

## **PTAP-125 CLINICAL KINESIOLOGY      4 CREDITS**

### **SYLLABUS**

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#### **CATALOG DESCRIPTION**

Advanced anatomy of the musculoskeletal and nervous systems. Analysis of osteokinematics and arthrokinematics. Emphasis on clinical skills including palpation, manual muscle testing, goniometry, and special tests. Study of the normal gait cycle.

Prerequisites: Acceptance into the PTA Program

Semester Offered: Spring for the On-Campus and Online Hybrid Programs

#### ***COMMON STUDENT LEARNING OUTCOMES***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

##### **BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

##### **CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

##### **CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

##### **EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

##### **INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

##### **INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

#### **COURSE LEARNING OUTCOMES**

*Upon successful completion of the course, the student will be able to...*

1. Study advanced human anatomy of the musculoskeletal system.
2. Analyze osteokinematics and arthrokinematics related to the human body.
3. Palpate and identify anatomical surface landmarks.

A copy of this approved syllabus is on file in the dean's office.

Updated 12/14/18

4. Demonstrate manual muscle testing.
5. Demonstrate goniometry and range of motion assessment.
6. Describe special tests used by the supervising PT for assessment purposes.
7. Identify the components of the normal gait cycle.
8. Practice generic abilities related to course content.
9. Describe basic concepts related to the APTA Guide to Physical Therapist Practice.

## SPECIFIC LEARNING OBJECTIVES

*Upon successful completion of the course, the student will be able to:*

1. Study advanced human anatomy of the musculoskeletal system.
  - 1a. Explain the function of the skeletal system.
  - 1b. Describe the gross anatomical components and relationships of the skeletal system.
  - 1c. Identify joint structures and components.
  - 1d. Define principles of joint motion.
  - 1e. Describe normal joint end-feel for all major joints.
  - 1f. Identify the normal curves of the vertebral column.
  - 1g. Identify the center of gravity in standing.
  - 1h. Explain the function of the muscular system.
  - 1i. Describe the gross anatomical components and relationships of the muscular system.
  - 1j. Compare and contrast the structure and function of the three major subtypes of skeletal muscles.
  - 1k. Describe the types of muscle contractions and give functional examples for each type.
  - 1l. Name the proximal/distal attachments and function of the major skeletal muscles.
  - 1m. Analyze how the skeletal system and the muscular system function together to allow normal movement.
2. Analyze osteokinematics and arthrokinematics related to the human body.
  - 2a. Define planes and axes.
  - 2b. Identify the relationship of axes to the cardinal planes of motion and the anatomical position for individual joints.
  - 2c. Define Newton's Laws applicable to physical therapy and provide examples.
  - 2d. Define the terminology applicable to forces and loading.
  - 2e. Differentiate between pressure and forces.
  - 2f. Describe the relationship between physical laws and biomechanical principles of the musculoskeletal system.
  - 2g. Examine the components of levers and their use in the human body.
  - 2h. Describe the mechanical property of tissues.
  - 2i. Describe how the length-tension relation of muscle affects force production.
  - 2j. Explain the forces involved when an object is in equilibrium.
3. Palpate and identify anatomical surface landmarks.
  - 3a. Describe the correlation between bony structures and surface anatomy.
  - 3b. Demonstrate the ability to palpate bony structures.
  - 3c. Describe the correlation between muscular structures and surface anatomy.
  - 3d. Demonstrate the ability to palpate muscular structures.
  - 3e. Describe the correlation between connective structures and surface anatomy.
  - 3f. Demonstrate the ability to palpate connective structures.
4. Demonstrate manual muscle testing.
  - 4a. Define manual muscle testing and measuring techniques.
  - 4b. Demonstrate competency in performing manual muscle testing for all major muscle groups including assigning the appropriate grade.
  - 4c. Demonstrate competency in the palpation of the appropriate muscle(s) related to manual muscle testing.

- 4d. Demonstrate competency in the ability to stabilize the appropriate joints during manual muscle testing.
5. Demonstrate goniometry and range of motion assessment.
  - 5a. Practice goniometry and alternative measurement devices for range of motion assessment.
  - 5b. Demonstrate competency in the use of appropriate landmarks for goniometry.
  - 5c. Demonstrate competency in performing goniometry for all major joints for both active and passive range of motion.
  - 5d. Describe the normal range of motion for all major joints.
  - 5e. Describe normal joint end-feel for all major joints.
6. Describe special tests used for assessment purposes.
  - 6a. Explain common special tests used by the supervising PT to provide more in depth assessment of pathologies.
7. Identify joint mobilizations
  - 7a. Practice joint mobilizations I and II on instructor specified joints.
8. Identify the components of the normal gait cycle.
  - 8a. Identify the components of the normal gait cycle.
  - 8b. Delineate the muscle groups and joint motions related to the normal gait cycle.
  - 8c. Analyze the normal gait cycle.
9. Practice Professional Behaviors Student Self-Assessment criteria related to course content. (Professional behaviors student assessment adapted from APTA)
  - 9a. Commitment to Learning – Demonstrate the ability to self-assess, self-correct, and self-direct. Identify needs and sources of learning. Seek new knowledge and understanding.
  - 9b. Interpersonal Skills – Demonstrate the ability to interact effectively with patients, families, colleagues, other health care professionals, and the community. Demonstrate the ability to effectively deal with cultural and ethnic diversity issues.
  - 9c. Communication Skills – Demonstrate the ability to communicate effectively (i.e., speaking, body language, reading, writing, and listening) for a varied audiences and purposes.
  - 9d. Effective Use of Time – Demonstrate the ability to obtain maximum benefit from a minimum investment of time and resources.
  - 9e. Use of Constructive Feedback – Demonstrate the ability to identify sources and seek out feedback and to effectively use and provide feedback for improving personal interaction.
  - 9f. Problem-Solving – Demonstrate the ability to recognize and define problems, analyze data, develop and implement solutions, and evaluate outcomes.
  - 9g. Professionalism – Demonstrate the ability to exhibit appropriate professional conduct and to represent the profession effectively.
  - 9h. Responsibility – Demonstrate the ability to fulfill commitments and to be accountable for actions and outcomes.
  - 9i. Critical Thinking – Demonstrate the ability to question logically; to identify, generate, and evaluate elements of a logical argument; to recognize and differentiate facts, illusions, assumptions, and hidden assumptions; and to distinguish the relevant from the irrelevant.
  - 9j. Stress Management – Demonstrate the ability to identify sources of stress and to develop effective coping behaviors.
  - 9k. Use a SOAP note format to document lab skills.
10. Describe basic concepts related to the Guide for conduct of the PTA and the APTA Guide to Physical Therapist Practice.
  - 10a. Integrate basic concepts presented in the APTA Guide to Physical Therapist Practice related to course content.
  - 10b. Identify the parameters of the scope of practice of the PTA related to course content.