COURSE OUTLINE

Course Number  
PTA 107

Course Title  
Therapeutic Measurement

Credits  
2

Hours: lecture/Lab/Other  
1/2/0

Pre-requisite  
PTA 105, BIO 104 LEC & LAB with a grade of C+ or higher completed within the past 5 years

Co-requisite  
PTA 201

Implementation  
Summer  
2019

Catalog description:

Addresses bony landmarks, muscle length, measurement of joint range of motion and muscle strength. Medical documentation is introduced. Students develop their skills through practice with each other. Competencies evaluated throughout the course.

Recommended Texts:


Recommended Non-text Materials:

GONI RehabLearning App from the App Store

Revision date: Summer  
2018

Course coordinator: Holly Kaiser, 609-570-3478, Kaiserh@mccc.edu

Information resources:

This course makes use of a course manual and YouTube videos created by the course coordinator.

Course Competencies/Goals:

Following the successful completion of this course with a grade of C+ or higher, the learner will be able to:
1. Observe the available range of motion in a specified joint of a classmate and verbally report whether or not the motion looks like it is within normal limits, functional limits or is limited and then objectively measure the motion with a goniometer and document the range of motion.

2. Manually assess the strength of a muscle group against gravity and in gravity eliminated positions to determine how much muscle strength is present in the prime movers for that muscle group and whether or not the test position needs to be changed.

**Course-specific General Education Knowledge Goals and Core Skills.**

**General Education Knowledge Goals**

**Goal 1. Communication.** Students will communicate effectively in both speech and writing.

**Goal 2. Mathematics.** Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

**MCCC Core Skills**

**Goal A. Written and Oral Communication in English.** Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.

**Goal B. Critical Thinking and Problem-solving.** Students will use critical thinking and problem solving skills in analyzing information.

**Goal D. Information Literacy.** Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

**Goal F. Collaboration and Cooperation.** Students will develop the interpersonal skills required for effective performance in group situations.

**Units of study in detail:**

<table>
<thead>
<tr>
<th>Unit</th>
<th>MCCC Goals &amp; Skills:</th>
<th>Course Learning Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1</td>
<td>Bony landmarks, 1, A, B, D, F</td>
<td>C1.10, C1.13-1.14, P2.1, A1.1-1.9</td>
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<tr>
<td>Unit 2</td>
<td>Measurement tools, 1, 2, A, B, D, F</td>
<td>C1.10-1.12, C1/14, C2.3, P2.1, A1.1-1.9</td>
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<tr>
<td>Unit 3</td>
<td>Introduction to Goniometry (ROM), 1, 2, A, B, D, F</td>
<td>C1.2-1.3, C1.5-1.7, C1.9, C1.11, C1.14, C2.4-2.5, C5.2, P1.1-1.2, P2.1, A1.1-1.9</td>
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<tr>
<td>Unit 4</td>
<td>Introduction to Manual Muscle Testing (MMT), 1, 2, A, B, D, F</td>
<td>C1.1-1.3, C1.6, C1.8-1.9, C1.14, C2.1-2.2, C2.6, C5.2, P1.1-1.2, P2.1, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 5</td>
<td>Spine ROM &amp; MMT, 1, 2, A, B, D, F</td>
<td>C1.1-1.14, C2.2, C2.4-2.6, C3.2-3.5, C4.1, C5.3, C6.1-6.3, P1.1-1.2, P2.2-2.3, P3.1-3.6, P4.1-4.5, A1.1-1.9</td>
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<tr>
<td>Unit 6</td>
<td>Upper Extremity ROM &amp; MMT, 1, 2, A, B, D, F</td>
<td>C1.1-1.14, C2.2, C2.4-2.6, C3.2-3.5, C4.1, C5.1, C5.3, C6.1-6.3, P1.1-1.2, P2.2-2.3, P3.1-3.6, P4.1-4.5, A1.1-1.9</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Lower Extremity ROM &amp; MMT, 1, 2, A, B, D, F</td>
<td>C1.1-1.14, C2.2, C2.4-2.6, C3.2-3.5, C4.1, C5.1, C5.3, C6.1-6.3, P1.1-1.2, P2.2-2.3, P3.1-3.6, P4.1-4.5, A1.1-1.9</td>
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Learning Objectives have been identified in each of the following domains of learning: The student will be able to...

PTA 107 COURSE OBJECTIVES:

**Cognitive/Knowledge**
The learner will be able to successfully:

**C1. Knows specific facts (Remember)**
- C1.1 Identify prime movers for each motion within the body
- C1.2 Identify common substitution and compensation patterns seen during goniometry and manual muscle testing
- C1.3 Identify the components of measurements that need to be documented in a patient chart
- C1.4 Recall commonly accepted “normal” values
- C1.5 Describe the normal end feel during passive range of motion for each joint
- C1.6 Identify which anatomical plane each motion of the body occurs in, while in anatomic position and testing positions
- C1.7 Identify alignment of the fulcrum, stationary arm and moving arm of a goniometer using bony landmarks for all motions of the body
- C1.8 Identify proper stabilization, clinician hand placement, and patient instruction for all motions for goniometry and manual muscle testing
- C1.9 Identify recommended (standard) patient positions for all motions for both goniometry and manual muscle testing
- C1.10 Recognize and define medical and descriptive terminology
- C1.11 Select the most appropriate goniometer size for each joint
- C1.12 Describe the components and proper use of various measurement tools
- C1.13 Recognize bony landmarks used during goniometry and describe how to identify and palpate them
- C1.14 Identify proper patient care sequence

