

**GEORGE MASON UNIVERSITY**  
**School of Recreation, Health and Tourism**

**ATEP 350 — Therapeutic Modalities (3) Fall 2012**

DAY/TIME:	M/W 9-10:15am	LOCATION:	Bull Run Hall 257
INSTRUCTOR:	Benjamin Goerger, PhD, ATC	EMAIL ADDRESS:	bgoerger@gmu.edu
OFFICE LOCATION:	Bull Run Hall 210A	PHONE NUMBER:	703-993-7118
OFFICE HOURS:	M/W 12-1pm or By Appt.	FAX NUMBER:	703-993-2025
SCHOOL WEBSITE:	www.rht.gmu.edu	COURSE WEBSITE:	mymason.gmu.edu

**PRE/CO-REQUISITES**

**Pre-requisites:** Formal acceptance to the professional phase of the ATEP; ATEP 150, 180, 250, 255, 256, 260, 265, 266, 270; BIOL 124, 125; HEAL 110, 230; PHED 300

**Co-requisites:** Concurrent enrollment in ATEP 355 and 356

**COURSE DESCRIPTION**

Study of the physical principles, physiological effects, indications and contraindications of therapeutic modalities used in athletic training. Also covers indications, contraindications, physiological effects, special programs, and resistance methods used in the prevention and rehabilitation of athletic injuries.

**COURSE OBJECTIVES**

At the completion of this course students should be able to:

1. Describe physiological effects of therapeutic modalities;
2. Identify therapeutic modalities used in athletic training;
3. Describe effects of electricity on the muscular, skeletal, circulatory and nervous system;
4. Describe the therapeutic effects of electricity on soft tissue injuries;
5. Describe effects of ultrasound on the muscular, skeletal, circulatory and nervous system;
6. Describe the therapeutic effects of ultrasound on soft tissue injuries;
7. Describe the effects of mechanical and manual therapy techniques on the muscular, skeletal, circulatory and nervous system;
8. Describe the therapeutic effects of mechanical and manual therapy on soft tissue injuries;
9. Describe the effects of light therapy on the muscular, skeletal, circulatory and nervous system;
10. Describe the therapeutic effects of light therapy on soft tissue injuries;
11. Describe the therapeutic effects of emergent therapeutic modalities;
12. Identify the indications and contraindications of therapeutic modalities; and
13. Demonstrate an appreciation for and ability to apply evidence-based clinical practices.

**COURSE OVERVIEW**

This didactic course will focus on the development of cognitive competencies necessary for the safe, effective, and evidenced-based application of therapeutic modalities in a physically active patient population.

### **Attendance**

Students are expected to be on time, attend all class meetings and be prepared for in class assignments and projects. Excused absences include the following: illness (must bring a receipt or note from a doctor), family death, athletic/academic event (contact instructor in advance), and others at the discretion of the instructor. For known upcoming absences, students must contact the instructor at least one week in advance to the missed class to make up work. In the case of illness or some other unforeseen absence, the student must contact the instructor via e-mail or telephone. At the next attended class meeting the student will discuss material that is to be completed.

***Students will have one week from the excused absence to complete any missed assignments.*** It is the student's obligation to pursue any make-up work.

### **Technology Use During Class**

As per GMU policy, all sound emitting technology is required to be turned off during the class meeting time. Additionally, *no laptop computers* will be permitted for use during class time; the exceptions are for use during presentations/projects, and technology deemed as necessary by the Office of Disability Services. Students utilizing various technology devices during class will be asked to leave class and will not be permitted to complete course work or receive any points for assignments that day.

### **E-mail Correspondence**

Only messages that originate from a George Mason University address will be accepted.

