San Diego State University - Doctor of Physical Therapy Program

DPT 725 CLINICAL ANATOMY I

Units: 4, Clock Hours: Lecture 45, Lab 45

Fall 2014

TIME: 11:00am – 12:15pm ; TTh

Lecture: P-149 ; Lab: LSN-1

Course Instructor: Sandy Garver, M.S. Phone: (619) 594-8027
Office: LSS-271
Office hours: Mon 2-3; Wed 8-9 & 2-3 (by appt) ; Fri 10-1 (most)

Lab Instructor: Matt Doherty, M.S. Phone: 
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Office hours: By Appointment

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E-mail: mdoherly@mail.sdsu.edu

Course Prerequisites
Admission into the DPT program.

Course Material

Required Lecture Text

Misc. Lecture Material
1. i>Clicker™ - Can be purchased at SDSU Bookstore
2. ParSCORE™ FORMS: 7- narrow ParSCORE forms (# F-289-ERI)

Required Laboratory Text

Required Laboratory Materials - (Available at Aztec Shops or independent sources)
1. SPIRAL NOTEBOOK
2. DISSECTION INSTRUMENTS. – McCoy Medical advanced student dissection kit. Share 99039
3. LABORATORY EQUIPMENT
   o A white laboratory coat (with knit cuff) is required
   o Two Boxes - High Five® Long Cuff Nitrile Exam Gloves.
   o Eye Safety Goggles - must have seal - Uvex® Flex Seal Goggles w/Clear lens; Fabric headband (suggested)

Optional Texts

Optional Laboratory Material
1. SCRUBS - Medical scrubs, or old T-shirt and pants, to be worn beneath the lab coat. These clothes would remain in the lab.
2. Respirator Mask - 3M Half Face piece vapor mask (6000 series reusable) – See Below
3. Respirator cartridges - 3M Organic Vapor / formaldehyde cartridge (6005) – See Below

Respirator Use for Anatomy Students Students who choose, or prefer, to wear a respirator must do the following:
1. Contact EHS (594-6778) to schedule the Respirator Use Training & Fit-Testing. Upon completion, provide Training and Fit-Testing Certificate to instructor. Students are required to consult their physician for approval for respirator use. This must be done prior to training and “fit-testing”.
2. Purchase and use the fit-tested size and brand of respirator and formaldehyde/organic vapor filter cartridges from the SDSU Bookstore.
Purpose/Course Description

The applied anatomy of the upper and lower extremities of the human body with emphasis on: 1) general biomechanics, including kinematics and kinetics of the appendages; 2) general articulation divisions of the body 3) joint anatomy and extremity movement patterns; 4) the anatomical structures required to produce articular movement including muscles, vasculature, and nervous innervation; and 5) gross and microscopic anatomy of common clinical conditions or diseases of the appendages and girdles. This course will provide the initial framework for the evaluation and management of musculoskeletal problems.

Lecture topics during the initial portion of the course will emphasize biomechanics, tendon and ligament mechanics, muscle mechanics, as well as articular classifications and movements. For the remainder of the semester, lecture topics will focus on the surface and gross anatomy of the lower and upper extremities, including musculoskeletal structures, associated peripheral innervations, vascular distributions and lymphatic drainage. Included with each region will be the associated common clinical conditions and disorders of the appendages. Laboratory sessions will consist of cadaver dissection, histological analysis of disease, muscle function assessment, palpation, and movement analysis. A major goal of the course will be to provide the student with a three-dimensional understanding of the function of the lower and upper extremities.

Teaching Methods and Learning Experiences

The format of this course will be primarily laboratory, lecture, models, charts, anatomical specimen, and the use of specific computer software relevant to clinical anatomy. Laboratory experiences will include cadaver dissection, review of prosections. Lectures and laboratory experiences will be augmented by required textbook and journal readings.

