

PT 611 - Movement System
Examination & Evaluation I
Fall 2024
Tuesday/Thursday 9:30am-12:30pm
Room E312



COURSE DESCRIPTION:

Integration of examination and evaluation techniques for diagnosis and prognosis of impairments and activity limitations of the human movement system. Emphasis is given to musculoskeletal and neurological examination and evaluation components.

DEPARTMENT OFFERING THE COURSE:

UND School of Medicine and Health Sciences - Department of Physical Therapy

CREDIT HOURS: 3 [Credit Hours](#)

ABOUT THE PROFESSOR & CONTACT INFORMATION:

Name: Steven Halcrow, PT, DPT, OCS; Kevin O'Brien, PT, DPT, Cert. MDT; Brittany Johnson, PT, DPT, Michelle LeBrecque, PT, DPT; Amanda Wilson PT, DPT, NCS; Jessica Barczy Zorn PT, DPT

Preferred Pronouns: Steven Halcrow – he/him; Kevin O'Brien – he/him; Brittany Johnson - she/her; Michelle LeBrecque – she/her; Amanda Wilson – she/her; Jessica Barczy Zorn – she/her

Addressed: First names

Phone: Steven Halcrow – 701-777-3857; Kevin O'Brien – 701-777-3871; Brittany Johnson – 701-777-6289; Michelle LeBrecque – 701-777-6257; Amanda Wilson – 701-777-3662; Jessica Barczy Zorn – 701-777-3668

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Office Location: Steven Halcrow – E352; Kevin O'Brien – E341; Brittany Johnson – E332; Michelle LeBrecque – E328; Amanda Wilson – E334; Jessica Barczy Zorn – E337

Student Hours: Please email professor about available times to meet or utilize “open office hours”

COURSE CONTACT HOURS:

Schedule (Clock hours): 9:30am – 12:30pm, Tuesday & Thursday

Lecture: Varying hours

Laboratory: Varying hours

COURSE PREREQUISITES:

Registered in the professional Physical Therapy program.

COURSE OBJECTIVES:

After successfully completing this course, you should be able to:

1. Understand principles and concepts related to orthopedic assessment, including the detailed patient history, observation, AROM, PROM, resisted isometrics, functional assessments, peripheral joint scan, myotomes, dermatomes special tests, reflexes and cutaneous distribution, joint play movement, palpation, and roentgenograms. (SRE: 7A, 7C1, 7D1A, 7D1B, 7D2; Bloom's: Cognitive Domain-Understand; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

2. Develop basic assessment skills and perform selected assessments to the following areas: (SRE: 7C1, 7D1B; Cognitive Domain-Apply; Psychomotor Domain-Adaptation; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)
 - a) Lumbar spine
 - b) Pelvis and hip
 - c) Knee
 - d) Foot and ankle
 - e) Body mechanics

3. Upon completion of the assessment, be able to identify significant signs and symptoms, determine probable causes of the signs and symptoms, demonstrate clinical decision-making skill, and plan for appropriate physical therapy intervention or referral to other health care professionals. (SRE: 7B, 7C1, 7D1D, 7D1B, 7D2, 7D24; Cognitive Domain-Apply; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

4. Execute basic assessment and clinical decision-making skills. (SRE: 7B, 7C1, 7D1B; Cognitive Domain-Apply; Psychomotor Domain-Mechanism; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

5. Appraise the findings of the examination and plans for intervention in SOAP format, using evidence based articles to support findings. (SRE: 7C1, 7D4, 7D12, 7D15; Cognitive Domain-Evaluate; Program Goal 1 & 5; Threads: Evidence Based Practice)

6. Demonstrate professional behavior and communication skills in all aspects of PT practice including interaction and teaching with patients, family, peers and health care professionals, and understand the implications of individual and cultural differences. (SRE: 7B1, 7C2; Affective Domain-Valuing; Program Goal 1; Threads: Professionalism & Cultural Diversity)

7. Demonstrate proper body mechanics principles and describe the theory behind the need for proper body mechanics. (SRE: 7B1, 7D10; Psychomotor Domain-Mechanism; Cognitive Domain: Understand; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

8. Correctly perform and interpret the vital sign measurements of heart rate, respiratory rate, blood pressure and pulse oximetry relative to resting and physical activity, health status, and safety. (SRE: 7D1B, 7D1Ca-i, 7D2; Psychomotor Domian-Complex Overt Response; Cognitive Domain-Apply; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

