

COURSE SYLLABUS

PTHA 1413

**Functional Anatomy**

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PHYSICAL THERAPIST ASSISTANT PROGRAM

HEALTH OCCUPATIONS DIVISION

LEVELLAND CAMPUS

SOUTH PLAINS COLLEGE

Spring

COURSE SYLLABUS

COURSE TITLE: FUNCTIONAL ANATOMY  
COURSE CREDIT: 4  
CONTACT HOURS: 3 LECTURE, 3 LAB

INSTRUCTOR: Jackie Underwood  
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*OFFICE HOURS: As posted or by appointment*

SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE

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**I. GENERAL COURSE INFORMATION**

Prerequisites: The Profession of Physical Therapy (PTHA 1301), A&P I

**COMMON STUDENT LEARNING OUTCOMES**

**Upon successful completion of South Plains College PTA degree, the student will be able to:**

**KNOW (K)** - Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.

**COMPREHEND (C)** - Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.

**APPLY (A)** - Students will exchange ideas and information with clarity and originality in multiple contexts, act purposefully, reflectively, and respectfully in diverse and complex environment.

**EVALUATE (E)** - Students will demonstrate integrated learning from different areas and solve problems with creative thinking.

**A. COURSE DESCRIPTION:**

The student will learn the relationship of the musculoskeletal and neuromuscular systems to normal and abnormal movement. The student will learn correct use of goniometers in the measurement of anatomical joints throughout the human body. The student will learn correct technique for manual muscle testing throughout the human body.

**This is a Lecture/Lab course**

### **GENERAL LEARNING OBJECTIVES (PTHA 1513 functional anatomy)**

**Upon successful completion of the course, following a given plan of care and under the supervision of the PT, the student will be able to:**

1. Identify advanced human anatomy of the musculoskeletal system.
2. Analyze osteokinematics and arthrokinematics related to the human body.
3. Palpate and identify anatomical surface landmarks.
4. Demonstrate manual muscle testing using correct procedure.
5. Demonstrate goniometry and range of motion assessment using correct procedure.
6. Analyze the components of the normal gait cycle.
7. Explain basic postural alignment and body mechanics.
8. Analyze normal human movement.
9. Apply generic abilities related to course content.
10. 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. Identify advanced human anatomy of the musculoskeletal system.
  - a. Explain the function of the skeletal system.
  - b. Describe the gross anatomical components and relationships of the skeletal system.
  - c. Identify joint structures and components.
  - d. Define principles of joint motion.
  - e. Describe normal joint end-feel for all major joints.
  - f. Identify the normal curves of the vertebral column.
  - g. Identify the center of gravity in standing.
  - h. Explain the function of the muscular system.
  - i. Describe the gross anatomical components and relationships of the muscular system.
  - j. Compare and contrast the structure and function of the three major subtypes of skeletal muscles.
  - k. Describe the types of muscle contractions and give functional examples for each type.
  - l. Name the proximal/distal attachments and function of the major skeletal muscles.
  - m. 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.
  - a. Define planes and axes.
  - b. Identify the relationship of axes to the cardinal planes of motion and the anatomical position for individual joints.
  - c. Define Newton's Laws applicable to physical therapy and provide examples.
  - d. Define the terminology applicable to forces and loading.
  - e. Differentiate between pressure and forces.
  - f. Describe the relationship between physical laws and biomechanical principles of the musculoskeletal system.
  - g. Examine the components of levers and their use in the human body.
  - h. Describe the mechanical property of tissues.
  - i. Describe how the length-tension relation of muscle affects force production.
  - j. Explain the forces involved when an object is in equilibrium.