Program Goals, Expected Student Outcomes, and Course Objectives:

1.1 Students will demonstrate mastery in foundational science concepts

a. Student Learning Outcomes Upon successful completion of this course, the student shall be able to:

1. State the basic principles of osteogenesis and development as applied to limb formation.
2. Identify the developmental sequence of the upper and lower extremity, as well as state the common congenital disorders that lead to appendage malformation.
3. Identify the characteristics of various connective tissues types throughout the human body, and identify the changes that occur with aging of this tissue.
4. Identify the characteristics and development of bony and muscular tissue throughout the human body, and identify the changes that occur with aging of this tissue.
5. Identify the musculoskeletal anatomy of the appendages.
6. Identify the origin, insertion, and muscle actions of the lower and upper extremity musculature.
7. Identify the muscles and joints involved when performing common movements and functional tasks.
8. Identify the appropriate peripheral nerves, plexus, cord, etc. innervating the muscles, bones, and joints of the appendages, including dermatomes and myotomes.
9. Identify the arterial distribution and lymphatic drainage of the appendages.
10. Identify muscles, ligaments, arteries and other anatomical structures on a dissected human cadaver.
11. Identify the general arrangement and detailed function of the various anatomical structures and tissues located in the lower and upper extremity utilizing cadaver dissection and various anatomical media.
12. Identify and describe the influence of various pathological conditions affecting the upper and lower extremities, or joint mechanics and function.
13. Appropriately identify the anatomical and clinical terminology associated with the upper and lower extremities.
14. Participate in 6 cadaver presentations demonstrating anatomical knowledge of the human body.
15. Evaluate and assess peer knowledge of cadaver information.
16. Participate in the dissection of a cadaveric specimen, while maintaining the highest standard of ethical and legal behavior.
Course Outline

I. Medical & Regional Terminology

II. Embryology
   A. Osteogenesis: Intramembranous & Endochondral
   B. Embryological formation of appendages
   C. Formation of Myotomes
   D. Formation of Dermatomes
   E. Congenital Diseases

III. Histology
   A. General Histology of all Tissues
      i. Specific Characteristics
      ii. Connective Tissue Types
         1. Fiber Types and location in body
   B. Histology of Cartilage
      i. Types & Characteristics
      ii. Function
      iii. Matrix & Fiber Content
      iv. Disease of Cartilage
   C. Histology of Bone
      i. Types & Characteristics
      ii. Function
      iii. Matrix & Fiber Content
      iv. Bone Diseases
   D. Histology of Muscle
      i. Muscle injury & repair
      ii. Function
      iii. Muscle Types

IV. Joint Structure and Function
   A. Joint Design
   B. Joint Classifications
      1. Synarthroses
      2. Diarthroses
   C. Joint Function

V. The Upper Limb
   A. Articulations and Mechanics
      1. Shoulder Complex
         a. Scapulothoracic Joint
         b. Sternoclavicular Joint
         c. Acromioclavicular Joint
         d. Glenohumeral Joint
         e. Muscles of the Shoulder Complex
      2. Elbow Complex
         a. Humeroradial and Humeroulnar Joints
         b. Superior and Inferior Radioulnar Joints
         c. Muscles of the Elbow Complex
      3. Wrist and Hand Complex
         a. Wrist Complex
         b. Hand Complex
         c. Prehension
            i. Power Grip
            ii. Precision Handling
   B. Muscles and Nerve Supply of Upper Limb
      1. Myotomes
      2. Dermatomes
      3. Muscle Function of the Upper Limb
      4. Brachial Plexus Identification & Innervation of terminal nerves
   C. Blood Supply and Lymphatics
Attendance & Participation in Lecture and lab - See “DPT Student Handbook”

One of the professional responsibilities of a physical therapist student is to attend every scheduled class. Learning experiences in the curriculum are arranged sequentially, to ensure that new information, knowledge, and skills are integrated with previously introduced material. In addition, the DPT curriculum includes significant opportunities for collaborative learning, where interaction between and among students and faculty are critical components of the students’ learning. Therefore, these learning experiences cannot be repeated and your attendance is a professional responsibility.

Corrective action for unexcused absences: Attending class is expected during the entire DPT curriculum. Missing class adversely affects the learning experience and contributes to poor performance. Two unexcused absences in a course will result in a grade of failure for that course. Please see your student handbook for complete details on policies for attendance and absences.

