



The City University of New York
Department of Allied Health, Mental Health and Human Services

PTA 200 Kinesiology and Applied Anatomy

Course Syllabus: Spring 2024
Prerequisites: BIO 11
Co-requisites: PTA 1, PTA 10, PTA 2

Credit Hours: 4
Contact Hours: 6
Lecture: Monday 8:00 am-10:10 am
Lab: Tues and Thursday 8:00 am- 10:10 AM

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Welcome

Congratulations again on your acceptance to the Physical Therapist Assistant Program and welcome to PTA 200. I am Dr. Mattia and I will be your instructor. I encourage you to take the time to read this syllabus for our class so that you can learn more about what to expect.

About the Professor

Hello, my name is Dr. Michael Mattia. I am the Director of the PTA Program and one of two full-time faculty within the Physical Therapist Assistant (PTA) program. I have been at Kingsborough since the inception of the PTA program over 20 years ago first as an adjunct professor and as Director and Full Time Professor since 2017. I teach this course, Kinesiology and Applied Anatomy, PTA 20 Pathology, PTA 4 Modalities and Procedures I, PTA 25 Interactions in The Clinic, and PTA 9 Clinical Practicum II. I have also been a hospital administrator and an independent private physical therapy practitioner for over 38 years. I look forward to a successful and productive semester. If you have any questions, please do not hesitate to contact me



Where to find me: S-128 In addition, please free to contact me via email. I will attempt to return emails within 24 hours. Monday-Thursday from 8am-5pm. Office Hours Monday and Wednesday 7:00 AM – 8:00 AM in S-128. Please do not hesitate to utilize my office hours for any questions and concerns.

I believe that each student has the potential to succeed in this class. I recognize that each student learns differently, and I try to design my classes with a variety of learning experiences. I advise all students to utilize their unique learning styles to help them succeed in this program. I am here to support you throughout this course and strongly encourage all students to reach out to me at any time throughout the course. My door is always open!

Course Description

This course is designed to introduce the student to the anatomy of the musculoskeletal system as well as basic kinesiology concepts. Joint goniometry is presented. The course emphasizes the role and nature of muscles, muscular origins; insertions; and innervations, as well as articular function and structure.

How this Course Works

- This is a 12-week in person lecture course that meets three days a week. Lecture for 2 hours and Lab for 2 hours twice weekly.
- Material including PowerPoints, assignments, discussions and course announcements will be posted on Blackboard.
- This course is organized into weekly topics that are provided on the weekly course calendar at the end of this syllabus.
- There will be a number of quizzes and assignments throughout the semester in addition to a midterm and final written and lab practical exam.

Program Mission Statement

The mission of the Physical Therapist Assistant program at Kingsborough Community College of the City University of New York is to: develop well qualified entry level physical therapist assistants who reflect the ethnic and cultural diversity of the community which the college serves and who function under the supervision of the physical therapist in a variety of physical therapy settings, capable of providing physical therapy treatments as outlined by the physical therapist to the satisfaction of the physical therapist. Further, the program will provide graduates who meet standards for licensure or registration as a physical therapist assistant in a variety of states. Additionally, the program's mission includes meeting the accreditation standards of the Commission on Accreditation in Physical Therapy Education for Physical Therapist Assistant Programs.

Professionalism

The concept of professionalism in health care is motivated by the primary goal of providing quality service to the health care consumer. It is also a concept that involves a commitment to life-long learning, which enables the provider to utilize current evidence-based standards of care in the daily delivery of health care to

the consumer. The program's faculty members are dedicated to providing students with the knowledge and background necessary to develop professionalism.

Program Commitment to Core Values C.O.R.E.

COMPASSION Celebrating a diverse campus, local and global community of people and displaying professionalism and compassion in all interactions.

OPPORTUNITY Presenting current trends and future possibilities for career, academic and personal enrichment.

