Course Description
PTH 205 Physical Therapy Functional Anatomy
Lec. 3 Lab. 3 Cr. 4
This course introduces the basic concepts and principals of muscles, joints and motion, including traditional testing procedures.
Prerequisites: BIO 210, MAT 120, PSY 201, ENG 101, PTH 101.
Corequisites: BIO 211, ENG 102, PTH202.

Course Focus
This course introduces the basic concepts and principals of muscles, joints and motion, including traditional testing procedures.

Text and References

Course Objectives/Learning Objectives

Course Outcomes. Upon successful completion of the course a student will be able to:
1. Define anatomical and biomechanical terms.
2. Apply anatomical concepts to the practice of physical therapy.
3. Apply biomechanical concepts to the practice of physical therapy.
4. Describe joint structures and relate them to function.
5. Identify and name the attachment sites, primary actions and innervation of the major muscles of the trunk, head, neck and extremities
6. Identify muscle actions and joint motions during simple multi joint movements.
7. Describe open versus closed kinetic chains and recognize them in human movements.
8. Describe spinal cord anatomy.
9. Explain the concept of spinal cord levels.
10. Describe peripheral nerve pathways.
11. Describe peripheral arterial and venous pathways.

Clinical Outcomes. Upon successful completion of the course a student will be able to:
1. Palpate bony landmarks of the upper and lower extremities, trunk, skull and spine.
2. Palpate muscle bellies and tendons of the trunk, skull, spine, and extremities.
3. Palpate ligaments of major upper and lower extremity joints.
4. Palpate specified arterial pulses.

Course Topic Outline/Purpose
This course covers the basic structure and function of bones, muscles and joints. Students are expected to learn the attachment sites, actions, functions and innervation of the major trunk, upper, and lower extremity muscles in addition to the biomechanics and kinesiology of individual joints as well as the biomechanics of more complex movements.

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**All Health Science students are required to comply with all components of the TCL Student Handbook**

**Course Goals**
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. define anatomical terms
2. define basic biomechanical terms
3. define kinesiology terms
4. spell anatomical terms
5. identify anatomical lever systems
6. classify lever systems
7. differentiate linear versus rotational movement
8. explain mechanical advantage*
9. compare force and torque
10. calculate joint forces
11. calculate mechanical advantage
12. calculate muscle torque
13. classify joint types
14. relate joint structures to function
15. recognize various joint motions*
16. list synovial joint structures
17. explain degrees of freedom
18. demonstrate various joint motions
19. determine joint rotational axes
20. differentiate arthokinematic and osteokinematic movement
21. apply osteokinematics to specific joints
22. apply arthokinematics to specific joints
23. describe muscle fascial layers
24. explain muscle contraction
25. differentiate muscle contraction types*
26. relate muscle length and force*
27. graph the muscle force velocity relationship
28. relate muscle contraction velocity and force
29. list shoulder complex joints
30. identify bony landmarks
31. palpate bony landmarks*
32. state normal joint ROM*
33. state ligament attachment sites
34. state ligament functions
35. analyze single joint motions*
36. explain rotator cuff functions
37. explain scapulo-humeral rhythm
38. locate anatomical bursae
39. state major muscle primary actions*
40. state major muscle attachment sites
41. state major muscle innervations
42. list rotator cuff muscles
43. label anatomical drawings
44. palpate major soft tissue structures*
45. integrate muscle contraction with functional movement
46. recognize common muscle weakness substitution patterns
47. recognize simple anatomical disorders
48. differentiate intrinsic and extrinsic muscles
49. describe the thenar and hypothenar eminences
50. explain active and passive insufficiency
51. trace upper extremity force transmission
52. diagram the axilla
53. diagram major peripheral nerve pathways
54. diagram major arterial pathways
55. diagram major venous pathways
56. identify segmental innervation patterns
57. locate selected arterial pulses
58. locate selected superficial peripheral nerves
59. describe vertebral column joints
60. distinguish spinal curvatures
61. differentiate somatic and autonomic innervation
62. illustrate spinal nerve formation
63. identify disc herniation ramifications
64. compare dermatomes and peripheral innervation patterns
65. recognize closed-chain and open-chain movements
66. differentiate open-chain and closed-chain movements
67. differentiate long-arc and short-arc movements
68. explain lumbopelvic rhythm

Student Contributions
Laboratory Requirements
Each student is required to actively participate in laboratory sessions by practicing the application of palpation skills on fellow classmates. Appropriate and professional behavior is expected at all times in the laboratory setting. Shorts and a tank top are the required attire for all laboratory activities. A sweatshirt or sweatpants may be worn over these if such clothing does not interfere with the laboratory activities. Clothing must allow access to various parts of the body during specified laboratory activities. Male students may be required to remove their shirt. Failure to comply with the dress code will result in dismissal from the lab, resulting in an absence. Students are expected to be prepared for class sessions.
Course Evaluation
5 Quizzes (20 pts each) 100 points
10 Lab Quizzes (10 pts each) 100 points
2 Midterm Exams 200 points
Written Homework Assignments 100 points
Midterm Laboratory Practical 100 points
Cumulative Final Laboratory Practical 150 points
Cumulative Final Exam 250 points
Total 1000 points

A total of 6 quizzes will be given. The student’s final grade will be based on the highest 5 quiz scores.