Please note that e-mail is a wonderful tool for brief communication of ancillary matters, but is a poor substitute for in-person discussion of detailed matters. Therefore, to make communication more effective, e-mail correspondence from students should be limited to brief clarification of matters related to the class schedule, to receive confirmation of receipt of an assignment, to schedule a meeting, to notify the instructor of problems accessing materials on the course website, or to notify the instructor of an anticipated or unanticipated absence (to be followed by in-person discussion prior to or following the class meeting time). All other communication including clarification of information presented in lecture, questions regarding assignments, questions regarding grades, and all other matters should be addressed with the instructor in-person during office hours or during a scheduled meeting.

As a future health care practitioner, the ability to present yourself and communicate in a professional manner is essential, including the use of e-mail. The following is an appropriate professional format that should be followed for this class, as well as any other instructors/ACIs:

*(Beginning salutation)* Dear Dr./Mr./Mrs. *Last Name*

*(Text body)* I have a question regarding...

*(Ending Salutation)* Regards/Respectfully/Sincerely,

*(Your name)* *First and Last Name*

### Accreditation Standards

Upon completion of this course, students will meet the following Commission on Accreditation of Athletic Training Education (CAATE) competencies and proficiencies:

Code	Competency
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.
TM-P6	Document treatment goals, expectations, and treatment outcomes.
TM-CP1	Synthesize information obtained 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 therapeutic modalities for acute and chronic injuries. The student will formulate a progressive treatment and rehabilitation plan and appropriately apply the modalities. Effective lines of communication should be established to elicit and convey information about the patient's status and the prescribed modality(s). While maintaining patient confidentiality, all aspects of the treatment plan should be documented using standardized record-keeping methods.
TM-CP1.1	Infrared Modalities
TM-CP1.2	Electrical Stimulation Modalities
TM-CP1.3	Therapeutic Ultrasound
TM-CP1.4	Mechanical Modalities
TM-CP1.5	Massage and other Manual Techniques

### REQUIRED READINGS

1. Knight KL & Draper DO. *Therapeutic modalities: The art and science*. Lippincott, Williams & Wilkins, 2008.

*\*\*Students will be notified of additional readings for each section\*\**

#### *ADDITIONAL READINGS THAT MAY BE OF HELP (\*\*Not Required\*\*)*

1. Denegar CR, Saliba E, & Saliba S. *Therapeutic modalities for musculoskeletal injuries*. Human Kinetics, 2010.
2. Prentice WE. 2011. *Therapeutic Modalities In Rehabilitation*. McGraw-Hill, 2011.
3. Starkey, C. *Therapeutic Modalities*. F.A. Davis Company, 2004.

### EVALUATION

Students will be evaluated on content standards (knowledge gained). Content standards will be assessed via projects, written quizzes and exams.

### Article Reviews

Throughout the semester you will be assigned various articles for review. You will write a reflective summary that is typed (12pt, Times New Roman font), single spaced with the AMA citation listed at the top of the page along with your first/last name, course number and date. Reviews should not exceed one page in length. An outline describing the information to be included in each article review will be provided.

**Quizzes**

Quizzes will be given during the first 10 minutes of class on the dates indicated on the Course Calendar. *Please note that the Course Calendar may change at the discretion of the instructor, and students will be promptly notified of any changes.* This will be a brief multiple choice and true-false assessment of your knowledge from the reading. *You are required to bring a scantron to each examination.* If you are not present in class before the instructor is done handing out the quiz to begin taking, you will be considered late and will not be allowed to complete the quiz.

**Examinations:**

Three examinations, not including a comprehensive final exam, will be administered in class. The format of these examinations may be multiple choice, true/false, short answer, matching, essay and fill in the blank type questions. Each of the examinations will test the material covered in the assigned reading and during the prior class meetings.

**Evidence Based Clinical Review**

The purpose of this assignment is to provide an understanding of relevant research literature that justifies why and how therapeutic modalities are applied to patients. Using research based evidence; the clinician makes practice decisions based on the best available research evidence, clinical experience and a patient's values. You will be required to write a research paper discussing the relevant research pertaining to the management of an injury you observed in your clinical experience this semester.