3. Palpate and identify anatomical surface landmarks.
  - a. Describe the correlation between bony structures and surface anatomy.
  - b. Demonstrate the ability to palpate bony structures.
  - c. Describe the correlation between muscular structures and surface anatomy.
  - d. Demonstrate the ability to palpate muscular structures.
  - e. Describe the correlation between connective structures and surface anatomy.
  - f. Demonstrate the ability to palpate connective structures.
4. Demonstrate manual muscle testing using correct procedure.
  - a. Define manual muscle testing and measuring techniques.
  - b. Demonstrate competency in performing manual muscle testing for all major muscle groups including assigning the appropriate grade.
  - c. Demonstrate competency in the palpation of the appropriate muscle(s) related to manual muscle testing.
  - d. Demonstrate competency in the ability to stabilize the appropriate joints during manual muscle testing.
5. Demonstrate goniometry and range of motion assessment using correct procedure.
  - a. Demonstrates correct use of goniometry and alternative measurement devices for range of motion assessment.
  - b. Demonstrate competency in the use of appropriate landmarks for goniometry.
  - c. Demonstrate competency in performing goniometry for all major joints for both active and passive range of motion.
  - d. Describe the normal range of motion for all major joints.
  - e. Describe normal joint end-feel for all major joints.
  - f. Describe special tests used for assessment purposes.
  - g. Explain common special tests used by the supervising PT to provide more in depth assessment of pathologies.
6. Analyze the components of the normal gait cycle.
  - a. Identify the components of the normal gait cycle.
  - b. Delineate the muscle groups and joint motions related to the normal gait cycle.
  - c. Analyze the normal gait cycle.
7. Explain basic postural alignment and body mechanics.
  - a. Differentiate between basic normal and abnormal postural alignment.
  - b. Demonstrate competency related to body mechanics to meet requirements outlined in the skill check and lab exam.
8. Analyze normal human movement.
  - a. Identify bony structures and osteokinematics involved with movement.
  - b. Identify muscles/groups involved with agonist/antagonist/synergistic movement.
  - c. Identify nerves required for innervation of muscle groups used in movement patterns.
  - d. Identify anatomy and physiology of bone, muscle, and nerve tissue as related to the creation of movement.
9. Apply generic abilities related to course content. (*Generic Abilities adapted from the Physical Therapy Program, University of Wisconsin-Madison, May et al. Journal of Physical Therapy Education, 9:1, Spring, 1995.*)

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- a. *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.
  - b. *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.
  - c. *Communication Skills* – Demonstrate the ability to communicate effectively (i.e., speaking, body language, reading, writing, and listening) for a varied audiences and purposes.
  - d. *Effective Use of Time* – Demonstrate the ability to obtain maximum benefit from a minimum investment of time and resources.
  - e. *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.
  - f. *Problem-Solving* – Demonstrate the ability to recognize and define problems, analyze data, develop and implement solutions, and evaluate outcomes.
  - g. *Professionalism* – Demonstrate the ability to exhibit appropriate professional conduct and to represent the profession effectively.
  - h. *Responsibility* – Demonstrate the ability to fulfill commitments and to be accountable for actions and outcomes.
  - i. *Critical Thinking* – Demonstrate the ability to question logically; to recognize and differentiate facts, illusions, assumptions, and hidden assumptions; and to distinguish the relevant from the irrelevant.
  - j. *Stress Management* – Demonstrate the ability to identify sources of stress and to develop effective coping behaviors.
  - k. Use a SOAP note format to document lab skills.
10. Describe basic concepts related to the APTA *Guide to Physical Therapist Practice*.
- a. Integrate basic concepts presented in the APTA *Guide to Physical Therapist Practice* related to course content.
  - b. Identify the parameters of the scope of practice of the PTA related to course content.

**ASSESSMENT USED BUT NOT LIMITED TO:**

1. Lecture Exams
2. Mid Term and Final Lab Exams
3. Quizzes
4. Comprehensive final exam

**COURSE GRADING**

Students will successfully complete clinical course PTHA 1301 with a grade of 75 % or higher. Students who fall below passing requirements will not be allowed to continue in the PTA program.