The laboratory class only meets once per week, and the students within each dissecting team expect the participation of every member. A missed lab not only adversely affects you, but it also adversely affects the coordinated dissection process. If you miss a cadaver laboratory session for a reason other than sickness or family emergency, 10 points will be deducted from the overall lab grade as a “non-participation” penalty.
iClicker™ Points
You will have iClicker™ questions integrated into the lecture each week. These questions will be drawn from the previous lecture, assigned reading, or the current lecture. As long as the student has answered 75% of the questions correctly, that student will receive a total of 10 bonus iClicker™ points. No points will be awarded if the student answers less that 75%. At the end of the semester, those bonus iClicker™ points will be added to the student’s overall total.

Classroom Tardiness - See “DPT Student Handbook”
Being on time to classes is expected. Missing class adversely affects the learning experience and contributes to poor performance. Tardiness also disrupts the class, your peers and instructor. Like unexcused absences, tardiness is considered irresponsible, disrespectful and unprofessional.

Corrective action for tardiness: Students in violation of the tardiness requirement will first receive a verbal warning with corrective instruction for the first unexcused tardiness. If the same student breaks the tardiness policy a second time, the violation will result in the student not being allowed in the class and will receive an unexcused absence for that day. This may result in a reduced letter grade at the discretion of the instructor. A third unexcused tardiness violation will be considered a second unexcused absence and will result in a grade of failure for that course. Please see your student handbook for complete details on policies for classroom tardiness.

Attire for Lecture - See “DPT Student Handbook”
Attire for Cadaver Dissection Laboratory – See “Safety Procedures in the Dissection Laboratory”

Grading Criteria
Clinical Anatomy is divided into three units. As a result, the lecture will have three quizzes, three midterm examinations, and one cumulative exam (worth about 75% of the course grade). The laboratory will have six weekly cadaver presentation (2 per unit), and three lab practical exams (worth about 25% of the course grade). The three lecture quizzes will include material discussed in lecture, and specific clinical material that may be discussed in lab. The three lecture midterms will include lecture, reading, and lab material. The three lab practical exams and cadaver presentations will be on lab material, only, and will be taken in lab. Grades will be determined based on the following percentages of total points earned for the course: 70-79% C; 80-89% B; 90-100% A. The minimum requirements for a passing grade are 70% of total possible points.

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<tr>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>A</td>
<td>89.45 – 100%</td>
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<tr>
<td>B+</td>
<td>87.45 – 89.44%</td>
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<tr>
<td>B</td>
<td>79.45 – 87.44%</td>
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<tr>
<td>C+</td>
<td>77.45 – 79.44%</td>
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<tr>
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<td>D</td>
<td>59.45 – 67.44%</td>
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<tr>
<td>F</td>
<td>0% - 59.44%</td>
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Possible Lecture Points
• QUIZZES (3 X 15 points each) = 45 points
• MIDTERM Examinations (3 X 100) = 300 points
• FINAL Examination (cumulative) = 100 points

TOTAL LECTURE POINTS = 445 points

Possible Laboratory Points
• LAB PRACTICAL Examinations (3 x 40) = 120 points
• Weekly Cadaver Presentation (6 x 5) = 30 points

TOTAL LAB POINTS = 150 points

OVERALL TOTAL = 595 points
Class Policies

1. All lecture and laboratory sessions will start promptly at the designated time. The student is responsible for all lecture and laboratory material presented regardless of attendance.
2. As a courtesy to fellow students and the instructors, if delayed in getting to class on time please enter through rear door and find seat in the back of the classroom. Once in class, plan on staying until a formal break is announced – leaving the classroom during a lecture is disruptive to both the professor and fellow students.
3. All reading assignments will be completed prior to both lecture and laboratory.
4. Quizzes and Examinations must be taken on the day specified in the course schedule. No make-up examinations will be given.
5. Plagiarism or any other form of cheating will result in a grade of Failure (F) in the class. Class activities, in which students may work together to complete assignments, will be specifically announced.
6. Computer use in lecture is permitted, however you are not permitted to use your computer in lab. If you use your computer in lecture, you are expected to be using it only for DPT 725 material. If you use our class time to do work for another class, play games, email, etc., you will be asked to leave class, and you will be marked as an unexcused absence for that day.
7. The Faculty is committed to treating you in a professional manner, as well as making this course a meaningful experience for you. If you need any help or further explanation of presented material, please see the Faculty as soon as possible!

