

PT 605: Applied Anatomy and Biomechanics II

Course Description: This course will provide the anatomical and biomechanical knowledge to understand the human movement system and apply these concepts for the practice of physical therapy. Anatomy and Biomechanics of the back, neck, scapulothoracic, and upper extremity will be covered.

Faculty: Ricky Morgan, PT; Gary Schindler, PT, PhD

Credit Hours: Two (2) credit hours

Clock Hours: Lecture: Monday and Wednesday (9:00am-10:00 am); Fridays (**if needed**)

Course Prerequisites:

Registered in the Professional Physical Therapy curriculum

Course Objectives:

- A. Identify, locate and illustrate during written examinations and in clinical application, the major structures along with their function and relationships to each other in all regions of the body. This includes, but is not limited to, innervation, vascular supply, musculoskeletal structure and function, and connective tissue components. (SRE 7A)(Cognitive: Comprehension and Application; Psychomotor: Set and Mechanism)
- B. Identify and/or discuss the structure and function of a typical joint and the specific functional anatomy of the shoulder, elbow and hand/finger joints. (SRE 7A) (Cognitive: Comprehension and Application; Psychomotor: Set and Mechanism)
- C. Identify the peripheral nerve plexuses of the body, apply the information to muscles innervated by any peripheral nerve, and the resulting muscle dysfunction due to a particular nerve injury. (SRE 7A) (Cognitive: Comprehension and Application)
- D. Illustrate the major structures and relationships of the contents of the thoracic cavity including but not limited to the visceral structures, the sympathetic and parasympathetic innervations and vascular supply to the viscera, as well as skeletal and muscular structures located in the region. (SRE 7C) (Cognitive: Comprehension and Application)
- E. Discuss the biomechanics and kinesiology of the shoulder joint along with muscles and forces acting on the shoulder joint in normal and pathologic conditions. (7A. Comprehension).
- F. Discuss the biomechanics and kinesiology of the elbow and wrist joints along with muscles and forces acting on the elbow and wrist joints in normal and pathologic conditions (7A. Comprehension).
- G. Discuss the biomechanics and kinesiology of the hand along with muscles and forces acting on the hand in normal and pathologic conditions (7A. Comprehension).
- H. Describe, examine and evaluate normal and pathological human movement (7A, 7D19d, 7D19i, 7D19m, Evaluation).

Teaching Methods and Curriculum Practice Model: Teaching methods in this course include lecture, small group activities, and discussion.

Methods for Evaluation: The format of written examinations may include, but are not limited to: true/false, multiple choice, matching, short answer, and/or essay questions. Weekly quizzes, mid-term exam, final exam, and assignments all must be completed with a minimum score of 76%. See grading criteria below.

Grading (Grade based on total points):

Midterm Written Examination	90-100% = A
Final Written Examination	80-89% = B
Mid-Block Examinations	76-79% = C
Quizzes	< 76% = Unsatisfactory

Required Textbook and Material:

Jeno/Keck: Anatomy for Allied Health 7th ed.

Moore: Clinically Oriented Anatomy, 9th Ed.

Color Atlas: Student's choice of numerous atlas' available (Netter's is available through the online system)

Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation, 3rd ed. by Donald A. Neumann, PT, PhD., FAPTA. Publisher is Elsevier; ISBN #9780323287531.

Recommended Supplies: Colored pencils

Attendance: Class attendance is expected 100% of the time. Students should follow the Department Scholastics Standards document on how to report absences. Tardiness is not tolerated. Please remember that arriving late for anything is a distraction and it places your peers in a less than adequate position for learning. **If the number of times you arrive late for lecture exceed two you will have five course points deducted for every day thereafter you are late.**

EXPECTATIONS AND ACCOUNTABILITY:

Independent learning and professionalism is expected throughout this course. Students will be held responsible for material presented in lecture, pertinent information covered in the texts related to the topics discussed in lecture/discussion.

Cell phone use is prohibited unless researching information regarding Anatomy or Biomechanics. If you are expecting an important call please inform me. In addition, I have high expectation for all involved in this course. It may seem at times difficult, but I know we can get through it. I expect professionalism, accountability, dependability, integrity, honesty, patience, hard work ethic, and good attitudes to be maintained throughout this course and hopefully your life. This is only going to prepare you when you are a colleague of mine in less than 3-years!!!! One of my favorite quotes is as follows....

“Whether you think you can, or you think you can’t—you’re right”. - Henry Ford

Make Up Work/Examinations: If an absence is anticipated, make-up examinations should be completed *prior* to the absence. If an absence is unanticipated, arrangements for make-up examinations must be made **by the student within three (3) days** of the student's return to classes. **Students may be assigned additional coursework for all absences.** Students will not be allowed to make-up in-class quizzes due to an absence.

