

Functional Neuro Anatomy

PTA - 2010 301

Course Description

Students will build on basic anatomy knowledge of the nervous, muscular, and skeletal systems by integrating them into a functional Movement System clinical practice paradigm.

Course Student Learning Outcomes

- Identify and discuss the components of the Movement System as defined by the American Physical Therapy Association and summarize the contributions of each element to functional movement.
- Distinguish between kinetic and kinematic principles as they impact the operation of the musculoskeletal system.
- Identify and name the structural components of the axial and appendicular skeletal system.
- Identify, name, and explain the function of skeletal landmarks in the axial and appendicular skeletal system.
- Identify the types of joints in the skeletal system and describe the purpose of diverse joint architecture as it guides joint kinematics.
- Identify selected joint structures that constrain joint movement to prevent injury.
- Identify, list by name, and define the origin/insertion, action, and innervation of muscles of the trunk and spine.
- Identify, list by name, and define the origin/insertion, action, and innervation of muscles of the neck and head.
- Identify, list by name, and define the origin/insertion, action, and innervation of muscles of the shoulder complex and upper extremity.

- Identify, list by name, and define the origin/insertion, action, and innervation of muscles of the pelvic girdle and lower extremity.
- Identify and define the function of the coverings of the brain and cerebrospinal fluid.
- Identify and list the vascular structures of the cerebral hemispheres.
- Identify and describe the peripheral nervous system structures involved in the registration/processing of sensory input to the brain.
- Identify and describe the central nervous system structures involved in the generation/discharge of task-driven movement patterns.
- List and describe the sequence of electrochemical events of the Excitation-Contraction Model of muscular contraction.
- Integrate the neuromusculoskeletal events creating movement and use this information to analyze a functional movement pattern and/or impaired movement sequence.

College Wide Student Learning Outcomes

- Acquire substantive knowledge
- Communicate effectively
- Develop quantitative literacies
- Think critically and creatively
- Become a community engaged learner
- Work in a professional and constructive manner
- Develop computer and information literacy
- Develop lifelong wellness

Course Prerequisites

Students must be formally admitted into the PTA program.

Engagement Plan

Students can communicate with me in person, through Microsoft Teams, Canvas Inbox, or email.

- The best way to contact me, other than in person communication, is via Microsoft Teams. I will prioritize this method of communication over other methods of communication. I will respond within the day, unless communication occurs after hours or on weekends, in which case I will respond within 24-48 hours.
- I will respond to email within 24-48 hours. I will offer feedback on major assignments within one week.

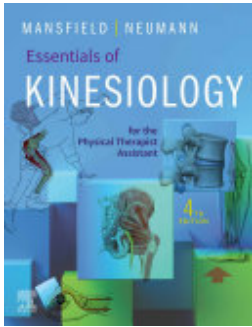
Keys for Success (how to succeed in the course)

All lecture content will be delivered in a lecture/discussion format. Students are introduced to essential course content via the PTA 2010 CANVAS site. The material found in the course textbook and on the instructional site will lay the foundation for class discussions and collaborative learning experiences. As a partner in your own learning, it is essential that you prepare for this course by studying the content prior to the class discussion. You will be expected to contribute to the development of understanding in the learning environment through active participation.

Students should expect to spend a minimum of 45 hours in the classroom and 60+ hours in out-of-class concentrated study during the semester. If the student is having difficulty in the course, it is the student's responsibility to make arrangements to talk with the Instructor. Students are

expected to be self-directed and motivated in identifying their learning needs associated with the course content.

Required Text or Materials



Title: Essentials of Kinesiology for the Physical Therapist Assistant

ISBN: 9780323824187

Authors: Paul Jackson Mansfield, Donald A. Neumann

Publisher: Elsevier Health Sciences

Publication Date: 2023-03-19

Edition: 4



Title: Visible Body Courseware

OID: <http://courseware.visiblebody.com>



Title: PhysioU

OID: app.clinicalpattern.com

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Additional Materials

Readings and supplemental resources posted to the Canvas site

Brief Description of Assignments/Exams

Each assignment has a specific due date as noted under Assignments (on the Canvas website), in the

Tentative Schedule, and/or as stated by the Instructor. All submissions for a particular assignment will be graded at the same time to ensure consistency in utilization of the grading rubric. Late assignments (assignments not completed by 9:00 pm on the due date) are accepted with a 5% late penalty per day, up to 50% total deduction.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Neuroscience Quiz 2	Assignment	80
9/23/24	Kinesiology Written Examination 1	Assignment	100
10/9/24	Neuroscience Quiz 1	Assignment	80
10/21/24	Kinesiology Written Examination 2	Assignment	100
11/4/24	Kinesiology Written Examination 3	Assignment	100
11/25/24	Kinesiology Written Examination 4	Assignment	100
11/25/24	Professionalism	Assignment	50
12/10/24	Creating and Submitting Your ePortfolio Signature Assignment	Assignment	30

Due Date	Assignment Name	Assignment Type	Points
9/1/25	0.1.1 Online Discussion: The Human Movement System as a Practice Paradigm in Physical Therapy	Discussion	10
9/2/25	1.1.1 Online Quiz: Navigating Your Way: The Science and Art of Muscle Palpation	Quiz	15

Grading Scale

A	95-100%	B	86-88%	C	77-79%	D	68-70%
A-	92-94%	B-	83-85%	C-	74-76%	D-	65-67%
B+	89-91%	C+	80-82%	D+	71-73%	E	64% and below

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the [Institutional Syllabus](#) page.

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the [Institutional Syllabus](#) page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the [Institutional Syllabus](#) page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

[SLCC Student Academic Calendar](#)