1. Catalogue Description:
a. PED 3143
b. Therapeutic Modalities
c. 2-4-4
d. Fall Semester
e. Ther Modalities
f. A study of physical principles, physiological effects, indications, contraindications, and standard operating procedures of all therapeutic modalities commonly used in Athletic Training.
g. PED 2130, PED 2135, PED 2136
h. Fall, 2004

2. Student Learning Objectives and Evaluation:
a. Course Objectives
   • The student will gain an in depth understanding of the body’s response to trauma with special reference to therapeutic modalities.
   • The student will obtain an understanding of the current pain control theories with special reference to the theoretical rationale for the selection of therapeutic modalities.
   • The student will obtain an understanding of the physiological and biophysical concepts associated with selected thermal, non-thermal and electrical therapeutic modalities with particular emphasis on the theoretical concepts associated with the selection of a particular therapeutic modality
b. Methods of assessing students’ achievement of learning objectives
   Labs – 20%
   Written Exams – 25%
   Oral Practical – 25%
   Class Assignments – 10%
   Final Exam – 20%
   TOTAL – 100%
c. NA
d. This is not graduate level
e. Writing active

3. Outline of the Course: (two 50 minute class sessions and 200 minutes of lab for 15 weeks)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>a. Injury rehabilitation</td>
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<td>1. Terminology</td>
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<td>2. Erroneous concepts of rehabilitation</td>
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<td>3. Efficacy of therapeutic modalities in rehabilitation</td>
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<tr>
<td>2</td>
<td>b. Therapeutic modalities</td>
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<td>1. Terminology</td>
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<td>2. Modality applications</td>
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<td>3. Legal considerations</td>
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3. The inflammatory response
   1. Introduction to the inflammatory response
   2. Sports injury model
   3. Edema formation
4. The healing process
   1. Types of repair
   2. Phases of repair
5,6. Pain
   1. Terminology, pain theories
   2. Pain assessment
   3. Neurobiology of pain and pain modulation
7. Basics of electrical stimulation
   1. Definitions
   2. Types of current, electrode placement
   3. Fundamental physiological response to stimulation
   4. Indications, contraindications, warnings and precautions
8,9. Interferential current therapy (IFC)
   1. Definitions, advantages of IFC therapy
   2. Pain modulation
   3. Indications, contraindications, warnings and precautions
10,11. Neuromuscular electrical stimulation (NMES)
   1. Basic muscle physiology, definitions
   2. Muscle rehabilitation via NMES
   3. Indications, contraindications, warnings and precautions.
12,13. Ultrasound (US)
   1. Terminology, types of US, generation of US waves
   2. Thermal and non-thermal effects and applications
   3. Indications, contraindications, warnings, and precautions
14. Physiology and physics of cold
   1. Terminology, effects and clinical aspects
   2. Physiological effects and application techniques of cold
   3. Indications, contraindications, warnings and precautions
15. Physiology and physics of heat
   1. Terminology, effects and clinical aspects
   2. Physiological effects and application techniques of heat
   3. Indications, contraindications, warnings and precautions

4. Rationale:
   a. Purpose and need: PED 3143 is a mandatory core course for those Physical Education majors in the Athletic Training Option. Students cannot practice as an Athletic Trainer without the national certification and state licensure.
   b. Justification of the level of the course:
      This course is appropriate for sophomore level and above.
   c. Similarity to existing exercises: PED 2131 is being revised and expanded.
   d. Impact on Program: This course would be a required course for students pursuing completion of a Physical Education degree with an option in Athletic Training. Students wishing to obtain certification as an Athletic Trainer must pass this course.
5. Implementation:
   a. Faculty members to whom course will initially be assigned: Lee Ann Price, MS ATC/L
   b. No additional cost at this time
   c. Text and supplementary materials:

6. Community college transfer:
   Since this is a CAAHEP accredited curriculum, no community college transfer will be accepted.

7. Date Approved by the Department: September 12, 2003
8. Date Approved by the College or School Curriculum Committee: September 22, 2003
9. Date Approved by CAA _________ COTE________CGS_________