Overview of Program Learning Objectives for the Course

This course begins to address the following PTA program learning outcomes:

1. Demonstrate PTA entry-level skills that are applicable to a variety of patient care settings and meet the needs of the community the college generally serves.
2. Demonstrate competency in performing components of data collection skills essential for carrying out the plan of care.
3. Recognize when the direction to perform an intervention is beyond that which is appropriate for a physical therapist assistant and initiate clarification with the physical therapist.
4. Exhibit conduct that reflects practice standards that are legal, ethical and safe.
5. Demonstrate familiarity with NPTAE requirements, format, and test taking strategies to maximize future success potential.

Student Learning Outcomes

As evidenced by successful performance and completion of written and practical examinations, assignments, research article reviews, lab presentations, and the role-playing analysis of clinical scenarios, the student will:

- 1.0 **Apply knowledge of anatomy and kinesiology principles.**
 - 1.1 Define kinesiology and the common terms associated with this study including kinematics, kinetics, torque, lever, etc.
 - 1.2 Identify the function and parts of the human skeleton.
 - 1.3 Define and recognize various types of joints, including synovial, cartilaginous, and fibrous.
 - 1.4 Define joint movement by referring to planes of movement and axes.
 - 1.5 Identify and palpate bony prominences and common surface anatomy sites.
 - 1.6 Discuss the concepts of mechanical advantage and leverage.
 - 1.7 Identify origins, insertions, innervations, and actions for major muscles of the trunk, neck, shoulder girdle, shoulder joint, elbow, wrist, hand, hip, knee, ankle, and foot.
 - 1.8 Discuss the significance of muscular origins, insertions, innervations, and actions as it relates to human movement and physical therapy practices.
 - 1.9 Identify the structure and function of the neck, trunk, and extremities.
 - 1.10 Identify joint play / accessory movement and their relationship to joint mobility techniques.
 - 1.11 Given movement scenarios including common activities of daily living, identify joint position, agonists, and antagonists, and synergistic relationships.

2.0 Demonstrate understanding of anatomy and kinesiology principles and principles of muscle contraction.

- 2.1 State the contractile and mechanical properties of muscle tissue including length, elasticity, and extensibility.
- 2.2 Know types of muscle contractions including, isometric, isotonic, concentric and eccentric.
- 2.3 Explain the practical implications related to the types of muscle contractions including isometric, isotonic, and concentric.
- 2.4 State the difference between vector and scalar quantities.
- 2.5 Explain, demonstrate, and analyze motion in terms of force direction, torque production, and Newton's Laws of motion.
- 2.6 Analyze muscular activity of several muscle groups using video presentations of functional activities.
- 2.7 Explain, demonstrate, and discuss the relationship between torque production and range of motion.

3.0 Implement knowledge of anatomy and kinesiology principles with palpation of the upper and lower extremities, neck, and trunk

- 3.1 Palpate superficial bony prominences and soft tissue landmarks.
- 3.2 Use the skills of soft tissue and bony prominence palpation to identify joint components.
- 3.3 Report results of palpation and range of motion assessment to supervising physical therapist.

4.0 Implement knowledge of anatomy and kinesiology principles with goniometry.

- 4.1 Define goniometry, its concepts and importance.
- 4.2 Explain the importance of goniometry in the practice of physical therapy.
- 4.3 Perform goniometry and functional assessment accurately and appropriately document range of motion, and recognize inappropriate documentation practices.
- 4.4 Perform range of motion assessment using, digital, gravity, and water-based inclinometers.
- 4.5 Analyze the consistency of range of motion measurement methods.
- 4.6 Analyze and determine appropriate documentation of joint range of motion.

