Course Number: PTA 105  
Course Title: Kinesiology for PTAs  
Credits: 3

Hours: lecture/Lab/Other: 3/0/0

Pre-requisite: BIO 103 Anatomy & Physiology I with a grade of C or higher completed within the past 5 years

Implementation: Fall/Spring

Catalog description:

Required course for Physical Therapist Assistant majors. Introduces the concepts of locomotion, forces, levers and bio-mechanics. Topics include origins, insertions, innervations, and actions of prime movers for the musculoskeletal system.

Required texts/other materials:


Recommended:


www.visiblebody.com Visible Body subscriptions are available to educational users, payable with any major credit card. Subscription prices for Educational Use: $17.95 (1 term/5 months) OR $35.95 (2 terms/1 year)

Revision date: Fall 2023  
Course coordinator: Holly Kaiser, 609-570-3478, kaisereh@mccc.edu

Information resources:

This course makes use of the required texts and in addition, uses the resources of the Web and software that is available for use in HS 318 free of charge to all learners enrolled in the class. Software includes:

- Primal Pictures: Interactive Functional Anatomy
Student Learning Outcomes:
Following the successful completion of this course with a grade of C+ or higher, the student will be able to:
1. Apply foundational information of human movement to an understanding of anatomy to understand muscle contraction, joint position, and ligamentous function.
2. Use descriptive terminology to clearly communicate joint positions and motions.
3. Analyze human movement to identify osteokinematic and arthrokinematic movements, planes of motion, axes of motion, sources of resistance, and muscle contractions.

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 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

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 E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.
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>Topics</th>
<th>MCCC Goals/Core Skills</th>
<th>Course Goals/Objectives*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Introduction Kinesiology Terminology The Skeletal &amp; Articular Systems</td>
<td>1, A, B, F</td>
<td>C1.1, C1.2, C1.3, C1.6, C2.1, C2.2, C2.3, C3.3</td>
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<tr>
<td>2</td>
<td>Osteokinematics and Arthrokinematics</td>
<td>1, A, B, F</td>
<td>C1.4, C1.5, C1.6, C1.10, C2.1, C2.7, C3.3</td>
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<tr>
<td>3</td>
<td>Muscles Sources of Resistance</td>
<td>1, A, B, F</td>
<td>C1.8, C1.9, C1.10, C2.5, C2.6, C2.7, C3.3, C4.1</td>
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<tr>
<td>4</td>
<td>The Nervous System Review of Kinesiology Foundations</td>
<td>1, A, B, F</td>
<td>C1.11, C1.12, C2.8, C3.1, C3.3, C4.1</td>
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<tr>
<td>5</td>
<td>Review of Kinesiology Foundations continued</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1,</td>
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<tr>
<td></td>
<td>The Shoulder Girdle</td>
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<td>C6.1, P1, A1.1-5.5</td>
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<td>6</td>
<td>The Glenohumeral Joint</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>7</td>
<td>The Elbow and Forearm</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>8</td>
<td>The Wrist</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>9</td>
<td>The Hand</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>10</td>
<td>The Vertebral Column, Pelvic Girdle &amp; Posture</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C5.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>11</td>
<td>The Hip</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>12</td>
<td>The Knee</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>13</td>
<td>The Foot and Ankle</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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<tr>
<td>14</td>
<td>TMJ, Mastication (Face) and Ventilation</td>
<td>1, A, B, F</td>
<td>C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5</td>
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</table>
Learning Objectives have been identified in each of the following domains of learning: The student will be able to...

PTA 105 COURSE OBJECTIVES:

Cognitive/Knowledge
The learner will be able to successfully:

C1. Knows specific facts (Remember)
C1.1 Identify each of the anatomical planes of the human body
C1.2 Identify the origin, insertion, innervation, and action of the prime movers for the trunk, upper extremity and lower extremity
C1.3 Describe anatomic position and its relevance
C1.4 Recall a basic understanding of the components and categories of the human skeletal system
C1.5 Describe the relationship between structure and function
C1.6 List the function of bones, joints, ligaments, tendons, capsule, cartilage and bursae
C1.7 Name the osteokinematic movements that occur in each anatomical plane when in anatomic position
C1.8 Name the osteokinematic motions that occur at each joint in the human body
C1.9 Identify the functional characteristics of muscle
C1.10 Define the various types of muscle contractions
C1.11 Identify basic muscle anatomy
C1.12 Identify specific muscles in anatomic illustrations
C1.13 Describe the basic anatomy of the central and peripheral nervous systems
C1.14 Identify osteology and bony landmarks pertinent to the axial and appendicular skeletons
C1.15 Describe muscle locations on the body
C1.16 Describe the force-velocity relationship