A= 90-100%  
B = 80-89%  
C = 75-79%

**BELOW 77% at midterm of the semester will result in the development of a**

**learning contract and the student being responsible for meeting established goals.**

Grade will be arrived at through attendance, class participation, written assignments, and exams. Lab grades will be based on participation, assignments, and Lab Skills exam. Minimum passing grade for a skills exam is 75. All Critical Safety requirements must be successfully demonstrated on lab exams or the student will receive a failing grade on the exam.

1. Lecture Unit exams – 40%
2. Lab exams – 40%
3. Class assignments – 10%
4. Professionalism – 10%

**ACCOMMODATION STATEMENT**

Students with identified disabilities should report their need for accommodations to the Special Services Office. Students with grievances related to discrimination on the basis of a disability may contact the Special Services Office, Counseling Center, or the Vice President for Student Affairs.

**ACADEMIC INTEGRITY:**

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

**DIVERSITY STATEMENT:**

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

**SPECIFIC COURSE/INSTRUCTOR REQUIREMENTS**

1. Handbook:  
Students are required to read the SPC Student Guide and the PTA Program Student Handbook and provide a signed Acknowledgement form for permanent student file.
2. Dress Code:  
Students are expected to follow the dress code as stated in the PTA student Handbook. You will need appropriate attire for lab.
3. Due Date:

A Course Assignment Calendar with due dates and description of assignments can be found on your Blackboard. For each day an assignment is late 10 points will be deducted; the 3<sup>rd</sup> day late the assignment will receive a failing grade.

4. Behavior:

Students are enrolled in a professional program and are expected to demonstrate professional behaviors such as respect, preparation for class, and dedication to learning.

Cell Phone use in class/clinic will not be tolerated. If the phone goes off during class or student is found to be texting the phone the student will be asked to leave class and receive 1 absence for the first incident. (see absence policy)

**Required Materials:**

Students must have internet access and an internet browser and MS Office. If you do not have a computer with a modem at home, you can access South Plains College's Computer Lab. Jessica Tucker ext. 2180 [jetucker@southplainscollege.edu](mailto:jetucker@southplainscollege.edu) will be your tech support contact for Blackboard.

**Text Books:**

*Trail Guide to the Body Workbook* ISBN 978-0-9829786-6-5 [optional]

*Trail Guide to the Body* ISBN 978-0-9829786-5-8

*Trail Guide to Movement* 978-0-9914666-2-7

*Physical Therapy Clinical Handbook for PTA* 978-1-284-10556-8

5. Student will be required to spend 5 hours over the semester, in the lab with supervised independent practice. Student will be required to document time in lab outside of normal class time.
6. Lab Exam times will be assigned and will be the student's responsibility to make arrangements. The **Pass** into lab exams will be skills check off sheet completed in lab class or open lab prior to scheduled exam.

**II. ATTENDANCE**

**A. ABSENCES**

Attendance is mandatory and there are no excused absences as found in the student handbook. Anything over 3 days, the student cannot meet the objectives and is withdrawn from the course. Any missed assignments, exams, or other activities must be completed and arrangements must be made with course instructor to turn in work.

**\*Students MUST inform PTA faculty about absences to the PTA faculty.**  
Student may call instructor or email through BlackBoard

B. TARDIES

Three tardies count as one absence.

Refer to the student handbook for additional explanation of attendance policies.

### III. PROFESSIONAL CONDUCT

Students are expected to follow the ethics and rules of professional conduct as outlined in the student handbook. Unprofessional conduct on the part of a student as outlined in the student handbook results in dismissal from the PTA program.

**You may not apply what you are learning to the general public as you are a student PTA and are learning physical therapy techniques. You will be practicing these skills on each other when you are in lab under the course instructor's supervision. If you are presently working in a clinic you cannot practice these skills on patients. Once you have passed the class, you still cannot practice the acquired skills in a clinic. You will only be permitted to apply these skills to the general public under a clinical instructor's supervision once you begin your clinical internships.**