5.0 Compare alternative methods of assessing human movement

- 5.1 Define terms such as electromyography and stroboscopic analysis.
- 5.2 Demonstrate the ability to observe motion from goal orientation, anatomical, and segmental movement perspectives

6.0 Given patient scenarios, implement physical therapy plan of care as directed by a physical therapist.

- 6.1 Perform techniques demonstrating an understanding of the role of the physical therapist assistant in rehabilitation.
- 6.2 Perform techniques appropriately employing universal precautions and sound body mechanics.
- 6.3 Perform palpation and goniometry techniques considering influences of pathologies.
- 6.4 Perform muscle length assessment such as Thomas, Ober and 90/90 Test.
- 6.5 Perform palpation and goniometry techniques considering influencing factors (psychosocial, cultural, economic, patient satisfaction, legal/ ethical, etc).
- 6.6 Correlate palpation sites with potential pathologies and precautions (entrapment, pressure sensitivity, etc.).

- 6.7 Identify response(s) that require the attention of the supervising physical therapist or immediate interventions such as basic first aid or cardio-pulmonary resuscitation.
- 6.8. Communicate patient response to supervising physical therapist.

7.0 Demonstrate appropriate professional behavior.

- 7.1 Attend and be on time for class, lab, and scheduled appointments.
- 7.2 Be prepared for lab activities; attend to tasks assigned.
- 7.3 Accept constructive criticism and respond and/or follow through appropriately.
- 7.4 Express self in a clear and easily understood manner.
- 7.5 Maintain appropriate personal hygiene.
- 7.6 Treat others with positive regard, dignity, and respect.
- 7.7 Analyze and examine professional literature considering: specific scientific methods, interpretation of results, and clinical significance to foster further personal investigation and clinical effectiveness.
- 7.8 Explain the importance of lifelong learning.
- 7.9 Describe how professional development can occur.

Assessment of Outcomes

As indicated in the student handbook, to receive a passing grade in this course the student must successfully complete all comprehensive examinations, assignments and practical examination with a grade of “C” or better. Additionally, the instructor assesses student competencies in skills critical to this course using the standardized skills checklists, located in the laboratory, requiring a passing score of at least 90%. Critical skills in this course include:

1. Palpation of soft tissue and bony prominences of the Cervical Spine, Lumbar Spine, shoulder, elbow, wrist/hand, hip, knee, and ankle.
2. Goniometric measurement of the Cervical Spine, Lumbar Spine, Shoulder, Elbow, Wrist/Hand, Hip, Knee, and Ankle.
3. Performance in muscle length assessment.

Required Textbooks

- Lippert, Lynn *Clinical Kinesiology and Anatomy*. Seventh Edition. Philadelphia, PA: F.A Davis 2022
- Minor, Mary Alice Duesterhaus, *Kinesiology Laboratory Manual for Physical Therapist Assistants*, F.A. Davis Co., Philadelphia, PA, Fifth Edition, 2022
- Norkin, Cynthia C. and White, Joyce, *Measurement of Joint Motion A Guide to Goniometry*, F.A. Davis Co., Philadelphia, PA, Fifth Edition, 2016.

Recommended textbooks:

- Mosby *Mosby’s Dictionary*. 10th ed. St. Louis, MO: Elsevier. 2016
- Masaracchio, M., Frommer, C. 1st ed. *Clinical Guide to Musculoskeletal Palpation* 2014 Human Kinetics, Champaign, Il.

Grades will be calculated according to college and departmental policy as follows:

This is the grading schematic for PTA program:

A+ 95-100 A 90-94 A- 88-89 B+ 85-87 B 80-84 B- 78-79 C+ 75-77 C 70-74
 F <70 and below W Withdrew without penalty WU Unofficial Withdrawal

How are grades determined: Grades will be posted on Blackboard; students can track their progress throughout the class.