**C2. Comprehends basic concepts and principles (Understand)**
- C2.1 Describe how the role of the PTA differs from that of the PT in relation to gathering objective data
- C2.2 Describe types of muscle contractions (isometric, concentric, eccentric) responsible for joint movements
- C2.3 Contrast and compare various measurement tools
- C2.4 Describe the difference between active, passive, and active assisted range of motion
- C2.5 Differentiate between the advantages & disadvantages of various measurement techniques for goniometry
- C2.6 Differentiate between gravity assisted, against gravity and gravity eliminated testing positions for manual muscle testing

**C3. Applies basic concepts and principles to new situations (Apply)**
- C3.1 In small and large group discussions, apply the principles of goniometry to the joints of the hand
- C3.2 Apply basic principles of stretching and strengthening to muscles throughout the body
- C3.3 Distinguish between positions that measure muscle length and those which measure joint range of motion
- C3.4 Apply the principles of manual muscle testing to determine muscle grades using both numerical and quantitative scores
- C3.5 During classroom activities, apply the principles of manual muscle testing to determine appropriate placement for resistance for various muscles
C4. Demonstrates the ability to analyze procedures to determine if organizational principles are being followed (Analyze)
   C4.1 During instructor-led lab discussions, question standard manual muscle testing procedures to determine if they follow the principles and rules of manual muscle testing

C5. Applies thinking skills when judging data and performance (Evaluate)
   C5.1 Judge the adequacy with which changes in standard positions have been supported by data
   C5.2 Interpret a research article related to goniometry or manual muscle testing and its impact on the testing procedure or interpretation of the testing procedure
   C5.3 Assess and rate the performance of a classmate in a mock practical examination and compare observations with classmates and instructor

C6. Uses knowledge to create new methods necessary to gather data (Create)
   C6.1 Arrange a testing sequence for goniometry and manual muscle testing to minimize positional changes for the subject
   C6.2 In small groups during class, generate possible solutions for patients who are unable to assume a standard testing position
   C6.3 Generate a new procedure for MMT utilizing the principles of MMT in a lab session

Psychomotor
The learner will be able to successfully:

P1. Observe course skills performed by the instructor (Observe)
   P1.1 Observe the instructor demonstrate goniometry and manual muscle testing for all joint motions during lab activities
   P1.2 Observe and review examples of proper documentation examples

P2. Copy data collection skills during lab activities, with feedback provided by the course instructor (Imitate)
   P2.1 Perform hand hygiene skills including hand sanitizing rub and hand wash during lab
   P2.2 Perform goniometric measurement of joint range of motion for all joints during lab, as outlined by the skill demonstration list and critical safety indicators
   P2.3 Perform manual muscle tests for all grades for each joint motion correctly during lab, as outlined by the skill demonstration list and critical safety indicators

P3. Perform skills repeatedly to make the movements more automatic and smooth (Practice)
   P3.1 Repeat correct hand hygiene techniques with enough frequency to demonstrate competence during competency testing and practical examinations
   P3.2 Repeat correct goniometry and manual muscle testing sequences (as outlined by the skill demonstration list and critical safety indicators) with enough frequency to demonstrate competence during competency testing and practical examinations
   P3.3 Document the subjective and objective portions of a SOAP note
   P3.4 Demonstrate use of precision of medical language on written quizzes and during supervised lab sessions
   P3.5 Repeat the program approved introduction until it is smooth and automatic
   P3.6 Ask subjective questions that are pertinent to the situation, while avoiding leading questions

P4. Make adjustments in the performance of goniometry and manual muscle testing in order to perfect these skills (Adapt)
   P4.1 Maintain a safe and competent hand wash process when other clinicians are sharing the same resources
   P4.2 Properly locate and palpate random bony landmarks used in goniometry during competency testing
   P4.3 Use a goniometer to measure random active joint range of motion of a classmate or instructor during competency testing, as outlined by the skill demonstration list and critical safety indicators
P4.4 Perform random manual muscle tests to measure a classmate or instructor’s actual muscle strength during competency testing, as outlined by the skill demonstration list and critical safety indicators

P4.5 Prepare and maintain safe and effective treatment areas

**Affective**
The learner will be able to successfully:

A1. Demonstrate professional behaviors consistent with the values of the profession (Generic Abilities)
   A1.1 Utilize professional and respectful communication styles utilized in a professional setting
   A1.2 Demonstrate a commitment to learning by attending class consistently and showing up on time
   A1.3 Demonstrate a commitment to learning by preparing for each class
   A1.4 Demonstrate the ability to manage time and resources effectively by completing assignments in a timely manner
   A1.5 Demonstrate the ability to receive feedback in a non-defensive and receptive manner
   A1.6 Take responsibility for the outcomes of personal and professional actions
   A1.7 Exhibit appropriate and professional conduct consistent with the values of the profession
   A1.8 Identify sources of stress and implement effective coping behaviors.
   A1.9 Demonstrate a commitment to the physical therapy profession

**Evaluation of student learning**

<table>
<thead>
<tr>
<th>% of grade</th>
<th>Activity</th>
<th>Number within course</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Written Exams</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Quizzes**</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Article Review</td>
<td>1</td>
</tr>
<tr>
<td>NA</td>
<td>Papers</td>
<td>0</td>
</tr>
<tr>
<td>NA</td>
<td>Presentation(s)</td>
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</tr>
<tr>
<td>5</td>
<td>Generic Abilities Assessment</td>
<td>Continuous</td>
</tr>
<tr>
<td>25</td>
<td>Practical Exam</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Competency Tests**</td>
<td>4</td>
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</tbody>
</table>
**Academic Integrity Statement:** There is a zero tolerance policy for plagiarism. Any work that violates the MCCC Academic Integrity policy will receive a grade of “0” and the learner will be reported to the College’s Academic Integrity Committee consistent with College policies. See [http://mlink.mccc.edu/omb/OMB210.pdf](http://mlink.mccc.edu/omb/OMB210.pdf)