



**ODESSA COLLEGE**  
**Physical Therapist Assistant Program**  
**Fall 2012**

**COURSE SYLLABUS**

<b>Course Number:</b>	PTHA 1413	
<b>Course Title:</b>	<b>Functional Anatomy</b>	
<b>Credit Hours:</b>	4 (3 lecture/1 lab)	
<b>Contact Hours:</b>	48 lecture/48 lab	
<b>Corequisites:</b>	PTHA 1201, 1305	
<b>Instructors:</b>	Tana Pipes (primary)	Matt Bertrand
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<b>Office Hours</b>	Tana:	Matt:
Monday	10:30-11:30, 2:30 – 4:30	10:30-11:30, 2:30-4:30
Tuesday	1:00-3:00	8:30 – 9:00, 2:30 -4:00
Wednesday	10:30-11:30, 2:30 – 4:30	10:30-11:30, 2:30 – 4:00
Thursday	2:30 – 4:30	2:30 – 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. (ICOs 1, 2)

**Required Textbooks:**

1. Clinical Kinesiology and Anatomy, 5<sup>th</sup> Edition; by Lippert; F.A. Davis, 2011
2. An Illustrated Atlas of the Skeletal Muscles, 3<sup>rd</sup> Edition; by Bowden; Morton Publishing, 2010
3. PTHA 1413 Course Packet for Fall 2012

**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. This course Functional Anatomy PTHA 1413 / Fall has been identified as a course by Career, Technical, and Workforce Education as one in which teaching and learning strategies adopted by AVID will be implemented. As a student in PTA program, you will be expected to develop an understanding of the strategies, to model the strategies, to maintain fidelity of implementation, and to examine how these strategies may impact your effectiveness as a professional in your chosen area of occupation, either through coursework or practicum experience as outlined by the course instructor.

#### **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 Practicals	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.*

### **Student Success**

The Odessa College Student Success Coaches will help you stay focused and on track to complete your educational goals. If an instructor sees that you might need additional help or success coaching, he or she may submit a Retention Alert or a Starfish Alert. A Student Success Coach will contact you to work toward a solution.

### **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 provides 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.

**Expectations for Engagement – Online Learning**

To help make the web-based learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the online learning environment. Students and instructors are welcome to exceed these requirements.

**Reasonable Expectations of Engagement for Instructors**

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
  - provided my contact information at the beginning of the syllabus;
  - respond to all messages within 24 hours if received Monday through Thursday and within 48 hours if received Friday through Sunday; and,
  - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.
2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
  - provide clear information about grading policies and assignment requirements in the course syllabus, and
  - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.
3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
  - post grades for discussion postings within one week of the discussion thread closing.
  - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

**Reasonable Expectations of Engagement for Students**

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will

- line up alternative computer and internet access in case my primary computer crashes or my internet services is unavailable;
  - recognize that the college provides free wi-fi and computer labs during regular campus hours to help me with accessing my course; and,
  - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my equipment or service is unreliable.
2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to
    - getting “kicked off” of the system during tests or quizzes;
    - having trouble submitting assignments; and
    - dealing with a traumatic personal event.
  3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
    - seek out help from my instructor and/or from tutors;
    - ask questions if I don’t understand; and,
    - access my course several times during the week to keep up with assignments and announcements.

### **Expectations for Engagement – Face to Face Learning**

To help make the learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the learning environment. Students and instructors are welcome to exceed these requirements.

#### **Reasonable Expectations of Engagement for Instructors**

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
  - provided my contact information at the beginning of the syllabus;
  - respond to all messages in a timely manner through telephone, email, or next classroom contact; and,
  - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I’m unavailable.
2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
  - provide clear information about grading policies and assignment requirements in the course syllabus, and
  - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.
3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
  - return classroom activities and homework within one week of the due date and
  - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

#### **Reasonable Expectations of Engagement for Students**

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
  - attend the course regularly and line up alternative transportation in case my primary means of transportation is unavailable;
  - recognize that the college provides free wi-fi, computer labs, and library resources during regular campus hours to help me with completing my assignments; and,
  - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my personal computer equipment or internet service is unreliable.
2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to,
  - missing class when a major test is planned or a major assignment is due;
  - having trouble submitting assignments;
  - dealing with a traumatic personal event; and,
  - having my work or childcare schedule changed so that my classroom attendance is affected.
3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
  - seek out help from my instructor and/or from tutors;
  - ask questions if I don't understand; and,
  - attend class regularly to keep up with assignments and announcements.

### **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 LRC. 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.

The SEI process for face-to-face and online courses is scheduled for the week of November 26th.

### **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