Carroll University
Division of Natural and Health Sciences
Athletic Training Education Program

Course Number: Athletic Training 304
Course Title: Therapeutic Modalities
Prerequisites: Acceptance to professional phase of Athletic Training Program
Credit Hours: 4 credit hours
Start Date: September 7, 2017
End Date: December 13, 2017

Meeting Time:
Lecture: 8:00am-9:50am Tuesdays and Thursdays- PT 110
Laboratory: 1:20pm-4:10pm Mondays- PT 110

Required Text: Therapeutic Modalities (4th Edition) Starkey, Chad

Course Facilitator: Leah Hudnut, M.Ed, LAT
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Office Hours: By appointment only
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Phone: (414) 238-3326

Lab Assistant: Calli Pilak, M.S, LAT
Email: csehrbro@carrollu.edu

Course Description:
This course applies assessment and evaluation skills to develop goals and treatment plans for physically active people. Students will gain knowledge and skills regarding the rationale for therapeutic modalities and their physiologic effects. Students will gain experience in the application of therapeutic modalities including cryotherapy, thermotherapy, electrotherapy, ultrasound, diathermy, traction, intermittent compression, EMG biofeedback, laser, therapeutic massage, and cupping.

Course Objectives:
Upon successful completion of the course, the student will:

1. Describe and identify stages of healing and apply this knowledge to the clinical decision making process as it relates to therapeutic interventions.
   a. Explain and differentiate the characteristics of the typical stages of healing.
   b. Perform a physical examination and interview to determine stage of healing and relate to the indications, contraindications, and precautions to various treatment protocols.
   c. Identify typical factors that influence tissue healing devise/revise treatment plans that accounts for these factors.
   d. Formulate and describe a rationale for the use of cryotherapy, thermotherapy, electrotherapy, ultrasound, traction, intermittent compression, and therapeutic massage to facilitate tissue healing.

2. Understand and describe factors that cause and influence pain (nocioception and perception), compare and contrast contemporary pain-control theories, and assess/hypothesize causes and contributing factors of pain in patient populations.
   a. Quantify pain using standard accepted measures.
   b. Explain the difference between pain and nocioception and current pain theories.
c. Explain and perform a subjective interview and physical examination to help determine cause/s and or contributing factors for pain.
d. Formulate and describe a rationale for the use of cryotherapy, thermotherapy, electrotherapy, ultrasound, traction, intermittent compression, and therapeutic massage to address patient pain symptoms.

3. Knows and understands the properties of mechanical, thermal, and electromagnetic energy and how they relate to physiological responses.
   a. Relates the physical laws associated with thermal, mechanical, and electromagnetic energies and electric current to the relevant parameters of therapeutic modality interventions.
   b. Describes and predicts the physiological responses to the therapeutic application of modality interventions and the manipulation of associated parameters.
   c. Demonstrates the ability to choose and apply relevant therapeutic modalities with proper parameters based on physical properties of the intervention and the physiologic responses associated with the chosen intervention.

4. Demonstrate the ability to formulate a treatment plan cognizant of intervention precautions and contraindications, determine appropriate parameters and apply the use of therapeutic modalities (including soft tissue mobilization) as a therapeutic intervention to facilitate the achievement of stated patient/treatment goals.
   a. Demonstrate the ability to select appropriate parameters and apply cold whirlpool, controlled cold therapy unit, ice pack vapocoolant spray, ice immersion, ice massage, and cryokinetic treatments.
   b. Demonstrate the ability to select appropriate parameters and apply moist heat pack paraffin treatment, contrast bath, and warm whirlpool treatments.
   c. Demonstrate the ability to select appropriate parameters and apply shortwave diathermy.
   d. Demonstrate the ability to select appropriate parameters and apply light therapy.
   e. Demonstrate the ability to select appropriate parameters and apply electrical stimulation for pain control and reduction of muscle spasm.
   f. Demonstrate the ability to select appropriate parameters and apply electrical stimulation for muscle reeducation, muscle pumping, muscle atrophy retardation and strengthening.
   g. Demonstrate the ability to select appropriate parameters and apply electrical stimulation for edema prevention and reduction.
   h. Demonstrate the ability to select appropriate parameters and apply iontophoresis.
   i. Demonstrate the ability to select appropriate parameters and apply thermal, non-thermal, and combination therapeutic ultrasound.
   j. Demonstrate the ability to select appropriate parameters and apply indicated ROM/stretching activities (manual, mechanical, and positional).
   k. Demonstrate the ability to select appropriate parameters and apply mechanical, manual and positional traction.
   l. Demonstrate the ability to select appropriate parameters and apply intermittent compression.
   m. Demonstrate the ability to select appropriate parameters and apply electromyography biofeedback.
   n. Demonstrate the ability to select appropriate soft tissue mobilization (STM) strokes and intensity and perform basic STM skills.
   o. Appraise the effects of selected interventions and evaluate the need to continue, modify or discontinue the use of given intervention.

