICS:

1. Cellular Biology and Cellular Injury
2. Pain
3. Landmarking Surface Anatomy
4. Roles/responsibilities of the OTA/PTA
5. Body Mechanics
6. Effects, Benefits and Indications of Physical Agents
7. Contraindications and Precautions
8. Safety and Liability
9. Care and maintenance of equipment
10. Documentation

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

Marieb, Elaine. (2006). Essentials of Human Anatomy and Physiology. (9<sup>th</sup> ed.) Benjamin Cummings/Addison Wesley Longman, Inc. (from 1<sup>st</sup> semester)

Course Manual and Lab Manual (provided in class)

Students must purchase a 2 or 3 inch tensor bandage. (available in most pharmacies)

#### 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. Course Evaluation

Online Tests	20%
Test #1 (Written)	10%
Test #2 (Written)	15%
Test #3 (Written)	15%
Lab Tests (7 x 5%)	35%
Surface Anatomy Quiz	5%
Total	100%

2. All tests/exams are the property of Sault College.
3. 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.
4. 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.
5. 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 if you requested an extension for 5 school days (1 week), 5 percentage points will be 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 (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.

***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:**

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.

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.

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.

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.

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.

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. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to <https://my.saultcollege.ca>.

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.

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.