9. Correctly screen and analyze posture. (SRE: 7D1Ca-i, 7D2, 7D21; Cognitive Domain-Analyze; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

10. Explain the relationship of the center of gravity of the human body to all body segments (SRE: 7D2, 7D21; Cognitive Domain-Understand; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

11. Recognize the importance of the position the pelvis assumes with various activities and its effect on posture. (SRE: 7D2, 7D21; Cognitive Domain-Understand; Affective Domain-Responding to Phenomena; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

12. Discriminate between different posture types. (SRE: 7D2, 7D21; Cognitive Domain-Analyze; Affective Domain-Valuing; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

13. Identify asymmetry of body parts and determine the significance of such. (SRE: 7D2, 7D21; Cognitive Domain-Understand; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

14. Be able to implement appropriate postural correction procedures. (SRE: 7D2, 7D21; Cognitive Domain-Apply; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

15. Examine muscle strength using manual muscle testing and determine the appropriate muscle grade including: (SRE: 7D1Ca-i, 7D2; Cognitive Domain-Remember, Understand, Apply; Psychomotor Domain-Guided Response, Mechanism; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)
 - a) Define manual muscle testing and discuss the purposes of manual muscle testing.
 - b) Discuss the reliability and validity of manual muscle testing.
 - c) Define and describe the muscle strength grading system.

- d) Perform manual muscle testing for a given muscle or muscle group, demonstrating proper positioning, patient instruction, and palpation of the muscles being tested.
- e) Determine the appropriate muscle strength grade based on the performance of the patient.
- f) Identify substitution patterns common to individual muscle tests.
- g) Examine a simulated patient to evaluate muscle strength and analyze the potential for specific etiologies assigned (nerve root versus peripheral nerve injury, muscle injury versus neurological injury, etc.)

16. Examine joint range of motion using goniometric measurements and determine the available ROM including: (SRE: 7D1Ca-i, 7D2; Cognitive Domain-Remember, Understand, Apply; Psychomotor Domain-Guided Response, Mechanism; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

- a) Demonstrate the correct technique of joint range of motion measurement for all joints of the extremities including proper positioning and instruction, correct alignment of the goniometer and correct reading of the goniometer.
- b) Examine the presence of normal and abnormal range of motion in a given subject and record the findings using proper nomenclature.
- c) State the normal range of motion for each joint.
- d) Discuss the purpose, clinical uses, and the reliability of goniometric measurements.

17. Palpate and identify anatomical landmarks and structures. (SRE: 7D1Ca-i, 7D2; Cognitive Domain-Understand, Apply; Psychomotor Domain-Guided Response, Mechanism; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

- a) Identify and palpate bony landmarks and superficial muscles of each body region.
- b) Identify and palpate (where possible) major joint structures including ligaments and bursae.
- c) Identify the location of, and palpate (where possible) major nerves and blood vessels.
- d) Apply the anatomical landmarks to manual muscle testing and goniometry.
- e) Apply the anatomical landmarks to musculoskeletal examination procedures.

18. Examine adult clients for basic motor control impairments and functional deficits. (SRE: 7D1A, 7D1Ca-l; Cognitive Domain-Analyze; Psychomotor Domain-Guided Response; Program Goal 1 & 3; Threads: Critical Inquiry/Clinical Decision Making)

19. Contrast Traditional Models and Task-oriented Model of Neurological Assessment. (SRE: 7D3, Cognitive Domain-Analyze; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

20. Identify the purposes and components of the examination of motor function, including but not limited to the following impairments: (SRE: 7D1Ca-l, 7D2; Cognitive Domain-Understand; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

- a) Muscle weakness
- b) Abnormal tone/reflexes
- c) Sensory and perceptual dysfunction
- d) Incoordination
- e) Balance dysfunction.