5. Knows and applies evidence based practice principles.
   a. Explain the components of EBP
   b. Knows and understands levels of evidence.
   c. Able to perform a critical appraisal of existing literature for a clinical scenario.
   d. Utilize EBP principles as it relates to the field of athletic training and therapeutic interventions decision making.

These course objectives are based on the National Athletic Trainers’ Association’s Athletic Training Educational Competencies and Proficiencies.
Course Expectations:
1. Be on time for class and lab
2. Be prepared for class when class starts
3. Common courtesy
4. Class participation is encouraged
5. Stay focused throughout class
6. Stay caught up if not ahead on any readings and assignments. At this level in your academic career late assignments will not be accepted
7. Ask questions when you are not sure about something
8. Have mutual respect for your instructor as well as your fellow classmates
9. NO CELL PHONES & NO TEXTING!

Teaching Methods and Learning Experiences:
1. Class lecture
2. Supplemental readings and handouts
3. Laboratory experiences
4. Guest speaker
5. In class quizzes
6. Written examinations
7. Informal discussion between the clinical professor and students
8. Modality research

Attendance Policy:
Students are expected to prepare, attend and participate in all lectures and labs. Attendance for all lectures is strongly recommended due to the cumulative nature and content of this course. If you miss a lecture it is the student’s responsibility to obtain notes or handouts. Attendance in all clinical laboratories is required. If a student is to miss a laboratory, arrangements must be made, prior to the lab, with the instructor to make up the laboratory. If arrangements have not been made, the student will have to take a zero for that respective proficiency connected with the laboratory. Students are expected to maintain professionalism including: upholding promptness, professional attitude, and appropriate dress at all clinical laboratory sessions.

Grading:
Grading for this course will include written exams, skill checks/proficiencies, an EBP paper, and a practical exam (clinical proficiency). For the practical exams, students will be graded on their ability to perform proper patient examination, selection and identification of appropriate modality for specific conditions, selection of proper parameters for each modality, and have the ability to properly apply the modality. There will be four written exams consisting of material presented in lectures, readings, and handouts. The final exam will be an oral exam and cumulative in nature.

Assessments:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>5 Competencies</td>
<td>25%</td>
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<tr>
<td>Exam 1</td>
<td>15%</td>
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<tr>
<td>Exam 2</td>
<td>15%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<tr>
<td>Clinical Proficiency</td>
<td>10%</td>
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<tr>
<td>Patient Paper/EBP</td>
<td>10%</td>
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<tr>
<td>6 SOAP notes/Paper Patients</td>
<td>5%</td>
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Soap Notes:
Students will be required to develop a paper patient in a SOAP note format for each lab activity that is related to the intervention. These will be used with a classmate to practice their examination skills. The paper patient created should lead to a problem list where the modality being studied is a relative treatment.

Psychomotor Competencies:
Throughout the semester you will be required to setup and apply therapeutic modalities to a mock patient. Test times will be determined in the previous class day. The student will arrive 10 minutes before their test tie. Students will receive a diagnosis and a short SOAP note that will include all information needed to form a rational for the selected modality. The student will be assessed on precautions, contraindications, set up, application, discontinuation, patient care, and follow up instructions. Students scoring below 80% will be required to repeat the competency. The score of the first attempt will be used in grade calculation.

Examinations:
Students will take two exams during the semester and one final exam. The final exam will be part cumulative and part on most recent previous instruction.

Clinical Proficiencies:
A final practical examination will be performed testing the integration of knowledge between a full patient examination and appropriate modality selection and application. Students will be given a scenario with which they will utilize the patient/client model and clinical decision making skills to select an intervention which then must be performed. Students scoring below 80% will be required to repeat the proficiency. The score of the first attempt will be used in grade calculation.

