

## **KIN 423 Fall 2007 Therapeutic Modalities**

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Office Hours: 10-12 Tuesdays

### **Required Text:**

Prentice, WE, Fifth Edition (2003). *Therapeutic Modalities: For Sports Medicine and Athletic Training*. Madison, WE: McGraw-Hill Publishing.

Prentice, William, Fifth Edition (2003). *Therapeutic Modalities For Sports Medicine and Athletic Training: Laboratory Manual*. Madison, WE: McGraw-Hill Publishing.

### **Additional References:**

Starkey, C, Third Edition (2004). *Therapeutic Modalities*. Philadelphia, PA: F.A. Davis Company

Articles and papers from professional journals in sports medicine.

### **Course Description:**

Therapeutic modalities used to manage athletic injuries and their indications and contraindications. Rationale for and techniques of using thermal and electrical modalities for athletic injuries.

### **Prerequisites:**

Physics or equivalent and admission to the athletic training specialization

### **Course Objectives:**

1. Identify the mechanisms of injury and the process of healing and integrate the knowledge into protocols for injury rehabilitation.
2. Acquire an understanding for the physics, physiological effects, indications and contraindication of the various therapeutic modalities.
3. Determine which therapeutic modality is the most effective for any given athletic injury.
4. Demonstrate the proper application of each therapeutic modality.
5. Develop and implement a rehabilitation program that includes appropriate therapeutic modalities.

## Student Responsibilities

**Angel Web Site:** We will use angel as a course management tool. YOU ARE RESPONSIBLE FOR CHECKING THIS SITE on a regular basis. I recommend checking it twice a week. It will contain information such as your grades, notes, and all other course materials. You can access the site by going to the following site <http://angel.msu.edu>. You will need your pilot ID and password to login.

**Attendance & Participation:** This class is organized so that attendance and participation are essential to the success of each student. Students are expected to fully participate in all class sessions. Students will be required to work independently and collaboratively to complete various assignments during class.

**Readings:** Students will be expected to complete all assigned readings prior to each class session. The assigned readings will be the daily topic of lecture and in-class discussions.

**Cell Phone Policy:** It is understood that cell phones are a part of every day life for most college students. As students you are permitted to have a cell phone in class with you, but you are to have the cell phone off during the class session. If your cell phone is to ring, vibrate, or disrupt class in any way five points will be deducted from your participation grade. If there are extreme situations that you must have your cell phone on during class you are to inform the instructor immediately.

**Academic Dishonesty:** The Michigan State University policy on academic dishonesty is as follows and can be found on page 81 of the student handbook and resource guide section 1.00-1.06. Any student who commits any form of academic dishonesty will be dealt with on an individual basis (from receiving a 0.0 on the assignment to receiving a 0.0 for the class). Additionally any form of academic dishonesty will be reported to the department, college, and the athletic training interview committee.

<http://www.vps.msu.edu/SpLife/default.pdf>

**The office of the Ombudsman describes Academic dishonesty** at Michigan State University as a conduct that violates the fundamental principles of truth, honesty, and integrity. The following conduct is specifically cited in the General Student Regulations 1.00-1.06 and can be found on page 81 of the student handbook.

<http://www.vps.msu.edu/SpLife/default.pdf>

- Supplying or using work or answers that are not one's own.
- Providing or accepting assistance with completing assignments or examinations.
- Interfering through any means with another's academic work
- Faking data or results.

**Honor Code:** This class has an honor code that all students are expected to follow. The honor code is as follows “*On my honor I pledge that this work is my own and I did not receive any unauthorized help nor am I aware of any infraction of the honor code.*” Students are to write out and sign the honor code on all work that is to be submitted for grading. Failure to write out the honor code will result in the work not being graded. If a student feels that they or someone else has broken the honor code they are to write out the honor code, but not sign it. The instructor will consult them and if necessary further action will be taken.

### Grading Criteria:

		<b>Scale</b>	
Exam 1	100	92-100	4.0
Exam 2	100	85-91	3.5
Final Exam	200	80-84	3.0
Practical	100	75-79	2.5
Attendance/Signed Syllabus	10	70-74	2.0
Participation	10	65-69	1.5
Assignments/Quizzes	100	60-64	1.0
Abstracts	60 (20 each)	<60	0.0
Total	680		

#### **Exams** (400 total points)

There will be two exams and a final exam. Each exam is worth 100 points; the final will be worth 200 points. The final will consist of 50% new material and 50% cumulative.

#### **Practical** (100 points)

There will be a practical given at the end of the semester. Students will schedule a time with the instructor to complete the practical. Students will be presented with different case situations and asked to select and administer the best modality to use at that time in the healing phase. Additionally students will be asked questions about the different modalities and their use. Students are responsible for providing a subject (not a person in this class).

#### **Makeup Exams**

Absolutely no makeup exam/quizzes will be given unless a valid medical excuse is presented and verified by me with your physician or unless notification of a conflict with religious observance, scheduled class field trip, or intercollegiate athletic participation is provided at least 2 weeks in advance of the date. Any makeup that is given must be taken within 48 hours of normally scheduled exam.

