

Functional Anatomy
PTHA 1513
Semester:
Course Dates:

Course Descriptions: PTHA 1513 - Functional Anatomy (4-3-6)

Study of human anatomy and its application to the motion of the musculoskeletal system as it relates to normal activities and dysfunctions. Integration of skills related to the kinesiological assessment of the human body.
Prerequisites: BIO 2304

Purpose: Surface and functional anatomy will be stressed with emphasis on the biomechanical principles required for a basic understanding of human movement. Lab activities are designed to enhance the skills needed to provide feedback to the supervising physical therapist regarding the patient's/client's status, both physically and functionally.

Credit: Five (5) semester hours (3 lecture and 6 lab) 144 Contact hours

Course Time/Location:

Instructors:

Office Hours/Location

Phone:

Email

Website:

Arranging conferences/appointments

Required Textbooks:

- Behnke, Robert S. *Kinetic Anatomy*; Human Kinetics, Champaign, IL, 2006.
- Kapit, Wynn, Elson, Lawrence M. *The Anatomy Coloring Book*; 3rd Edition, Pearson Education, Glenview, IL, 2002.
- Hislop, Helen, Montgomery, Jacqueline. *Daniel's and Worthingham's Muscle Testing: Techniques of Manual Examination*; 8th Edition, W. B. Saunders Co., Philadelphia, 2007.
- Norkin, Cynthia & White, D. Joyce. *Measurement of Joint Motion: A Guide to Goniometry*; 3rd Edition, F. A. Davis Co., Philadelphia, 1995.

PROGRAM STUDENT LEARNING OUTCOMES

1. Upon completion of the second clinical course, the student will demonstrate completion of all 12 entry level skills in the professional behaviors section of the PTA MACS (Mastery Assessment of Clinical Skills)
2. Upon completion of the third and final clinical course, the student will demonstrate completion of the entry level skills in the data collection section of the PTA MACS (Mastery Assessment of Clinical Skills)
3. Upon completion of the third and final clinical course, the student will demonstrate completion of the entry level skills in the intervention section of the PTA MACS (Mastery Assessment of Clinical Skills)
4. Upon completion of the third and final clinical course, the student will be assigned a score of entry level or better on the final progress report of the PTA MACS (Mastery Assessment of Clinical Skills).
5. Upon completion of the third and final clinical course, the student will demonstrate the skills necessary to synthesize research literature and present an inservice to clinical faculty following evidence-based practice guidelines

Course Objectives: Upon successful completion of this course, the student will be able to:

1. Briefly explain how joints are classified and recognize an example of each classification or type.
2. Demonstrate the motions that each joint can do on a manikin, another student, or on one's self.
3. Define the various roles a muscle can play (e.g. agonist, antagonist, synergist, etc.).
4. Define the types of muscle configurations and provide an example of each type.
5. Briefly explain the organization and function of the nervous system.
6. Explain how the nervous system and the muscular system interact to provide the human body with controlled mobility.
7. List the following for any given joint of the body:
 - a. anatomical landmarks involved
 - b. type of joint
 - c. bones and bony landmarks involved
 - d. motions which may occur
 - e. prime movers of each motion
 - f. origin, insertion, innervation and action of each muscle listed that acts on the joint
 - g. major ligaments which support the joint.
8. Correctly define each term given a list of terminology used in biomechanics.
9. Correctly identify each class of lever and give an example of each found in the human body.
10. Give the purposes, indications, contraindications, and principles of goniometry.
11. Give the purposes, indications, contraindications, and principles of MMT.
12. Correctly identify the parts of the goniometer.
13. Correctly measure the joint ROM of each joint of the body.
14. Identify the different grades given in MMT and give the criteria for each.
15. Correctly MMT each joint of the body.
16. Demonstrate proper infection control techniques at all times.
17. Document patient's performance and response to all clinical skills attained in this course.
18. Exhibit an understanding of social, economic, and demographic factors as they relate to clinical skills attained in this course.
19. Demonstrate the ability to include patient/family education in all clinical skills attained in this course.

In addition to these general course objectives, each student will be expected to meet specific chapter objectives that will be distributed at the beginning of each unit. In completing the course and unit objectives, the student will recognize that all objective tests and measures, as well as all therapeutic interventions performed by the PTA, are determined by and performed under the direction and supervision of the PT.

Course Schedule/Assignments: See handout provided on first class date and posted to Blackboard

Facilities: Classes will be held on the Eastview Campus in the PTA Classroom (9307) or Lab (9301).

Course Outline:

1. Organization of the Body
 - a. Anatomical positions
 - b. Planes of motion
 - c. Terms of movement
 - d. Center and line of gravity
2. Tissues of the Body
 - a. Epithelial and connective tissue
 - b. Muscle tissue
 - c. Nervous tissue
3. Systems of the Body
 - a. Skeletal system
 - b. Muscular system
 - c. Nervous system
 - d. Vascular system
4. Biomechanics and Levers
5. Survey of the Body by Region*
 - a. Skull, brain, and facial muscles
 - b. Head, neck and spine
 - c. Pelvis and hip joint
 - d. Knee joint
 - e. Ankle and foot
 - f. Shoulder joint complex
 - g. Elbow, forearm, wrist and hand
 - h. Brachial plexus
 - i. Lumbosacral plexus
6. Goniometry
 - a. Purposes
 - b. Indications and contraindications
 - c. Principles and techniques
 - d. Normal ranges
7. Manual Muscle Testing
 - a. Purposes
 - b. Indications and contraindications
 - c. Principles and techniques
 - d. Muscle grading