Students who have completed the skill check and practical exam are not to discuss the exam, course content, or practice skills with any student who has not yet taken the exam. Failure to comply will result in a zero for that respective skills check or proficiency along with being considered an academic misconduct.

Paper Patient and Evidence Based Practice:
Students will create a common injury scenario by creating their own patient on paper. The students will develop a comprehensive subjective and objective evaluation for the patients and create a problem list for the patient. After completing a problem list for the patient, students will then perform a literature review on a modality to treat the patient and report their findings in a Critically Appraised Topic (CAT) format. Using Carroll library databases and other online databases, students will perform a search of evidence based practice using systematic reviews, randomized controlled studies, case studies, etc. Students will then summarize their finding in a presentation to the class.

Liability and Confidentiality:
All students will be billed for liability insurance coverage for the class. Students will be expected to sign a letter of statement regarding patient confidentiality and upholding moral and ethical standards regarding confidential information.

Statement on Academic Integrity:
The Carroll University Academic Integrity Policy is located in your student handbook (pages 17-21). You are encouraged to familiarize yourself with it. If a student violates this policy in any way, the instructor reserves the right to impose a sanction of failure on the assignment/assessment or failure in the course. If you have questions about appropriate citations, please ask.
Accommodation for Disabilities:
Any requests for accommodation must be made through Martha Bledsoe, Disability Services Coordinator at Carroll University, mbledsoe@carrollu.edu. Appropriate accommodations can be made once notification is received from Ms. Bledsoe.

Modification to the Syllabus:
The instructor and the University reserve the right to modify, amend, or change the syllabus (schedule, course requirements, grading policy, etc.) as the curriculum and/or program requires.

ATH304 Tentative Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday (Lab)</th>
<th>Tuesday</th>
<th>Thursday</th>
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</thead>
<tbody>
<tr>
<td>Week 1: 9/4</td>
<td>No Lab</td>
<td>No Class</td>
<td>First day of Class: Syllabus Expectations CAT Paper Topics</td>
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<tr>
<td>Week 2: 9/11</td>
<td>Intro to Modalities SOAP Notes Intro Lab</td>
<td>Chapter 1: Tissue Healing</td>
<td>Chapter Tissue Healing</td>
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<tr>
<td>Week 4: 9/25</td>
<td>SOAP #1 Due Pain Lab WS Pain Lab</td>
<td>Chapter 17: Massage Exam #1 Review</td>
<td>Exam #1</td>
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<tr>
<td>Week 5: 10/2</td>
<td>Massage WS Massage</td>
<td>Chapter 5 &amp; 6: Thermotherapy</td>
<td>Chapter 5 &amp; 6: Thermotherapy</td>
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<td>Week 6: 10/9</td>
<td>Massage Competency</td>
<td>Thermotherapy WS Thermotherapy Lab</td>
<td>Hydrotherapy/Compression</td>
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<tr>
<td>Week 7: 10/16</td>
<td>No Class- Fall Break</td>
<td>No Class- Fall Break</td>
<td>Hydrotherapy/Compression LAB</td>
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<tr>
<td>Week 8: 10/23</td>
<td>Compression Competency SOAP #2 Due</td>
<td>Chapter 7 &amp; 8: Ultrasound</td>
<td>Chapter 7 &amp; 8: Ultrasound</td>
</tr>
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<td>Week 9: 10/30</td>
<td>Ultrasound WS Ultrasound Exam #2 Review</td>
<td>Exam #2</td>
<td>Chapter 9 &amp; 10: Diathermy/Light Ultrasound Review</td>
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<tr>
<td>Week 10: 11/6</td>
<td>SOAP #3 Due Ultrasound Competency</td>
<td>Chapter 11-13: E-Stim</td>
<td>Chapter 11-13: E-Stim</td>
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<tr>
<td>Week 12: 11/20</td>
<td>E-Stim WS SOAP #4 Due</td>
<td>Chapter 18: Biofeedback</td>
<td>No Class- Thanksgiving</td>
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<tr>
<td>Week 13: 11/27</td>
<td>E-Stim Competency SOAP #5 Due</td>
<td>Manual Therapy Techniques</td>
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<tr>
<td>Week 14: 12/4</td>
<td>E-Stim Competency</td>
<td>Review</td>
<td>Clinical Proficiency Review</td>
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<tr>
<td>Week 15: 12/12</td>
<td>Clinical Proficiency SOAP #6 Due</td>
<td>Review</td>
<td>FINAL EXAM</td>
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