



Meeting days: Mondays	Instructor: Susan Ganz, PhD, ATC
Meeting times: 8:00 am – 9:30 am	Cell phone: 1-619-701-2567
Meeting location: Mission Valley 309	E-mail: sganz@pointloma.edu
Any additional info:	Office hrs: TBA
Final Exam:	Canvas Login: CANVAS

PLNU Mission: To Teach To Shape To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

COURSE DESCRIPTION and AIM

This course aims to provide you with in-depth study and eventual mastery of the knowledge and skills you will need as a health professional to apply the appropriate therapeutic modalities based on the recent evidence to treat musculoskeletal pathologies in an athletic population. Students will learn how to select and apply the following therapeutic modalities based on sound judgment and evidence:

- ✓ **Thermal Modalities**
- ✓ **Electrical Modalities**
- ✓ **Therapeutic Ultrasound**
- ✓ **Manual Therapies**
- ✓ **Biofeedback**

To be successful in this course, students must synthesize the most current evidence presented in class, lecture and through written research projects and apply it in the clinical setting. This means that students will be called to be active in their learning, always seeking the best evidence and constantly questioning their application of therapeutic modalities. Where possible, we will do activities in class or have study sessions to improve your retention. Graded assignments (e.g., tests, quizzes, assessment outlines and review of literature paper) will be used to help students identify, recall, synthesize and apply the key concepts in therapeutic modalities

PROGRAM LEARNING OUTCOMES

1. To prepare students to demonstrate competency in interpreting evidence-based research and improving clinical standards and practice through clinical question development and research methodology
2. To prepare students to develop expertise in the athletic training domains through an integrative experiential clinical model
3. To equip students with appropriate knowledge and educational foundation required for an entry-level Certified Athletic Trainer
4. To prepare students to establish and understand the importance of inter-professional relationships, while collaborating with other health care professionals to become effective communicators
5. To prepare students to demonstrate preparation, knowledge and skill in the delivery of comprehensive health care to a diverse set of patients with musculoskeletal injuries and conditions and illnesses in a distinctly moral and ethical manner, integrating Christian faith with clinical practice.

STUDENT LEARNING OUTCOMES

Upon completing this course, you should be able to:

1. Evaluate and apply the inflammatory response to soft tissue and bony injury to clinical practice
2. Articulate the pain perception and the body's analgesic mechanisms
3. Apply physical principles of thermal, acoustic, electrical, light, and mechanical modalities
4. Articulate and apply the physiological response to thermal, acoustic, electrical, light, and mechanical modalities to patients in the clinical setting
5. Use your understanding of inflammation, pain, and the physical principles and physiological responses to thermal, acoustic, electrical, light, and mechanical modalities in the safe and effective application of become proficient in the clinical applications of therapeutic modalities in an athletic population.

REQUIRED TEXTS AND RECOMMENDED RESOURCES

	Title	Therapeutic Modalities (5th edition)
	Author	Chad Starkey
	ISBN	978-0-8036-1139-9
	Publisher	F. A. Davis Company
	Publication Date	September 1, 2009

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination **on its scheduled day**. The final examination schedule is posted on the [Class Schedules](#) site. No requests for early examinations or alternative days will be approved.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See [Disability Resource Center](#) for additional information.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See [Academic Policies](#) in the Undergraduate Academic Catalog.

CLASS ATTENDANCE POLICY

Each student is required to be in every class meeting without fail. Responsible attendance and promptness are essential to gain the maximum benefits from this class. No make-up labs.

ACTIVE LEARNING AND EVIDENCE BASED MEDICINE

Active Learning

Your active participation in this class will be required. You will be responsible for your own learning by reviewing class material before and after class. I will guide you in this process; however, in the end the onus of learning will be your responsibility. **Become intrinsically motivated to improve yourself and your understanding of therapeutic modality treatments** and techniques; if you do this you will succeed every time.