ACADEMIC INTEGRITY: In accordance with the rules concerning scholastic dishonesty in the *Code of Student Life** at the University of North Dakota, I affirm that I understand these rules and I agree to comply with them.

I will not:

- a) receive any additional information or assistance for any exam other than what was provided during class or approved tutor sessions
- b) copy from another student's test
- c) collaborate with or seek aid from another student who may have previously taken the exam
- d) knowingly use, buy, sell, steal, or solicit in whole or in part the contents of any exam
- e) bribe another person to obtain information about any exam

UND is committed to maintaining a safe learning environment while providing quality learning experiences for our students. COVID-19's continued presence within our UND community may necessitate changes in classroom management as the academic year progresses. As such, UND asks students and instructors to be flexible when necessary to promote a safe environment for learning. Please do not attend an in-person class or lab if you are feeling ill, particularly if you are experiencing symptoms of COVID-19, or if you have been directed by health professionals to quarantine or isolate. If you are not able to attend class or lab, please notify your instructor as soon as possible and discuss options for making up any missed work in order to ensure your ability to succeed in the course. If you will have an extended absence due to serious illness or other uncontrollable circumstances, you may request an absence notification through the [Office of Student Rights and Responsibilities](#). Similarly, if your instructor is ill they may need to cancel class or temporarily move your course to online delivery to ensure that you are able to complete the course successfully. Instructors may require students to wear masks in the classroom or in the laboratory as a preventative measure designed to facilitate uninterrupted classroom engagement and to facilitate health and safety in the classroom. If your instructor does require masks in class or in a laboratory, you are expected to comply with that request.

UND also strongly encourages all members of the University community, including students, to get vaccinated, seek out testing when needed, and model positive behavior both on- and off-campus to foster a healthy and safe learning environment for all students. Individuals who would like to discuss disability accommodations regarding masks should contact the Disability Services for Students (DSS) office at 701-777-2664 or UND.dss@UND.edu. Individuals who are unable to wear a mask due to a sincerely held religious belief should contact the UND Equal Opportunity and Title IX Office at 701.777.4171 or UND.EO.TitleIX@UND.edu.

DISABILITY ACCESS STATEMENT: Contact me, Ricky Morgan (office 777-3862, email me at richard.morgan@und.edu or visit Rm E324 UND SMHS) to request disability accommodations, discuss medical information, or plan for an emergency evacuation. To get confidential guidance and support for disability accommodation requests, students are expected to register with DSS at www.UND.edu/disability-services/, 180 McCannel Hall, or 701.777.3425.

NOTICE OF NONDISCRIMINATION: It is the policy of the University of North Dakota that no person shall be discriminated against because of race, religion, age, color, gender, disability, national origin, creed, sexual orientation, gender identity, genetic information, marital status, veteran's status, or political belief or affiliation and the equal opportunity and access to facilities shall be available to all. Concerns regarding Title IX, Title VI, Title VII, ADA, and Section 504 may be addressed to Donna Smith, Director of Equal Employment Opportunity/Affirmative Action and Title IX Coordinator, 401 Twamley Hall, 701.777.4171, und.affirmativeactionoffice@UND.edu or the Office for Civil Rights, U.S. Dept. of Education, 500 West Madison, Suite 1475, Chicago, IL 60611 or any other federal agency.

REPORTING SEXUAL VIOLENCE: If you or a friend has experienced sexual violence, such as sexual assault, domestic violence, dating violence or stalking, or sex-based harassment, please contact UND's Title IX Coordinator, Donna Smith, for assistance: 701.777.4171; donna.smith@UND.edu or go to UND.edu/affirmative-action/title-ix.

FACULTY REPORTING OBLIGATIONS REGARDING SEXUAL VIOLENCE: It is important for students to understand that faculty are required to share with UND's Title IX Coordinator any incidents of sexual violence they become aware of, even if those incidents occurred in the past or are disclosed as part of a class assignment. This does not mean an investigation will occur if the student does not want that, but it does allow UND to provide resources to help the student continue to be successful at UND. If you have been the victim of sexual violence, you can find information about confidential support services at UND.edu/affirmative-action/title-ix.

Ensure Accessibility

To comply with the latest accessibility guidelines, documents posted online, including, but not limited to, Adobe PDF files, Microsoft Word documents, Microsoft PowerPoint presentations, and online flipbooks, must be screen-reader friendly.

For directions on how to make your syllabus and other course materials accessible, go to Blackboard > Services > Atomic Learning > Creating an Accessible Syllabus (for technical assistance with Atomic Learning, contact UND Tech Support at UND.edu/tech-support).