General Regulations in the Human Anatomy Laboratory

Dissection of the human body is a privilege, which has been granted to the physical therapy student as part of his/her professional training. The privilege of dissection demands a corresponding sense of responsibility in all students who have access to the laboratory. Failure to observe these rules, either during scheduled or unscheduled hours may result in barring the student from further use of the laboratory and laboratory materials or expulsion from the Physical Therapy Program.

1. Visitors are not allowed in the dissecting room at any time. Permission to enter the dissecting room must be given by a Physical Therapy Faculty member.
2. Anatomical materials must never be removed from the laboratory.
3. Each team of students is responsible for the condition of the cadaver and must take all precautions to prevent its deterioration. It is essential that the cadavers be moistened frequently, particularly prior to leaving the dissecting room. At the end of each lab session, the cadavers must be wrapped and covered in order to prevent desiccation. Only use the paper toweling that is provided in the Laboratory for cleanup of dissected material.
4. Smoking, eating, or drinking in the laboratory is not permitted. Radios or cameras should not be brought into the laboratory at any time.
5. A conscientious effort should be made to maintain the laboratory in the neatest possible order at all times. Dissected materials or any item that has contacted the cadavers must be disposed of in the red waste receptacles marked BIOHAZARDOUS MATERIALS.
6. All trash should be placed in the appropriate beige trash receptacle. Do not place trash in biohazard materials receptacles!
7. The doors to the Anatomy Laboratory must remain closed at all times.
8. Laboratory coats and latex gloves used at the dissecting table CANNOT be worn outside the dissecting room. All personal items, such as coats and backpacks, should be stored in assigned lockers in the Laboratory.
9. Each cadaver has an identifying number, and the numbered tag must be kept with the cadaver at all times.
10. Under no circumstances are PHOTOS or VIDEOS of cadavers, models, charts, or any other laboratory material allowed. Taking, distributing, or receiving photos of the lab equipment, including models, charts, cadavers, or other specimen is considered CHEATING for this course.
11. To enforce rule #9, no cell phones, personal computers or portable storage devises are allowed out in the labs. Please store your electronic devices in your assigned locker.
Safety Procedures in the Dissection Laboratory
1. The MSDS chemical list folder, "What to do in an emergency" form, and First Aid kit are all located in the lab near the “Emergency Shower Wash” area. Your lab instructor will point them out at the start of the semester, and you are encouraged to read over these documents. All injuries must be reported to the lab instructor immediately.
2. Please be sure to use the hemostat to change scalpel blades. This helps prevent the blade from slipping in the fingers, which could cause lacerations.
3. Dispose of broken glass or old scalpel blades in the red Sharps plastic container. Do not leave used blades on the table or put them in the trash bin.
4. Precautions must be taken to prevent injuries caused by needles, scalpels, and other sharp instruments. Strong communication between fellow dissecting team members is essential to avoid injuries. In general, avoid using a needle or sharp probe for dissecting, and use scalpels sparingly. Blunt dissection (using hands) is the preferred method of dissection.
5. After each dissection, clean your dissecting area thoroughly, wet & cover your cadaver, and latch the metal hood over the cadaver. At no time should you leave dissecting equipment on or in the cadaver, or inside the cadaver bag.
6. Each student is responsible for cleaning their own dissecting tools or trays, or the department-owned dissecting tools or trays that may have been used that day.
7. The cadavers are embalmed with various preserving fluids, including formaldehyde and phenol. These preserving fluids can irritate the mucous membranes and can be absorbed through skin contact. The following precautions should be observed:
   - Wear appropriate gloves, pants, lab coats and shoes to prevent excessive skin contact.
   - Closed toe shoes must be worn in the lab. Sandals are not allowed. You may wish to bring some old shoes for dissection days to keep in your assigned locker.
   - Wear appropriate eye-protection goggles for any work using a bone saw. (see Lab Materials)
   - It is strongly suggested that you avoid wearing soft contact lenses in the laboratory since the lenses can absorb and hold formaldehyde, thus irritating the eyes and damaging the contact lens.
   - Optional respirator masks (with approved cartridges) may be used for contact with exposed cadavers. (see Lab Materials). Please follow SDSU “Fit-Test” guidelines if you choose to wear a respirator.
   - Use only specifically marked wetting solutions to moisten the cadaver.
   - In case of accidental chemical or tissue contamination of the eye, there is an “Eye-Wash” located near the entrance to the lab. Students should be aided in flushing their eye or body for 15 minutes with water.
   - In case of accidental chemical or tissue contamination of the skin, thorough washing with soap and water should be adequate. If burning or a more severe reaction occurs, there is an emergency “Shower Wash” near the entrance to the lab. For all injuries, students are encouraged to seek medical attention.
   - Wash hands thoroughly every time you leave the lab, and at the end of each lab.
9. All Students must sign a "Student Safety Acknowledgement" form, stating that they have read and understand the entire lab safety and cadaver care rules list, and that they agree to abide by those stated rules. Students who have a major or repeated violation of the lab rules / anatomical gift policy may be given an “F” in the course.

