

ODESSA COLLEGE
Physical Therapist Assistant Program
Fall 2011

COURSE SYLLABUS

Course Number: PTHA 1413
Course Title: **Functional Anatomy**
Credit Hours: 4 (3 lecture/1 lab)
Contact Hours: 48 lecture/48 lab
Corequisites: PTHA 1201, 1305
Instructor: Lynn McKelvey
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Office Hours: Monday 10:30-11:30, 3:00-4:30
Tuesday 9:00 – 10:00, 1:30 -4:00
Wednesday 10:30-11:30, 3:00-4:30
Thursday 3:00-4:30

Course Description:

The relationship of the musculoskeletal and neuromuscular systems to normal and abnormal movement. Provides the student with a working knowledge of the human musculoskeletal and neuromuscular systems and an understanding of how these systems interact to produce efficient human movement. (SCANS 1, 2, 6, 11)

Required Textbooks:

1. Clinical Kinesiology and Anatomy, 5th Edition; by Lippert; F.A. Davis, 2011
2. An Illustrated Atlas of the Skeletal Muscles, 3rd Edition; by Bowden; Morton Publishing, 2010
3. PTHA 1413 Course Packet for Fall 2011

Objectives:

Given the classroom and/or laboratory sessions, textbook/s, personal notes, handouts and other material, the student should be able to:

- 1.0 Identify and analyze actions and interactions of selected muscles and joints of the human body.
- 2.0 Identify and analyze actions and interactions of muscles and joints of the human body during gait.

Competencies:

- 1.0 To demonstrate competency in identifying and analyzing actions and interactions of selected muscles and joints of the human body, the student should be able to:
 - 1.1 Define terms related to functional anatomy.
 - 1.2 Define the anatomical subdivisions of the body.
 - 1.3 *Define and describe the rationale for anatomical position.
 - 1.4 Identify terms of direction and relationship of body structures.
 - 1.5 Identify the planes of the body.
 - 1.6 *Identify and explain terms of movement related to the function of the musculoskeletal system.
 - 1.7 *Identify lever and force systems and relate them to the function of the musculoskeletal system.
 - 1.8 *Identify the types, configurations, and specialized characteristics of connective tissue.
 - 1.9 *Identify the types, configurations, and specialized characteristics of muscle tissue.
 - 1.10*Identify the types, configurations, and specialized characteristics of nervous tissue.
 - 1.11*Identify and describe types of joints.
 - 1.12*List and describe types of muscle contraction / muscle tension and relate them to the function of the musculoskeletal system.
 - 1.13*Define and differentiate normal resting tone, muscle spasm, and spasticity.
 - 1.14*Define and describe active and passive insufficiency and relate them to the function of the musculoskeletal system.
 - 1.15*Define and explain the differing roles muscles can assume in producing movement.

- 1.16*Identify and describe central and peripheral neuromuscular control mechanisms and relate them to the function of the musculoskeletal system.
- 1.17*Identify joint structure; normal joint range of motion, selected ligament location and function; muscle origin, insertion, innervation and action; and unique characteristics of the joint complexes listed below.
 - a. Elbow and Forearm
 - b. Wrist and Hand
 - c. Shoulder
 - d. Knee
 - e. Pelvis and Hip
 - f. Ankle and Foot
 - g. Back and Neck
 - h. Head
 - i. Thorax
- 1.18*Palpate selected bony landmarks, ligaments, and muscle bellies, origins, and insertions of the joint complexes listed in 1.17.
- 1.19*Recognize results of muscle atrophy on surface anatomy.
- 2.0 To demonstrate competency in identifying and analyzing actions and interactions of muscles and joints of the human body during gait, the student should be able to:
 - 2.1 Define terms related to gait.
 - 2.2 *Identify and describe the phases of gait.
 - 2.3 *Identify joint actions during each phase of gait.
 - 2.4 *Describe floor reaction force, gravity, and momentum and describe their relation to muscle function during gait.
 - 2.5 *Deduce the muscles that are active during each phase of gait.
 - 2.6 *Describe selected gait deviations and their possible causes.

** Indicates integrated, core curriculum skills (math, reading, writing, communication, technological literacy and/or critical thinking)*

Methods of Presentation:

Lectures, demonstrations, laboratory practice, reading assignments, discussions, videos, and outside projects and assignments.

Course Requirements:

In order to receive credit for this course, all students must:

- 1. View assigned videos.
- 2. Complete all lab assignments.
- 3. Complete all lab practicals.
- 4. Complete all unit exams.
- 5. Complete the final exam.

Grade Compilation:	Labs / Videos	10%
	Quizzes	10%
	Lab Practical	15%
	Unit Exams	45%
	Final Exam	20%

Grading Scale:	90-100 = A
	80-89 = B
	70-79 = C
	60-69 = D
	Below 60 = F

Note: Students must make a minimum grade of C in each PTA course in order to remain in the program.

Procedure for Requesting Special Accommodations

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If the student has any special needs or issues pertaining to access to and participation in any class at Odessa College, please contact Becky Rivera-Weiss in the Office of Disability Services at 432-335-6861 to request assistance and accommodations.

Physical therapist assistant students with a disability who request reasonable accommodations should meet with the Program Director no later than the first week of classes. Reasonable accommodations will be provided as authorized by the Office of Disability Services as long as the ability to meet course requirements is not compromised. Physical Therapist Assistant faculty provide no accommodations without authorization. It is the student's responsibility to be a self-advocate when requesting accommodations. The student will need to meet with each course instructor at the beginning of class to discuss the particular accommodation needed. Documentation of special needs will be maintained in the student's file.