OMBUDS OFFICE: "It is not our differences that divide us. It is our inability to recognize, accept, and celebrate those differences" (Audre Lorde). Before your differences with others become difficult and costly conflicts or formal grievances, in both seen and unseen ways, talk with the Ombuds Office in an informal, identity-protecting, impartial, and independent space. 314 Cambridge St Room 201. 701.777.6239. www.UND.edu/ombuds

UND CARES RESPONSE TEAM: The [UND Cares Response Team](#) is available to assist with incidents involving UND students 24 hours a day, seven days a week. They respond to incidents such as major accidents, missing students, sickness that interferes with attending classes, death, suicidal ideations, situations involving self-harm, psychological trauma and sexual violence. Contact directly at 701.777.2664 during regular business hours OR 701.777.3491 after hours.

If problems occur, students are required to work through channels of communication to resolve the problem before going to the chair or dean. The channel is student, instructor, chair, associate dean health sciences, and dean.

SCHEDULE

M/W: 9am-10am (F: 8am-9am as needed)

1/9 (M)	No Class
1/10 (Tu)(9:30am-12:30pm; 1:30pm-5:00pm)	Anatomy: Extrinsic/Intrinsic of Back; U/E circulation & Brachial Plexus; Anterior Neck (E101)
1/11 (W)(8:00am-10:00am; 1:00pm-3:00pm)	Anatomy: Extrinsic/Intrinsic of Back; U/E circulation & Brachial Plexus; Anterior Neck (8:00am-10:00am (E221)); 1pm- 3pm(E101)
1/12 (Th)(8:00am-11:00am) (3:00pm-4:00pm)	Anatomy: Extrinsic/Intrinsic of Back; U/E circulation & Brachial Plexus; Anterior Neck (E101) Biomechanics: Shoulder (E312)
1/13 (F) (9:00am-10:00am) (1:00pm-3:00pm)	Anatomy: Extrinsic/Intrinsic of Back; U/E circulation & Brachial Plexus; Anterior Neck (E221) Biomechanics: Shoulder (E221)
1/16 (M)	Martin Luther King Jr. Day Holiday – No Class
1/18 (W)	Anatomy: Cubital Fossa; Posterior forearm muscles *Quiz 1 (1:00pm-3:00pm) E101*
1/20 (F)(8:00am-9:00am)	Anatomy (Content TBD)
1/23	Anatomy: Posterior/lateral forearm muscles/dorsum of hand
1/25	Anatomy: Posterior/lateral forearm muscles/dorsum of hand
1/27 (F)(8:00am-9:00am)	Anatomy (Content TBD)
1/30	Anatomy: Anterior forearm musculature
2/1	Anatomy: Anterior forearm musculature
2/3 (F) (8:00am-9:00am)	Anatomy (Content TBD)
2/6	Biomechanics: Elbow
2/8	Biomechanics: Elbow *Mid-Block Exam 1 (1:00pm-3:00pm) E101*
2/10 (F)(8:00am-9:00am)	Anatomy (Content TBD)
2/13	Biomechanics: Wrist

2/15	Biomechanics: Wrist
2/17 (F)(8:00am-9:00am)	Anatomy (Content TBD)
2/20	President's Day Holiday – No Class
2/22	Anatomy: Intrinsic Hand Muscles (Time may be altered due to CSM)
2/23 (Th) (1:00pm-5:00pm)	Recorded Lectures – No in class activities Biomechanics: Recorded Hand Lecture Movement Systems Exam & Eval II: Recorded Hand Lecture
2/24 (F)(8:00am-9:00am)	CSM – No Class
2/27	Anatomy: Intrinsic Hand Muscles
3/1	Review
3/3 (F) (8:00am-9:00am)	Anatomy (Content TBD) / Review
3/8 (1:00pm-3:00pm)	*Mid-term Exam (1:00pm-3:00pm) E101 *
3/13-3/17	Spring Break
3/20	Anatomy (Content TBD)
3/22	Anatomy (Content TBD)
3/24 (F)(8:00am-9:00am)	Anatomy (Content TBD)
3/27	Review
3/29	Anatomy: Intercostals, posterior thoracic wall; Heart, lungs, and face
3/31 (F)(8:00am-9:00am)	Anatomy (Content TBD)
4/3	Anatomy: Intercostals, posterior thoracic wall; Heart, lungs, and face
4/5	Anatomy: Intercostals, posterior thoracic wall; Heart, lungs, and face *Quiz 2 (1:00pm-3:00pm) E101*
4/7	Good Friday – No Class
4/10	Easter Break – No Class
4/12	Anatomy: Face and TMJ
4/17	Anatomy: Face and TMJ

4/19	Normal Gait *Mid-Block Exam 2 (1:00pm-3:00pm) E101*
4/24	Normal Gait
4/26	Pathologic Gait
5/1	Pathologic Gait
5/3	Review for Final Exam
5/5 (F)	*Final Exam (8:00am-1:00pm) E101*