* Note: Survey of body by region to include bones, joints, ligaments, nerves, muscles & motions

SCANS: The following SCANS competencies will be addressed in this course (See PTA Student Handbook for clarification):

Students will have multiple opportunities to: identify, organize, plan and allocate resources (Resources); exercise leadership, participate as a team, teach others and develop skills in cultural competency (Interpersonal) acquire and use information using oral, written and multi-media methods (Information); work with a variety of technologies (Technology); read, write, perform mathematical operations, listen and speak to groups (Basic Skills); think creatively, make decisions, solve problems, visualize, use varied learning techniques, analyze underlying principles of relationships and ethics (Thinking Skills); display responsibility, self-esteem, sociability, self-management, integrity and honesty (Personal Qualities).

Attendance: Prompt and consistent attendance is essential for good performance in this course. If you are going to miss class, it is imperative that you notify the instructor as soon as it is evident to you. Policies for tardiness and absences will be enforced as directed by the 2009 Student Handbook.

Instructional Methods: The material will be presented in lecture/demonstration format using a variety of teaching methods and will utilize audiovisual methods whenever possible. Each student will be able to download class notes and review material from the instructor's webpage. Activities that promote active learning and critical thinking such as small and large group discussion, student presentations, peer teaching and case study presentations will also be incorporated as deemed appropriate. Performance of specific psychomotor techniques will be presented in laboratory sessions. Open labs will be offered (times to be announced) with faculty available to answer questions and provide opportunities for practice.

Assignments: Prior to attending each class, students should review all unit objectives and required readings. Students will be allowed to review graded exams during open lab sessions and test review sessions or at any other time as long as a faculty member is present to unlock the exams. Homework assignments are due on the assigned date; 5 points will be deducted for each day past the due date that it is late. Homework assignments may be submitted electronically when possible. See Completion of Assignments.

Completion of Assignments: Students must complete all assignments in order to complete the course. If assignments are not completed by the day that grades are due, the student will receive an incomplete in the course and will not be allowed to continue progression in the program until a grade of C or better is assigned. Students may not take mid-term and/or final lab exams until all required check-offs have been successfully mastered. All unit exams must be completed in order for the student to sit for the mid-term or final exam respectively.

Laboratory Preparation: All students must be prepared for laboratory sessions at ALL times. Students will be given one verbal warning. Following incidences will result in two points subtracted from the final average for each day the student is not prepared. Laboratory attire will consist of shorts for the men and shorts and a halter-top for the women. Shorts should be loose enough to allow for palpation of hip musculature.

Grade Compilation:

4 Lecture Exams**	@ 7% each
3 Picture Exams	@ 4% each
Final Written Exam**	@ 7 %
3 Regional Lab Practicals**	@ 10% each
Project (MMT/Goni Cards)	@ 10 %
Mini-teaches (each student does 3)	@ 2% each
Assignments (ALE's, lab manual)	@ 7%
100 % Total	

Grading Scale: 93 – 100 = A 83 – 92 = B 73 – 82 = C 63 – 72 = D 62 or below = F

****Note:** A student must have a minimum written exam average of 73% **and** a minimum lab exam average of 73% for the course at the time of completion. Projects, class participation, and homework will not be included for a course grade calculation if either the written or lab exam average is less than a 73. Any student receiving a “D” or “F” must withdraw from the Physical Therapist Assistant Program, but may reapply for readmission the following year as outlined in the Student Handbook.

The student has one week in which to review questions missed on written and/or practical exams for study and mastery of material and to discuss any grade discrepancy with the instructor. After the one-week period only the instructor can initiate review of exams for grade changes for any given exam.

As per the 2011 Student Handbook, it is strongly recommended that any student earning less than an 80 on any exam should attend open lab sessions or meet with the instructor 1:1 outside of class.

Lab Practical Retake: In order to have a successful completion of a lab practical, a score of 73 is required and no zeros may be scored in essential criteria. If this is not achieved, the student has one opportunity to retake the examination for successful completion. Regardless of the lab practical score, if a student scores a zero in any of the essential criteria categories, the lab grade assigned will not be higher than a 72. If the overall score is lower than a 72, that score will be taken for the initial attempt. The score issued on the first attempt and the score on the retake

lab practical will be averaged together to give the student their recorded lab practical grade. The grading instructor and the student determine scheduling of the retake lab practical.

Students with Disabilities: Anyone with special needs requiring accommodations should notify the Department Chair immediately. If you have not contacted special services, please do so as soon as possible. It is of utmost importance that you follow this procedure in order for us to provide you with a quality educational process.

Scholastic Dishonesty: Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, research or self-expression. Academic work is defined as, but not limited to, exams, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework. See the ACC Student Handbook for a full discussion of the college's scholastic dishonesty policy.

Academic Freedom: Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption and refrain from name-calling or other personal attacks.

Withdrawal: It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

Incompletes: An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Statement on scholastic dishonesty: A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents.

Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at:
<http://www.austincc.edu/current/needtoknow>

Student rights and responsibilities: Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline,

guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Safety statement: Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at <http://www.austincc.edu/ehs>. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at <http://www.austincc.edu/emergency/>.

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

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Use of acc email: All College e-mail communication to students will be sent solely to the student's ACC mail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACC mail account when communicating with instructors and staff. Instructions for activating an ACC mail account can be found at <http://www.austincc.edu/accmail/index.php>.