#### **Assignments/Quizzes**

There will be at least 12 assignments, each worth 10 points. The top ten will be used to form the assignment/quiz grade. Any at home assignments will be due at the beginning of class on the date due.

***Project***

Students will be responsible for developing a modalities toolbox. This project is to help students study for upcoming exams. Instructions about project will be given during class.

***Clinical Proficiency***

The student will synthesize information s/he obtains in a patient interview and physical examination, to determine the indications, contraindications and precautions for the selection, patient set-up, and evidence-based application of infrared, electrical stimulating, acoustic, and mechanical modalities. The student will appropriately apply the modalities. Effective lines of communication should be established to elicit and convey information about the patient's status and the prescribed exercise(s). While maintaining patient confidentiality, all aspects of the exercise plan should be documented using standardized record-keeping methods.

**TENTATIVE COURSE OUTLINE**

This is a tentative course outline. The instructor reserves the right to alter this outline.

<b>Week</b>	<b>Topic</b>	<b>Assignments/Readings</b>
1/10	Introductory Activities The Basic Science of Modalities	Chapter 1
1/17	The Healing Process Use of Therapeutic Modalities to Effect the Healing Process	Handouts & Chapter 2 Signed Syllabus due 1/17
1/24	Neurophysiology	Websites
1/31	The Physiology and Psychology of Pain	Websites
2/7	Managing Pain with Therapeutic Modalities	Chapter 3
2/14	Development and Delivery of Treatment Protocol	Handouts
2/21	Test Thermal Modalities (Heat & Cold)	Chapter 4
2/28	Thermal Modalities (Heat & Cold)	Chapters 4 & 5
3/7	Spring Break	
3/14	Ultrasound	Chapter 5
3/21	Thermal Modalities (Shortwave and Microwave Diathermy) Test	Chapters 6 & 7
3/28	Basic Principles of Electricity	
4/4	Electrical Stimulating Currents Clinical Application of Electrical Agents	Chapter 8 & Handouts
4/11	Iontophoresis	Chapter 9
4/18	Mechanical Modalities	Chapters 10, 11, 12
4/25	Other Modalities	Chapters 13, 14, 15 & Handouts
5/1	Final Exam 7:45-9:45	

**CAATE Competencies and proficiencies covered in this class:**

- TM-C1 Describe the physiological and pathological processes of trauma, wound healing and tissue repair and their implications on the selection and application of therapeutic modalities used in a treatment and/or rehabilitation program.
- TM-C2 Explain the principles of physics, including basic concepts associated with the electromagnetic and acoustic spectra (e.g., frequency, wavelength) associated with therapeutic modalities.
- TM-C3 Explain the terminology, principles, basic concepts, and properties of electric currents as they relate to therapeutic modalities.
- TM-C4 Describe contemporary pain-control theories.
- TM-C5 Describe the role and function of the common pharmacological agents that are used in conjunction with therapeutic modalities
- TM-C6 Explain the body's physiological responses during and following the application of therapeutic modalities.
- TM-C7 Describe the electrophysics, physical properties, biophysics, patient preparation and modality set-up (parameters), indications, contraindications, and specific physiological effects associated with commonly used therapeutic modalities.
- TM-C8 Identify appropriate therapeutic modalities for the treatment and rehabilitation of injuries and illness.
- TM-C9a Describe and interpret appropriate measurement and assessment procedures as they relate to the selection and application of therapeutic modalities.
- TM-C9b Interpret objective measurement results as a basis for developing individualized therapeutic modality application and set-up (parameters).
- TM-C9c Interpret the results of injury assessment and determine an appropriate therapeutic modality program to return the patient to physical activity.
- TM-C9d Determine the appropriate therapeutic modality program and appropriate therapeutic goals and objectives based on the initial assessment and frequent reassessments.
- TM-C9e Determine the criteria for progression and return to activity based on the level of functional outcomes.
- TM-C9f Describe appropriate methods of assessing progress when using therapeutic modalities and interpret the results.

TM-C9h Describe appropriate medical documentation for recording progress in a therapeutic modality program.

TM-C10 Identify manufacturer's, institutional, state, and federal standards for the operation and safe application of therapeutic modalities.

TM-C11 Identify manufacturer's, institutional, state and federal guidelines for the inspection and maintenance of therapeutic modalities.

TM-P1 Assess patient to identify indications, contraindications, and precautions applicable to the application of therapeutic modalities.

TM-P3 Inspect the therapeutic modalities and treatment environment for potential safety hazards.

TM-P4 Position and prepare the patient for the application of therapeutic modalities.

TM-P5 Select and apply appropriate therapeutic modalities according to evidence-based guidelines.

Syllabus Agreement  
Due by January 17 2007

I have located, downloaded, and reviewed the syllabus for KIN 423 located at the course angel site. Any questions I have now and in the future regarding this syllabus can be directed to the instructor.

Print Name: \_\_\_\_\_

Student's Signature: \_\_\_\_\_

Date: \_\_\_\_\_