Course Number: PTA 106  
Course Title: Therapeutic Measurement  
Credits: 1

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

Pre-requisite: PTA 101, PTA 105
Co-requisite: PTA 112

Catalog description:
Laboratory practice of measurement skills for joint range of motion (ROM), muscle length, and muscle strength. Includes volumetric, circumferential and postural assessments; manual muscle tests; and range of motion measurements using a goniometer. Competencies evaluated throughout the course.

Required texts/other materials:


Recommended Texts:


Revision date: Summer 2012  
Course coordinator: Holly Beinert, 609-570-3478, Beinerth@mccc.edu

Information resources:
This course makes use of the required texts for the course and in addition, uses a laboratory manual created by the instructor.

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. Observe the size of a peripheral extremity and compare it with the opposite extremity and assess whether or not there is a size differential in girth and length and then objectively measure the area to determine whether or not there is a difference.

3. Manually assess the strength of a peripheral 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>Goals:</th>
<th>Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1</td>
<td>1, A, B, D, F</td>
<td>P5, A1, A2, A3</td>
</tr>
<tr>
<td>Unit 2</td>
<td>1, 2, A, B, D, F</td>
<td>C4, P3, P4, A1, A2, A3</td>
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<tr>
<td>Unit 3</td>
<td>1, 2, A, B, D, F</td>
<td>C2, C4, C5, C7, C8, A1, A2, A3, A4</td>
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<td>Unit 4</td>
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<td>Unit 5</td>
<td>1, 2, A, B, D, F</td>
<td>C1, C2, C3, C6, C8, C9, C10, C11, C12, C13, P2, P6, P7, A1, A2, A3</td>
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<td>Unit 6</td>
<td>1, 2, A, B, D, F</td>
<td>C1, C2, C3, C6, C8, C9, C10, C11, C12, C13, P2, P6, P7, A1, A2, A3</td>
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<tr>
<td>Unit 7</td>
<td>1, 2, A, B, D, F</td>
<td>C1, C2, C3, C6, C8, C9, C10, C11, C12, C13, P2, P6, P7, A1, A2, A3</td>
</tr>
</tbody>
</table>

**Learning Objectives have been identified in each of the following domains of learning:**
The student will be able to...

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

1. identify synergistic muscle groups that initiate and continue motion for the peripheral joints
1. Differentiate between gravity assisted, gravity resisted, and gravity eliminated testing positions for MMT.
2. Identify muscles that will try to substitute for weak muscles to maintain or perform a specified motion.
3. Differentiate between the advantages & disadvantages of various measurement techniques for strength, ROM, and extremity size or volume.
4. Identify the components of measurements that need to be documented in a patient chart.
5. Recognize normal and abnormal joint movement, as well as commonly accepted “normal” values.
6. Describe the difference between active ROM, passive ROM, and active assisted ROM.
7. Describe the normal end feel during joint ROM for a specific joint.
8. Differentiate between the various muscle grades using “5/5” and “trace-normal” terminology.
9. Identify which anatomical plane each motion of the peripheral joints occur within.
10. Identify alignment of the fulcrum, stationary arm and moving arm of a goniometer using bony landmarks for all motions of the peripheral joints.
11. Identify proper stabilization, clinician hand placement, and patient instruction for all motions of the peripheral joints.
12. Identify recommended (standard) patient positions for all motions of the peripheral joints for both goniometry and manual muscle testing.

**Psychomotor**
The student/learner will be able to successfully:
1. Perform manual muscle tests for all grades for the prime movers.
2. Perform goniometric measurement of joint range of motion for all peripheral joints.
3. Perform a volumetric measurement for the hand and foot/ankle.
4. Perform circumferential measurements for an upper extremity.
5. Perform a postural assessment for a seated and standing patient.
7. Recognize normal and abnormal muscle length.

**Affective**
The student/learner will be able to successfully:
1. Defend the importance of licensed clinicians performing and documenting ROM, MMT, and volumetric measurements in the patient record.
2. Recognize the importance of explaining measurements in a manner that the patient can understand.
3. Defend the inclusion of objective measurements in a patient record.
4. Recognize the importance of using measurement techniques that are considered both reliable and valid.

**Evaluation of student learning**

<table>
<thead>
<tr>
<th>% of grade</th>
<th>Activity</th>
<th>Number within course</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Written Exams</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Quizzes**</td>
<td>8</td>
</tr>
<tr>
<td>NA</td>
<td>Article Reviews</td>
<td>0</td>
</tr>
<tr>
<td>NA</td>
<td>Papers</td>
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<tr>
<td>NA</td>
<td>Presentation(s)</td>
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<tr>
<td>20</td>
<td>Class/Lab Participation</td>
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<tr>
<td>25</td>
<td>Practical Exam</td>
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<tr>
<td>10</td>
<td>Competency Tests**</td>
<td>4</td>
</tr>
</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)