Research Article Presentation	5%	Group Presentation/Project Students are divided into groups of 2 to 4 members. Each group is assigned a video of a functional activity. The group will examine the relationships of agonist and antagonists, ROM, and other movement concepts. Each group shall use a well-organized spread sheet for reporting the movement analysis. Groups present their findings and conclusions in a 15-minute presentation. Detailed instructions are provided by the instructor. Each group submits a single 4 – 5-chapter document that supports the group presentation/project. Each group member should author at least one chapter. However, the document should reflect a continuous flow of information and data and not read as 4 or 5 separate papers.
Participation/Lab assignments	5%	Students are required to complete the lab sections in the course lab manual on a weekly basis and participate in each lab experience to their best ability. A variety of laboratory activities are performed throughout the course. Certain laboratory activities are performed by each student and graded. Students are expected to begin to demonstrate the ability to document findings by week 4 of the course.
Lab Practical	25%	Students take a laboratory practical examination based on laboratory activities in their final week of the course.
Multiple Choice Quizzes	30%	The student completes a series of weekly quizzes derived from the course material presented in the preceding week.
Mid-term Examination	15%	The student takes a cumulative examination covering the first five to six weeks of the course. The examination includes multiple-choice type questions.
Final Examination	20%	The final exam is cumulative for the entire semester's work consisting of multiple-choice questions.

Success Kit

Keys to success in this class include:

- Complete reading assignments prior to class and take notes on readings.
- Attend class and be an active participant in class discussions.
- Take notes in class and do not rely solely on ppts.

- Do not wait till the night before to begin studying for an exam and continue to review all material as exams are cumulative.
- Complete all assignments on time.
- At the first signs of difficulty understanding the material, come speak to me.
- Utilize the Program's tutor.

Attendance, Participation, and Universal Learning

Attendance and participation are highly important in this small, collaborative, remote class. If the student must be absent because of an emergency or illness, please make every effort to speak with the professor about it beforehand, if possible, or after the next class. The professor will excuse such absences with a doctor's note or other form of official documentation. Although the student is excused from attending class, the student is not excused from completing the work for that day. The faculty is committed to the principle of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions be as inclusive as possible. Mutual respect, civility, and the ability to listen and observe others carefully are crucial to universal learning. Active, thoughtful, and respectful participation in all aspects of the course will make our time together as productive and engaging as possible. The professor will give the student feedback on their performance and participation.

Policies and Procedures

- The Department of Allied Health, Mental Health and Human Services adheres to the Policies and Procedures on Academic Integrity as set forth by CUNY. Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion. Additional information can be found in the College catalog <http://www.kingsborough.edu/sub-registration/Pages/catalog.aspx>. Plagiarism is a violation of academic integrity. Plagiarism is the intentional theft(s) of someone else's intellectual property without attribution (proper credit). Determination and penalty – ranging from grade reduction to course failure – will be decided by the instructor.
- Students will require a laptop/tablet and internet access to log in to the CUNY Blackboard system.
- A student who requires assistance with hardware/computer needs, connectivity issues, email problems or gaining access to their Blackboard account please reach out to: HelpDesk@Students.kbcc.cuny.edu
- Students are expected to take all tests when scheduled. Students who are absent on the day of an exam will be expected to take the exam on their return to class. Students who fail to take the scheduled exams or makeup will receive a grade of zero for that test.
- All written assignments must comply with college standards for written work. Specific assignment directions and requirements are provided for each assignment. Any weekly written assignments are posted on Saturday morning. Assignments posted on Saturday are due by the following Friday at 11:59pm unless otherwise stated in the assignment directions. Written assignments, other than discussion board threads are to be submitted as per assignment directions. A late assignment will meet the requirements of the course but will not receive full credit.
- If written assignments are not submitted by the end of the course, the student will receive a grade of "0" for each incomplete assignment.
- Refer to the PTA Student Handbook for complete program policies and procedures.

Student Support Services Available

Students who need an accommodation for a disability, during their time at Kingsborough Community College, should make an appointment with the **Access-Ability Office** in Room D205 at 368-5175. Access- Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every effort to provide appropriate accommodations and assistance to students with disabilities. The professor will be glad to work with the student to provide necessary guidance and accommodations as needed.

Access Resource Center (Room E-115)

Your one-stop place to get connected to government benefits and resources. Whether it is childcare, SNAP, clothing, or transportation, you can get a referral for what's available to you – where you live and when you need it.

