



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:

Lippert, L. (2017). *Clinical Kinesiology & Anatomy*, 6th ed., Philadelphia PA, FA Davis Co. ISBN 978-0-8036-5823-3

Biel A, (2014). *Trail Guide to the Body 5th ed.*, Boulder CO: Books of Discovery Publishers. ISBN 978-0-9829786-5-8

Recommended:

Lippert, L. (2017) *Kinesiology Flashcards*, 4rd ed., Philadelphia PA, FA Davis. Co., ISBN 978-0-8036-5824-0

Jarmey, C, Sharkey J,(2015) *The Concise Book of Muscles 3rd ed.* Berkley, CA, North Atlantic Books, ISBN978-1-62317-020-2

Muscolino, JE., (2010) *Musculoskeletal Anatomy Coloring Book*, St. Louis, MO: Mosby/Elsevier. ISBN 978-0-323-05721-9

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Revision date: Fall 2023

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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

- Primal Pictures: Essential Regional Anatomy
- Primal Pictures: Anatomy for Pilates
- Primal Pictures: Sports Injuries Series-2nd edition

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:

Unit	Topics	MCCC Goals/ Core Skills	Course Goals/ Objectives*
1	Course Introduction Kinesiology Terminology The Skeletal & Articular Systems	1, A, B, F	C1.1, C1.2, C1.3, C1.6, C2.1, C2.2, C2.3, C3.3
2	Osteokinematics and Arthrokinematics	1, A, B, F	C1.4, C1.5, C1.6, C1.10, C2.1, C2.7, C3.3
3	Muscles Sources of Resistance	1, A, B, F	C1.8, C1.9, C1.10, C2.5, C2.6, C2.7, C3.3, C4.1
4	The Nervous System Review of Kinesiology Foundations	1, A, B, F	C1.11, C1.12, C2.8, C3.1, C3.3, C4.1
5	Review of Kinesiology Foundations continued	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1,

	The Shoulder Girdle		C6.1, P1, A1.1-5.5
6	The Glenohumeral Joint	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
7	The Elbow and Forearm	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
8	The Wrist	1, A, B, F	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 A1.1-5.5
9	The Hand	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
10	The Vertebral Column, Pelvic Girdle & Posture	1, A, B, F	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
11	The Hip	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
12	The Knee	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
13	The Foot and Ankle	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5
14	TMJ, Mastication (Face) and Ventilation	1, A, B, F	C1.1, C1.7, C1.13, C1.14, C2.4, C3.2, C3.3, C4.1, C6.1, P1, A1.1-5.5

**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

Grading

% of grade	Activity	Number within course
60	Written Exams	5
20	Quizzes	6
15	Assignment(s)	3
5	Class Participation	Continuous

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