21. Analyze use of standardized scales for functional assessment. (SRE: 7D12, 7D21; Cognitive Domain Analyze; Program Goal 1; Threads: Critical Inquiry/Clinical Decision Making)

22. Apply evaluation screening skills (posture, balance, etc.) that have been learned into “real-life” situations (i.e., lab practical’s, community health fairs, etc) under supervision of instructors.* (SRE: 7B1, 7D17; Cognitive Domain -Apply; Psychomotor Domain-Mechanism; Program Goal 1 & 3; Threads: Critical Inquiry/Clinical Decision Making)

COURSE SCHEDULE AND OUTLINE OF CONTENT:

PT 611 Movement System Examination and Evaluation I (T,Th) 9:30am-12:30pm				
DATE	LEAD	ASSIST	CONTENT	READINGS
8/27 (T)	Steve/Kevin	Michelle, Brittany, Jessica	Intro into Screening of Systems Lecture: Screening of Systems Lab: Cardiopulmonary, Integumentary	

8/29 (Th)	Amanda/Steve	Michelle, Brittany, Kevin, Jessica	Screening of Systems Cont. Lab: Neuromuscular, Musculoskeletal	
9/3 (T)	Steve	Michelle, Brittany, Kevin, Jessica	Lecture: Basics of Goniometry/MMT Lecture: Intro to Subjective History Lab: History Taking Exercise	
9/5 (Th)	Steve		Lecture: Principles and Concepts	
9/10 (T)	Amanda	Brittany, Michelle, Jessica	Lab: Principles and Concepts - Myotomes, Dermatomes, Reflexes including pathological reflexes, UMNL tests for LE's	
9/12 (Th)	Steve, Brittany	Michelle, Jessica	Content Review - Application Lab/Socratic	
9/17 (T)	Steve	Ricky	QUIZ #1: All previous information Lecture: Roadmap to Success	
9/19 (Th)	All		CHECK OFF #1: Screening of Systems (Myotomes, Dermatomes, Reflexes, Vitals)	
9/24 (T)	Steve	Kevin, Brittany, Michelle, Jessica	Lecture: Hip Lab: Hip - AROM/PROM	
9/26 (Th)	Steve	Michelle, Kevin, Brittany, Jessica	Lab: Hip - Surface Anatomy, Goniometry, Gross Strength/RIMs, MMT	
10/1 (T)	Steve/TA's	Kevin, Brittany, Jessica	Lab: Hip - Myotomes, Dermatomes, Reflexes, Special Tests	
10/3 (Th)	All		CHECK OFF #2: Hip	
10/8 (T)	Amanda	Michelle, Steve, Brittany, Kevin, Jessica	Neurological Assessment: Introduction to Neurological Assessment, Sensory Testing	
10/10 (Th)	Amanda	Kevin, Michelle, Steve, Brittany, Jessica	Neurological Assessment: Cranial Nerves	
10/14 – 10/18 Midterm Week	All		WRITTEN EXAM #1 – comprehensive from 1st half	
10/22 (T)	Brittany	Michelle, Steve, Kevin, Jessica	Lecture: Knee Lab: Knee - AROM, PROM, Surface Anatomy, Goniometry	
10/24 (Th)	Brittany	Michelle, Steve, Kevin, Jessica	Lab: Knee - Gross Strength/RIMs, MMT, Special Tests, Review of Neuro Assessment	
10/29 (T)	Kevin	Steve, Brittany, Michelle, Jessica	Lecture: Lower Leg, Ankle, Foot Lab: Lower Leg, Ankle, Foot - AROM, PROM, Surface Anatomy, Goniometry	
10/31 (Th)	Kevin	Steve, Brittany, Michelle, Jessica	Lab: Lower Leg, Ankle, Foot - Gross Strength/RIMs, MMT, Special Tests	

11/5 (T)	Steve/Kevin	Switch with PT 602 Quiz – W202 @ 8:30am Review – E312 @ 9:30am	QUIZ #2: Knee, Ankle, Foot Lab Review of Knee and Lower Leg/Ankle/Foot	
11/7 (Th)	All		CHECK OFF #3: Knee, Ankle, Foot	
11/12 (T)	Steve	Michelle, Brittany, Kevin, Jessica	Lecture & Lab: Posture	
11/14 (Th)	Steve	Michelle, Brittany, Kevin, Jessica	Lab: Posture	
11/19 (T)	Kevin	Steve, Brittany, Jessica	QUIZ #3: Posture on Bb – open note/book (available 11/14) due 11/19 Lecture: Lumbar Lab: Lumbar - Surface Anatomy	
11/21 (Th)	Kevin	Steve, Brittany, Jessica	Lab: Lumbar - AROM, Goniometry, MMT, Special Tests, review myotome, dermatomes, reflexes	
11/26 (T)	Kevin/Michelle	Steve, Brittany, Jessica	Lecture/Lab: Sacroiliac joint (SI)	
11/28 (Th)			Thanksgiving Break	
12/3 (T)	Kevin	Steve, Brittany, Michelle, Jessica	QUIZ #4: Lumbar & SI CHECK OFF #4: Lumbar & SI	
12/5 (Th)	Amanda	Michelle, Steve, Brittany, Kevin, Jessica	Neurological Assessment: Balance - Strategies & Screening Neurological Assessment: Non-Equilibrium Coordination & Proprioception	
12/10 (T)	Ricky	All	Normal Gait Lab (Biomechanics class)	
12/12 (Th)	Steve	Kevin, Amanda, Brittany, Jessica	Quiz #5 - Gait and Balance Review of Semester	
12/16 – 12/20	All		Finals Week: Written Exam #2 (Comprehensive – entire semester) Practical Exam #1 (Comprehensive w/ standardized patients)	