FREE services include Benefits Screening, Legal Consultation, Financial Consultation and Tax Preparation, lists of jobs, housing, pantries, Distribution of FREE vegetables grown on campus at the KCC Urban Farm

Distribution of FREE food staples at the KCC Food Pantry, Clothing donations, Assistance with recertification of benefits, Fair Hearing Assistance and Assistance obtaining other government resources.

All services are FREE. Walk-ins are always welcome.

Counseling Services Room D-102

All Kingsborough students are eligible to receive free and confidential personal counseling through the Counseling Services Center, where they will find a staff of trained and caring mental health practitioners who are committed to providing high-quality services, in a safe, supportive, and judgment-free environment, while always respecting students as individuals and as members of a diverse school community.

Netiquette

Each student is encouraged to take an active part in class discussions and activities. Honest and respectful dialogue is expected. Disagreement and challenging of ideas in a supportive and sensitive manner is encouraged. Hostility and disrespectful behavior are not acceptable. Just as we expect others to listen attentively to our own views, we must reciprocate and listen to others when they speak, especially when we disagree with them.

1. Be mindful that electronic communication does not convey facial expression or tone of voice. It is important to consider what is written could be misinterpreted.
2. Typing messages all in caps is regarded by most internet users as shouting; so, unless you mean to yell at someone, type your message in standard format.
3. It is appropriate to share your point of view as well as indicate disagreements with another's posts, however, it is not okay to make negative personal statements about another's posts.
4. Clearly indicate the nature of your email messages.
5. If you send an email from a personal email account, sign the message. Often the names of personal email accounts are different from a person's given name. Use the KCC email whenever possible.

Equity, Civility, Respect for Diversity and Inclusion

Respect for the opinions of others is very important in an academic environment. Courteous behavior and responses are expected. Therefore, in this classroom, any acts of harassment and/or discrimination based on matters of race, gender, sexual orientation, religion, and/or ability is not acceptable. Students, faculty, and staff have a right to be in a safe environment, free of disturbances in all aspects of human relations. Incivility will not be tolerated. The PTA program strives to create a learning environment for its students that supports a diversity of thoughts, perspectives and experiences, and honors student identities (including race, gender, class, LGBTQAI+, religion, ability, etc.) To help accomplish this, if a student has a name and/or set of pronouns that differ from those that are traditionally used, please communicate this to the professor. The PTA program faculty are dedicated to our students and as such if any student experiences any issues in regard to diversity, equity and inclusion, the student is encouraged to reach out to the professor and/or department. All student concerns are treated with the utmost confidentiality.

Religious/Cultural Observance

Persons who have religious or cultural observances that coincide with this class should let the professor know in writing by e-mail one week in advance of your respective observance. Students may be excused from the class, but students are not excused from course requirements. The timely submission of assignments or the make-up of exams should be discussed with the professor.