Course Schedule
Lecture: 10:30-12:00 TTH
Lab: 1:00-4:00 T

ADA STATEMENT
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ATTENDANCE
1. The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.
2. Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
3. Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
4. Reinstatement requires the signature of the division dean.
   a. In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.
   b. When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance or
   c. under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.
   d. Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.
5. A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.
6. Students are expected to be in class on time. Arrival to class after the scheduled start time or leaving class prior to dismissal counts as a tardy. Three tardies and/or early departures are considered as one absence unless stated otherwise.

7. It is the student's responsibility to sign the roll/verify attendance with instructor upon entering the classroom. Failure to sign the roll/verify attendance results in a recorded absence. In the event of tardiness, it is the student’s responsibility to insure that attendance is marked. The student is responsible for all material/announcements presented, whether present or absent.

8. Continuity of classroom and laboratory (which includes clinical experiences) is essential to the student’s progress in providing safe and competent patient care. Students are expected to use appropriate judgment for participating in clinical activities. To evaluate the student’s knowledge and skills, it is necessary for the student to be present for all clinical experiences. If absence does occur, the designated clinical site, in addition to the Division of Health Sciences Administrative Assistant, must be notified by telephone no later than 30 minutes prior to the start of the clinical experience. The Division of Health Sciences telephone number is 843-525-8267.

A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLH 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, Wبط TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

ACADEMIC MISCONDUCT
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

Health care professionals hold the public trust. Academic misconduct by health science students calls that trust into question and academic integrity is expected.

It is a fundamental requirement that any work presented by students will be their own. Examples of academic misconduct include (but are not limited to):

1. copying the work of another student or allowing another student to copy working papers, printed output, electronic files, quizzes, tests, or assignments.
2. completing the work of another student or allowing another student to complete or contribute to working papers, printed output, electronic files, quizzes, tests, or assignments.
3. viewing another student’s computer screen during a quiz or examinations.
4. talking or communicating with another student during a test.
5. violating procedures prescribed by the instructor to protect the integrity of a quiz, test, or assignment.
6. plagiarism in any form, including, but not limited to: copying/pasting from a website, textbook, previously submitted student work, or any instructor-prepared class material; obvious violation of any copyright-protected materials.
7. knowingly aiding a person involved in academic misconduct.
8. providing false information to staff and/or faculty.
9. entering an office unaccompanied by faculty or staff.
10. misuse of electronic devices.

GRADING POLICY

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<tr>
<td>90% - 100%</td>
<td>A</td>
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<tr>
<td>82% - 89%</td>
<td>B</td>
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<tr>
<td>75% - 81%</td>
<td>C</td>
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<tr>
<td>70% - 74%</td>
<td>D</td>
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<tr>
<td>Below 70%</td>
<td>F</td>
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<tr>
<td>W</td>
<td>withdraw</td>
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<tr>
<td>WP</td>
<td>withdraw with passing grade</td>
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<tr>
<td>WF</td>
<td>withdraw with failing grade</td>
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<td>I</td>
<td>Incomplete</td>
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Grading Methodology. The final grade must be 75.00% or more in order to pass the course and progress in the program. In addition, each student must pass the final exam with a grade of 75.00% or above. If a student fails the final exam a second attempt will be given. The highest score a student can achieve on the second attempt is 75%. Students absent from an examination or presentation will receive a “0” grade for the examination unless other arrangements are made with the individual instructor prior to the examination or presentation day or on the examination or presentation day before the test/presentation is scheduled to be given. It is the responsibility of the student to contact the appropriate instructor to arrange to make up the examination. Arrangements may be completed by telephone. If the instructor is not available, a message should be left on the instructor’s voice mail AND with another member of the faculty or administrative assistant. The instructor will decide the time and method of make-up examinations on an individual basis. Messages sent by other students are unacceptable. The student is responsible for notifying the instructor of the reason for the absence. Grades are posted on Blackboard within one week of administration of tests and examinations.

Each student must demonstrate safety and competence in required laboratory skills. Students are responsible for insuring that laboratory skills are checked off by the instructor. The Laboratory Skills Achievement List for this course can be found at the back of this syllabus. All laboratory skills must be passed with a minimum score of 75% in order to pass the course. Students will be given three opportunities to pass the each skill check. In addition, the student must pass the practical exam (score 75% or greater) in order to pass the course. Should the student fail the practical exam, they will be given one opportunity to retake the exam. The highest possible score on retaking the exam is 75%. Non-compliance with a critical safety criterion will result in an automatic failure on skills checks as well as practical exams.

Course Coordinator: Cindy Buchanan, PhD, PT
OFFICE LOCATION: Building 4 Room 113
TELEPHONE NUMBER: 843-525-8230
Office Hours: By Appointment
Email: cbuchanan@tcl.edu
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<tr>
<th>Date</th>
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<td>Soft Tissue/Shoulder Girdle Osteology Hand</td>
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<td>Chapter 4</td>
<td>Shoulder Palpation/ Motion/Lab Quiz</td>
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