The Body Donor Program
The human cadaver material that you will be studying was donated to various Universities through the body donor program. This program is essential to a meaningful study of gross human anatomy. In a very real sense your enrollment in this course gives you a role in the body donor program. The way you speak of your experience in the gross human anatomy lab leaves a powerful impression on those that hear you. We would like you to be aware of the importance of the body donor program and its importance to anatomical education. Furthermore, be fully cognizant of your words and actions related to this course. If you are interested in more information on the body donor program, see: http://meded.ucsd.edu/index.cfm/body_donation_program/
Professional Behavior Statement

Entrance into the program of study in physical therapy at San Diego State University signifies a commitment to a doctoring profession, which entails a consistent demonstration of specific knowledge, skills and attitudes. Professional behaviors are a defining element of a doctoring profession. Thus, integration of professional behaviors is a key aspect of the professional socialization process, which begins in the educational program. The following professional behaviors (adopted from objectives 1-6 of the APTA Clinical Performance Instrument) are expected of all doctoral physical therapy learners:

- Practice in a safe manner that minimizes risk to the patient, self, and others;
- Demonstrate professional behavior in all situations;
- Practice in a manner consistent with established legal and ethical practice standards;
- Communicate in ways that are congruent with situational needs;
- Adapt delivery of physical therapy services with consideration for patient’s differences, values, preferences, and needs;
- Participates in self-assessment to improve clinical and professional performance.

Statement on Cheating and Plagiarism

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one’s grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term ‘cheating’ not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one’s own work. Cheating includes (but is not limited to):

- Receiving any specific information about a specific exam or quiz prior to you taking it.
- Giving specific information about a specific exam or quiz prior to someone else taking it.
- Using any unauthorized information during an exam.
- Plagiarism - Submitting, as your own, a paper that was authored by another person.
- Changing answers after an exam.
- Taking, or receiving, PHOTOS of the lab equipment, including models, charts, cadavers, or other specimens.
- Not returning the entire “Exam Packet” at the end of the exam, or after the student has viewed the graded exam.

Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the University. For more information on the University’s policy regarding cheating and plagiarism, refer to the General Catalogue or the Graduate Bulletin section 41304.

Students with Disabilities:

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that I cannot provide accommodations based upon disability until I have received an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Students who are pregnant or planning to become pregnant are advised/encouraged to:

- Notify the instructor as soon as possible of the pregnancy or intention to become pregnant. Students should be aware that they are not required to inform or disclose their reproductive status. Students should not feel coerced to reveal personal information.
- Discuss with their physician any concern they may have regarding their class activity involving a reproductive hazard and their health or the health of their fetus. Notify the instructor of any medical limitations, restrictions or accommodations.
- Consult with EHS to discuss any concern that they may have regarding the hazardous material.

This syllabus and schedule are subject to change at the instructors discretion in the event of extenuating circumstances.