Week to Week Course Agenda

12-week semester	Topic and Objectives of the week	Reading Assignments	Lab	Assignments and Due Dates
Week 1 3/2-3/08	Lecture – Introduction & Skeletal System Review This initial week introduces students to the definition of kinesiology and the rationale for its study, general clinical kinesiological terms and concepts. Descriptive terminology and specific joint movements, as well as types of motion are reviewed and studied. Review of basic skeletal system anatomy and physiology is also undertaken.	Read: Lippert, pp. 3 – 29 Lab: Chapter 1-2	Laboratory activities include skeletal system exercises and introductory activities in mechanics. Students are introduced to basic principles of goniometry and types of goniometers and range of motion assessment devices.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 1 <p style="text-align: right;">Due Date: 3/08</p>
Week 2 3/09-3/15	Lecture – Articular and Muscular System During this week the student is introduced to the definition, type, and components of the human joint. Cardinal planes and axes of movement are reviewed. Study of the muscular system is begun including, purpose of muscles, nomenclature and physical characteristics as initially introduced in BIO 11.	Read: Lippert Chapters 3 – 5 Lab: Chapter 3-5	Students perform activities reinforcing kinesiological concepts. Students identify movements, axes, and planes on each other. Students perform goniometric measurements on known angles. Students are introduced to the use of water-based and digital inclinometers as alternative means of measuring range of motion.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 2 • Quiz 1 • Palpation Competencies <p style="text-align: right;">Due Date: 3/15</p>
Week 3 3/16-3/22	Lecture: Muscular System This week includes the continuation of the examination of the muscular system. Topics covered this week include: the functional characteristics of muscle tissue, and the definitions of stretching and	Read: Lippert Chapters 3 – 5 Lab: Chapter 3-5	Students continue to perform practical activities demonstrating and applying kinesiological principles of leverage and advantage. Students perform activities demonstrating isotonic and isometric muscle contractions. Students perform and compare open and closed chain activities. The HUMAC/NORM is introduced as a method of visualizing torque	<ul style="list-style-type: none"> • Lab assignment • Reading summary 3 • Quiz 2 • Palpation Competencies <p style="text-align: right;">Due Date: 3/22</p>

	tenodesis. The concepts of leverage and mechanical advantage are also presented. The roles of muscles and types of muscle contraction are reviewed. Newton's Laws of motion and muscle torque production is introduced.		production and its relationship to range of motion.	
Week 4 3/23- 3/29	Lecture: The Neck & Trunk This week introduces the student to the neck and trunk. Emphasis is placed on the identification of bones, landmarks, joints, and ligaments. Trunk movements are reviewed. Origins, insertions, innervation, and actions of key muscles are presented.	Read : Lippert Chapter 15 Lab : Chapter 15	Students continue to perform practical activities demonstrating and applying kinesiological principles. Students review, analyze, and role play patient scenarios demonstrating practical application of principles and concepts presented thus far.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 5 • Quiz 3 • Palpation Competencies <p>Due date: 3/29</p>
Week 5 3/30-4/5	Lecture - The Shoulder Girdle This week introduces the student to the shoulder girdle. Emphasis is placed on the identification of bones, landmarks, joints, and ligaments. Shoulder girdle movements are reviewed. The mechanics of movement are presented including scapulohumeral rhythm. Origins, insertions, innervation, and actions of key muscles are presented.	Read : Lippert Chapter 9 Lab : Chapter 9	Students perform group and individual activities that facilitate a greater understanding of the anatomy and kinesiology of the shoulder girdle. Muscular origins and insertions are reviewed. Students palpate superficial landmarks of the shoulder girdle.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 5 • Quiz 4 • Palpation Competencies • Due Date: 4/5
Week 6 4/6-4/12	Lecture: The Shoulder Joint This week introduces the student to the glenohumeral joint. Emphasis is placed on the identification of joint motions, range of motion, bones and landmarks, and the joint capsule. Shoulder goniometry is introduced. Origins, insertions, innervations,	Read: Lippert Chapter 10 Lab: Chapter 10	Students perform group and individual activities that facilitate a greater understanding of the anatomy and kinesiology of the glenohumeral joint. Muscular origins and insertions are reviewed. Students palpate superficial bony and muscular landmarks of the glenohumeral joint. Assessment and measurement of flexibility and muscle length is discussed with emphasis on two joint muscles. Shoulder goniometry is presented, practiced, and performed. Patient	<ul style="list-style-type: none"> • Lab assignment • Reading summary 6 • Quiz #5 • Goniometric Competencies • Due date: 4/12