C2. Comprehends basic concepts and principles (Understand)
C2.1 Differentiate between the terms osteokinematics and arthrokinematics
C2.2 Express the relationship between stability and mobility by providing an example that illustrates this relationship
C2.3 Differentiate between active, passive, and active assisted movements
C2.4 Explain the convex on concave and concave on convex rules
C2.5 Describe the relationship between agonists and antagonists
C2.6 Differentiate between mono-articular and bi-articular muscles
C2.7 Express how the active length-tension relationship of muscle pertains to exercise programs and daily activities
C2.8 Express the difference between active and passive insufficiency
C2.9 Identify muscles that are utilized during various daily activities
C2.10 Differentiate between afferent and efferent nerves
C2.11 Explain the function of a nerve plexus

C3. Applies basic concepts and principles to new situations (Apply)
C3.1 Utilize descriptive terminology to describe positions of the body and joints
C3.2 Relate anatomical planes of the body with the environment and various positions
C3.3 Apply kinesiology concepts to determine appropriate methods to stretch various muscles
C3.4 Apply kinesiology concepts to determine appropriate methods to strengthen various muscles, provided with different parameters
C3.5 Determine body and joint positions required for movements against gravity, gravity assisted, and gravity eliminated
C3.6 Relate the axis of motion to line of pull and resultant muscle contractions
C3.7 Integrate knowledge from BIO 103 into the new material in this PTA 105 course during case scenarios, discussions, assignments, exams, and quizzes

C4. Demonstrates the ability to analyze procedures (Analyze)
C4.1 Analyze functional movement patterns to determine joint motions, muscle contractions, planes, and relation to gravity/resistance
C4.2 Distinguish between close and open chain movements
C4.3 Classify the type of muscle contraction that occurs during functional movement patterns

C5. Applies thinking skills (Evaluate)
C5.1 Evaluate accuracy of exercise claims made by website chosen by instructor

C6. Uses knowledge to create (Create)
   C6.1 Use knowledge of stretching and strengthening principles to create exercises to stretch and strengthen specific muscles

Psychomotor
The learner will be able to successfully:

P1. Demonstrate effective communication skills with classmates and instructors
P2. Utilize descriptive terminology to clearly communicate with classmates and instructor.
P3. Participate in class discussions either in person or remotely
P4. Access the Blackboard shell for this course
P5. Complete online exams, as applicable
P6. Participate in online written and video discussion posts, as applicable
P7. In written assignments, analyze movement patterns provided by the course instructor and utilize descriptive terminology correctly, to clearly communicate the muscles and types of contractions responsible for the osteokinematic movements identified.

Affective
The learner will be able to successfully:

A1. Receive Phenomenon
   A1.1 Listen to others with respect
   A1.2 Receive feedback professionally
   A1.3 Attend class consistently
   A1.4 Arrive to all classes prior to the start time
A2. Respond to Phenomenon
   A2.1 Participate in class
   A2.2 Know the safety rules and practice them
   A2.3 Respond to feedback in a professional manner
   A2.4 Prepare for lectures ahead of time
A3. Value
   A3.1 Demonstrate sensitivity to individual and cultural differences
   A3.2 Show an ability to solve problems
   A3.3 Inform course instructor of matters one feels strongly about
A4. Organize
   A4.1 Recognize the need for balance between educational and personal priorities
   A4.2 Accept academic integrity standards, as evidenced by following them
   A4.3 Prioritize times effectively to meet educational and personal needs
   A4.4 Complete and submit all assignments, exams and quizzes on time
A5. Internalize
   A5.1 Show self-reliance when working independently
   A5.2 Cooperate in group activities
   A5.3 Revise judgments and changes behavior in light of new evidence and feedback
   A5.4 Value people for who they are, not how they look
   A5.5 Identify sources of stress and implement effective coping behaviors
**Evaluation of student learning**

<table>
<thead>
<tr>
<th>% of grade</th>
<th>Activity</th>
<th>Number within course</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Written Exams</td>
<td>5</td>
</tr>
<tr>
<td>20</td>
<td>Quizzes</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td>Assignment(s)</td>
<td>3</td>
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<tr>
<td>5</td>
<td>Class Participation</td>
<td>Continuous</td>
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</tbody>
</table>

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