The case report should present pertinent information as to the condition the patient experienced, any signs and symptoms that would qualify the use of a therapeutic modality, a discussion of the rehabilitation goals, and a description of the therapeutic modalities used to achieve the goals. The report should also include a discussion as to the appropriate use of the therapeutic modalities and evidence for/against the use of these modalities. This discussion of any other possible modalities that were not used, but would have been appropriate should be included. This section should include references from peer reviewed journal articles to support any argument you make, and present any alternative theories. There are a number of databases on the web available to support evidence-based clinical practice through peer reviewed journals. Students are encouraged to use databases such as PubMed, CINAHL and SPORT Discuss to identify pertinent resources. Students are also strongly encouraged to explore the Cochrane (<http://www.cochrane.org/reviews/clibintro.htm>) and The Physiotherapy Evidence Database (<http://www.pedro.fhs.usyd.edu.au/index.html>) to identify pertinent systematic reviews and graded clinical trials. These sites also provide excellent tutorials related to assessing the methodological quality of clinical trials. The paper must be in American Medical Association format (Journal of Athletic Training) and be supported by a sufficient number of peer reviewed scholarly sources.

The topic for the Case Report must be submitted to the instructor and approved by the date indicated on the topics outline. A detailed outline of the formatting of the Case Report will be provided for students.

**Class Participation:**

Attending, being prompt, and active participation are important components of this course. Therefore, students will earn credit for attending and contributing to the class.

### MAKE UP WORK

Students who are absent or who arrive late without an official university or a medical doctor's excuse will not be permitted to participate in the class activities for credit the day of the absence or tardy event. There will be no make-up quizzes or exams unless an excused absence has been warranted. Students who miss an examination, quiz or other class activity because of an excused absence must complete the assignment *within a week of the excused absence*. It is the student's obligation to pursue any make-up work.

### LATE ASSIGNMENTS

All work is due at the beginning of class time on the indicated day. **NO LATE WORK WILL BE ACCEPTED!**

### GRADING: Course Grading Scale

ASSESSMENT METHOD	NUMBER	POINTS EACH	POINTS TOTAL
Class Participation	24	2	48
Article Review	5	20	100
Quizzes	17	5	85
Written Examinations	4	75	300
Evidence Based Clinical Review	1	150	150
<b>TOTAL</b>	—	—	<b>683</b>

The student's final letter grade will be earned based on the following scale:

<b>A:</b>	635.2 – 683 pts	(93%)
<b>A-:</b>	614.7– 634.1 pts	(90%)
<b>B+:</b>	594.2– 517.99 pts	(87%)
<b>B:</b>	566.9 – 584.1 pts	(83%)
<b>B-:</b>	546.4 – 566.8 pts	(80%)
<b>C+:</b>	525.9 – 546.3 pts	(77%)
<b>C:</b>	498.5 – 525.8 pts	(73%)
<b>C-:</b>	478.1 – 498.4 pts	(70%)
<b>D:</b>	430.3 – 478.0 pts	(63%)
<b>F:</b>	< 430.2 pts.	