	and actions of key muscles are presented.		scenarios highlighting brachial plexus injury with emphasis on its impact on the shoulder joint are reviewed. The HUMAC/NORM is used to demonstrate differences in agonist and antagonists.	
Week 7 4/13- 4/19	Lecture – The Wrist & Hand This week examines the wrist. Emphasis is placed on the identification of joint motions, mechanics, bony landmarks, and ligaments. Origins, insertions, innervations, and actions of key muscles are presented.	Read: Lippert Chapter 12 & 13 Lab: Chapter 12 – 13	Students perform group and individual activities that facilitate a greater understanding of the anatomy and kinesiology of the wrist and hand. Muscular origins and insertions are reviewed. Students palpate superficial bony and muscular landmarks. Assessment and measurement of flexibility and muscle length is discussed with emphasis on two joint muscles. Wrist and hand goniometry are presented, practiced, and performed. HUMAC/NORM learning activities performed.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 8 • Midterm Exam • Goniometric Competencies • Due date:4/19
4/22- 4/30	SPRING RECESS		SPRING RECESS	<ul style="list-style-type: none"> • 4/22-4/30
Week 8 5/1-5/10	Lecture – The Hip continued The discussion of the hip continues with an examination of the muscular origins, insertions, innervations, and actions of key muscles. The synergistic nature of hip muscle actions is presented.	Read: Lippert Chapter 18 Lab: Chapter 18	Muscular origins and insertions are reviewed. Patient scenarios highlighting hip pathologies including coxa valgus/varus, ante/retroversion, avascular necrosis, and osteoarthritis are analyzed. Their impact on hip movement is explored.	<ul style="list-style-type: none"> • Lab assignment • Reading summary 10 • Quiz 7 • Goniometric Competencies • Due date: 5/10
Week 9 5/11 - 5/17	Lecture – The Knee Joint The structure and motions of the knee joint are presented. Emphasis is placed on the bony landmarks, ligaments, cartilage, and mechanics of the knee joint. Origins, insertions, innervations, and actions of key muscles are reviewed.	Read: Lippert Chapter 19 Lab: Chapter 19	Students perform group and individual activities that facilitate a greater understanding of the anatomy and kinesiology of the knee. The functional implications of genu recurvatum, valgus, and varus are explored. Muscular origins and insertions are reviewed. Students palpate superficial bony and muscular landmarks of the knee. Assessment and measurement of flexibility and muscle length is discussed with emphasis on two joint muscles. Knee goniometry is presented, practiced, and performed. HUMAC/NORM learning activities performed.	<ul style="list-style-type: none"> • Lab assignment • Reading summary • Quiz 8 • Goniometric Competencies • Due date: 5/17
Week 10 5/18 – 5/24	Lecture : The Foot and Ankle The structure, motions, and mechanics of the foot and ankle	Read: Lippert Chapter 20 Lab: Chapter 20	Students perform group and individual activities that facilitate a greater understanding of the anatomy and kinesiology of the ankle and foot. Muscular	<ul style="list-style-type: none"> • Movement Assessment Project • Lab Assignment

Wed. 5/22 follows a Monday schedule	are presented. Emphasis is placed on bony landmarks, and key ligaments. Origins, insertion, innervations, and actions of major muscles are reviewed.		origins and insertions are reviewed. Students palpate superficial bony and muscular landmarks. Assessment and measurement of flexibility and muscle length is discussed with emphasis on two joint muscles. Ankle goniometry is presented, practiced, and performed. HUMAC/NORM learning activities performed.	<ul style="list-style-type: none"> • Reading Summary • Quiz 9 • Goniometric competencies • Due date: 5/24
Week 11 5/25-5/31 College closed 5/27 for Memorial Day	<u>Visit to LIU Cadaver lab</u> <u>EMG Muscle – Movement analysis</u>		Students will experience cadaver dissection in person and will utilize the Surface EMG to identify muscles and movements during common human activities.	Lab Assignment <ul style="list-style-type: none"> • Reading Summary • Quiz 10 • Goniometric competencies Due date: 6/10
Week 12 6/1-6/5	Putting It all Together			
Final Exams 6/12-6/16	Study and Review all online materials via Bb		Final Exams times TBD	<ul style="list-style-type: none"> • Practical Examination • Final Examination