Professional Behavior:

Professional behavior is absolutely essential both while the individual is a student in this program as well as after graduation. The Professional Behaviors Assessment form provides a standard for behavior and a mechanism for self-assessment by the student as well as assessment by faculty during the academic component of the program. If a faculty member observes consistent failure to demonstrate acceptable professional behavior by a student, the faculty member will utilize the assessment form as a tool for counseling the student. **Failure to respond appropriately to counseling regarding professional behaviors will result in dismissal from the program.**

Attendance:

Regular attendance at lecture and lab is essential and has a direct effect on the final grade that a student earns in class. Non-attendance on the part of a student may result in grade penalty or may lead to dismissal from the program.

A student should attend all lecture and laboratory sessions. Habitual or patterned absenteeism in lecture or lab will not be tolerated. As soon as such a problem is identified, the student will be required to meet with the faculty to determine a course of action and, if the problem is not corrected, the student will be subject to dismissal from the program. Absences in laboratory sessions are particularly problematic because of the lost opportunity to practice skills; therefore, students will be penalized for missing more than one lab session per semester. Should a student miss more than one lab session, one point for each missed session will be deducted from the final course grade.

All absences must be reported to the appropriate faculty member prior to the start of class. If the faculty member cannot be reached directly, a voice mail message may be left. Failure to notify the faculty prior to an absence will affect the student's Professional Behaviors Assessment.

Acceptance of Late Assignments:

Projects or outside assignments are due at the beginning of class on the assigned due date. Late papers will receive a 5% per day grade penalty. This penalty will continue to be assessed each day the assignment is not turned in.

Missing an Exam:

Exams are defined as formally scheduled examinations covering a major portion of the course content and cumulatively comprising a relatively large percentage of the overall grade for a course. Every effort should be made by the student to be present for all exams. If it is necessary for a student to miss an exam, the instructor must be notified prior to the scheduled exam time and arrangements must be made for make-up. It is the instructor's option to give the same exam as the one missed or a different exam over the same content. If the exam is not made up within one class day, a 5% per day penalty will be assessed each day the exam is not taken.

Quizzes:

There are scheduled weekly quizzes in this course. Specific dates can be found on the course schedule. The lowest quiz grade will be dropped and the remaining grades will be averaged for a total of 10% of the final grade. Missed quizzes cannot be made up. If one quiz is missed, it will be the grade that is dropped before averaging. If more than one quiz is missed, zeroes will be recorded and averaged in the final grade. The instructor reserves the right to give unannounced quizzes should it become necessary to provide motivation to stay current on class assignments.

Worksheets

There are worksheets in the course packet. They are designed to encourage advance preparation for the material covered in class. All the content necessary for completing the worksheets can be found in the assigned textbook readings. Completing the worksheets is optional (except for the Terminology Worksheet, which is required); however, extra credit will be given for completion – a maximum of five percentage points added to the student's lowest unit exam grade, prorated for the number of worksheets completed and turned in.

Videos:

Seven anatomy videos are on reserve in the instructor's office. These videos are to be viewed by students on their own time. It is recommended that each video be viewed during the week that its topic is covered in class. Some students will find that it is more beneficial to view the videos before lecture, while some will prefer to view them after lecture. Students are to sign the card with each video after it is viewed.

Skeleton:

An articulated skeleton is available in the LRC for independent study by PTHA 1413 students. Students are advised that articulated skeletons are an expensive, limited resource, and as such, should not be damaged or misused. It is expected that all students taking advantage of this opportunity for increased access to a skeleton will respect college property and handle it with great care.

Course Outline:

- I. INTRODUCTION
 - A. Terminology
 - B. Anatomical Position
 - C. Planes of the Body
- II. LEVERS AND MUSCULAR ACTION
 - A. Components
 - B. Classes
- III. TISSUES OF THE BODY
 - A. Epithelial
 - B. Connective
 - 1. Fibrous
 - 2. Cartilage
 - 3. Bone
 - C. Muscular
 - 1. Anatomy
 - 2. Contractile Properties
 - D. Nervous Tissue
 - 1. Anatomy
 - 2. Conduction
- IV. MUSCULOSKELETAL SYSTEM
 - A. Attachments
 - B. Fiber Arrangement
 - C. Types of Contraction
 - D. Muscle Actions
- V. CENTRAL NEUROMUSCULAR CONTROL
 - A. Brain
 - B. Spinal Cord
- VI. PERIPHERAL NEUROMUSCULAR CONTROL
 - A. Nerve Supply
 - B. Muscle Spindle
 - C. Golgi Tendon Organ
- VII. THE UPPER LIMB
 - A. Elbow/Forearm

1. Bones
 2. Joints
 3. Muscles
 4. Actions
- B. Wrist/Hand
1. Bones
 2. Joints
 3. Muscles
 4. Actions
- C. Shoulder
1. Bones
 2. Joints
 3. Muscles
 4. Actions

VIII. THE LOWER LIMB

- A. Knee
1. Bones
 2. Joints
 3. Muscles
 4. Actions
- B. Hip
1. Bones
 2. Joints
 3. Muscles
 4. Actions
- C. Ankle/Foot
1. Bones
 2. Joints
 3. Muscles
 4. Actions

IX. THE HEAD, NECK, & TRUNK

- A. Bones
- B. Joints
- C. Muscles
- D. Actions

X. RESPIRATION

- A. Bones/Joints
- B. Muscles
- C. Actions

XII. GAIT

- A. Upright Posture
- B. Phases
- C. Joint and Muscle Actions
- D. Deviations