**ATEP 350 TENTATIVE COURSE SCHEDULE: Faculty reserves the right to alter the schedule as necessary**

<b>ATEP 350 - Therapeutic Modalities - Topical Outline</b>				
<b>**Schedule Subject to Change at Discretion of Instructor**</b>				
<b>Day</b>	<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Assignments (Due in Class on Date Assigned)</b>
1	Aug 27	Course Introduction		
2	Aug 29	Lecture 1: Introduction to Therapeutic Modalities	Ch 1, Ch 2	Reading Quiz: Ch 1, Ch 2
3	Sep 05	Lecture 2: Tissue Response to Injury & Healing	Ch 4, Ch 6	Reading Quiz: Ch 4
4	Sep 10	Lecture 2: Tissue Response to Injury & Healing		Reading Quiz: Ch 6
5	Sep 12	Lecture 3: Pain	Ch 7, Ch 8	Reading Quiz: Ch 7
6	Sep 17	Lecture 3: Pain		Reading Quiz: Ch 8
7	Sep 19	Lecture 4: Care of Acute Orthopedic Injuries	Ch 5	Reading Quiz: Ch 5
8	Sep 24	Lecture 5: Developing a Treatment Protocol	Ch 3	Reading Quiz: Ch 3
9	Sep 26	Review/Catch Up		
10	Oct 01	Written Examination #1		
11	Oct 03	Lecture 6: Thermal Modalities	Ch 11, 13 Article #1	Reading Quiz: Ch 11
12	Oct 09	Lecture 6: Thermal Modalities	Ch 13	Reading Quiz: Ch 13
13	Oct 10	Lecture 6: Thermal Modalities		Article Review #1
14	Oct 15	Lecture 7: Therapeutic Ultrasound	Ch 15 Article #2	Reading Quiz: Ch 15
15	Oct 17	Lecture 7: Therapeutic Ultrasound		
16	Oct 22	Review/Catch Up		Article Review #2
17	Oct 24	Written Examination #2		
18	Oct 29	Lecture 8: Electrical Currents and Physiologic Responses	Ch 9 Article #3	Reading Quiz: Ch 9
19	Oct 31	Lecture 8: Electrical Currents and Physiologic Responses		
20	Nov 05	Lecture 9: Use of Electrical Stimulating Currents	Ch 10	Reading Quiz: Ch 10 Article Review #3 Case Report Topic Due to Instructor
21	Nov 07	Lecture 10: Iontophoresis	Article #4	
22	Nov 12	Lecture 11: Electromagnetic Modalities		
23	Nov 14	Review/Catch Up		Article Review #4
24	Nov 19	Written Examination #3		
25	Nov 26	Lecture 12: Intermittent Compression	Article #5	
26	Nov 28	Lecture 13: Therapeutic Massage	Ch 17	Reading Quiz: Ch 17 Case Report Due
27	Dec 03	Lecture 14: Traction	Ch 18	Reading Quiz: Ch 18
28	Dec 05	Review/Catch Up		Article Review #5
FINAL	Dec 17	Comprehensive Final Examination 7:30am-10:15am		

## COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

### *Student Expectations*

- Students must adhere to the guidelines of the George Mason University Honor Code [See <http://academicintegrity.gmu.edu/honorcode/>].
- Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See <http://ods.gmu.edu/>].
- Students must follow the university policy for Responsible Use of Computing [See <http://universitypolicy.gmu.edu/1301gen.html>].
- Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
- Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.
- Students are expected to exhibit professional behaviors and dispositions at all times.

### *Campus Resources*

- The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See <http://caps.gmu.edu/>].
- The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See <http://writingcenter.gmu.edu/>].

### *School of Recreation, Health, and Tourism*

- For additional information on the College of Education and Human Development, School of Recreation, Health, and Tourism, please visit our website [See <http://rht.gmu.edu>].



## **Student Acknowledgement of Syllabus**

By signing the provided sheet, I attest to the following:

- I have read the course syllabus for ATEP 350 in its entirety, and I understand the policies contained therein. This syllabus serves as an agreement for ATEP 350 between the instructor and me.
- I have a clear understanding of the due dates for assignments and examinations, and I accept responsibility for the material.
- I understand the excused absence policy and acknowledge that it is my responsibility to inform the instructor of all excused absences in advance and my responsibility to pursue make-up work.
- I am aware that failure to submit assignments by the dates assigned will result in no points awarded, as late work will not be accepted.
- I understand the instructor reserves the right to alter the provided schedules as necessary and I am responsible for the assignments and examination dates for the most current version of the syllabus schedule.
- I accept responsibility for reading announcements that are sent to me via e-mail through Blackboard.

(For Your Reference)