Here are some KEYS to success:

- o EFFORT (Work hard)
- o APPROACH (Work smart)
- o ATTITUDE (Think positively)

Evidence Based Medicine

Evidence based medicine (EBM) is the integration of clinically relevant research, clinical skills and experience, and patient preferences and values (Sackett et al 2000). The increased awareness **and focus on the practice of Evidence Based Medicine comes from our daily need for valid information about diagnosis, prognosis, therapy, and prevention.** We want to ask local questions about the effectiveness of therapeutic modalities and design ways to find answers. The EBM portion of this course is **designed so students can explore therapeutic modalities commonly used in the athletic training setting** and determine what **evidence is available to support their current uses.**

COURSE REQUIREMENTS

**Please Note: The PLNU Catalog states that 1 semester unit represents an hour of class per week, and 2 hours of preparation are normal for each hour of class. Therefore, if you spend about 6 hrs per week outside of class in preparation, you will significantly increase your chances of doing well!*

Course Assignments

A. Myth Buster (150 points) – Signature Assignment

Students will identify a common modality myth and devise an experiment to determine if the myth is true or false. Students will carry out the experiment and report findings. The paper will outline the methods, current research, and findings of the experiment. Each pair of students will write a paper, at least 10 pages in length, AMA style, double-spaced. A minimum of 8 peer-reviewed references should be used. Each group of students will turn in a hard copy of the paper to the instructor and submit the paper electronically. (Assessed using the Written AACU rubric)

Each group of students will present his/her research on his/her selected myth. The presentation is expected to be approximately 30 minutes in length. A handout should be provided to each class member the day of the scheduled presentation. (Assessed using the Oral AACU rubric)

B. Practical Examinations (100 points)

Exams will be used to assess student's awareness and understanding of the concepts covered by the course content. These exams will be a combination of written questions along with practical demonstration of skills.

C. Assignments/Labs (30 points)

Students will be given various assignments that address clinical applications and effectiveness of various modalities. Due dates will be announced in class

Lab Attire

On days in which class will be held in a laboratory setting students will be expected to wear attire appropriate for the class. Tank tops or sports bras will be sufficient for most of the labs for the upper extremity. Students should wear gym shorts (loose fitting) as well. Inappropriate attire will result in an uncompleted laboratory experience and an unexcused absence for that day. (A tee shirt is not considered an acceptable top since the muscles and bony landmarks cannot be visualized.)

Tentative Course Schedule

Week	Topic	Assignment
1	Therapeutic Modality Equipment and Safety	Graded lesson
2	Pain response and healing case studies	Modality Checklist at Clinical Site Pain theories – case study & discussion
3	Massage – Hoffa Technique, IASTM	Massage lab questions
4	Cryotherapy	Cryotherapy lab questions & case studies
5	Thermotherapy	Thermotherapy lab questions, case studies & Modality Book - Heat
6	Compression Devices	Compression lab questions
7	Practical: Cryo, Thermo, Compressions	Lab Practical 1
8	Ultrasound	Ultrasound lab questions, case studies & Modality Book - US
9	Traction: manual & mechanical	Traction lab questions
10	Massage: Myofascial release, cupping, kinesio taping	Myofascial release lab questions
11	IFC, Premod, Biphasic	E-Stim lab questions & case studies
12	Tens, Hi Volt, Russian	E-Stim lab questions, case studies & Modality Book – E-Stim Part 1
13	Electrical Stimulation - Ionto, Micro, Combo	E-Stim lab questions, case studies & Modality Book – E-stim Part 2
14	Practical: Ultrasound, Estim	Lab Practical 2
15	Myth Buster Presentations	Myth Buster - Paper, presentation & discussion

No	Competency
TI-1	Describe and differentiate the physiological and pathophysiological responses to inflammatory and non-inflammatory conditions and the influence of these responses on the design, implementation, and progression of a therapeutic intervention.
TI-2	Compare and contrast contemporary theories of pain perception and pain modulation.
TI-3	Differentiate between palliative and primary pain-control interventions.
TI-5	Compare and contrast the variations in the physiological response to injury and healing across the lifespan.
TI-8	Explain the theory and principles relating to expected physiological response(s) during and following therapeutic interventions.
TI-9	Describe the laws of physics that (1) underlay the application of thermal, mechanical, electromagnetic, and acoustic energy to the body and (2) form the foundation for the development of therapeutic interventions (eg, stress-strain, leverage, thermodynamics, energy transmission and attenuation, electricity).
TI-11a	Assess the patient to identify indications, contraindications, and precautions applicable to the intended intervention.
TI-11b	Position and prepare the patient for various therapeutic interventions.
TI-11c	Describe the expected effects and potential adverse reactions to the patient.
TI-11d	Instruct the patient how to correctly perform rehabilitative exercises.
TI-11e	Apply the intervention, using parameters appropriate to the intended outcome.
TI-11f	Reassess the patient to determine the immediate impact of the intervention.
TI-19	Identify manufacturer, institutional, state, and/or federal standards that influence approval, operation, inspection, maintenance and safe application of therapeutic modalities and rehabilitation equipment.