DESCRIPTION OF TEACHING METHODS AND LEARNING EXPERIENCES:

- This course will utilize a variety of teaching methods including traditional lecture, psychomotor laboratory application, case study application, and varying review methods.

COURSE MODE OF DELIVERY:

- Synchronous, in-person
 - MUST include substantive and regular interaction that occurs with each mode of delivery

MATERIALS – TEXT, READINGS, & SUPPLEMENTARY READINGS:

REQUIRED TEXTBOOK:

Magee D., Manske R. *Orthopedic Physical Assessment* (7th Ed)
Cram Session in Goniometry and Manual Muscle Testing (Latest edition)
Biel - "Trail Guide to the Body" (B) (Latest Ed)

REFERENCE MATERIAL

Dutton M. – "Orthopaedic Examination, Evaluation, & Intervention"
O’Sullivan SB, Schmitz TJ. – "Rehabilitation: Assessment and Treatment"
McNerney T, McGlynn E. – "Reliable Orthopedic Outcome Measures" (ROOM)
Gulick D. – "Ortho Notes" (Clinical Examination Pocket Guide)

METHODS OF STUDENT EVALUATION:

In this course, your learning will be assessed in the following ways:

- Quizzes
- Check-Offs
- Mid-Term Written Examination
- Final Written and Practical Examination
- Assignments

GRADING SCALE:

Grading Scale	Breakdown
A 90% to 100%	Assignments – 4%
B 80% to 89.99%	Quiz #1 – 4.5%
C 76% to 79.99%	Quiz #2 – 4.5%
F < 76%	Quiz #3 – 4.5%
	Quiz #4 – 4.5%
	Check Off #1 – 4.5%
	Check Off #2 – 4.5%
	Check Off #3 – 4.5%
	Check Off #4 – 4.5%
	Written Exam #1 – 20%
	Written Exam #2 – 20%
	Practical Exam #1 – 20%

WRITTEN EXAMS:

Written examinations will require a 76% or above to avoid remediation. Remediation will include discussion with a faculty member and **WILL INCLUDE** a re-take of the examination at the discretion of faculty. **The first attempt will be used for all grading purposes.**

LAB PRACTICAL EXAMS:

The student must receive a passing grade (80%) on ALL laboratory practical examinations in order to successfully complete this course. A failed lab practical examination **must be repeated** and a passing grade received; however **the grade received on the first attempt will be used for all grading purposes.** If the student fails the retake lab practical examination, procedures from the Scholastics Standards document will be initiated.

For more information on grading policies, please refer to the [UND-PT Scholastic Standards Document](#)

ATTENDANCE:

Attendance is required for all lectures and labs. If you are aware of an upcoming absence, you must provide a written notification (email) to Steven (steven.halcrow@und.edu), prior to absence. Missed material will be your responsibility to make up. Excessive absences may have a negative impact on your final grade. Follow PT guidelines for contacting department with acute illness or injury. 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, dean.

COURSE ACCESS & TECHNICAL REQUIREMENTS

This course was developed and will be facilitated utilizing Blackboard. For access go to: <http://blackboard.UND.edu> and log in with your NDUS.Identifier. If you do not know your NDUS Identifier or have forgotten your password, please visit [Your NDUS Account Webpage](#)

Visit the [UND Technical Requirements](#) webpage for more information. Students are expected to use their official UND email in the course. For technical assistance, please contact [UND Technical Support](#) at 701.777.2222

OTHER OPPORTUNITIES

The Department of Physical Therapy has multiple opportunities for students to participate in clinical practice activities under the supervision of UND faculty, all of whom are licensed physical therapists. During this particular course, you may be required to participate in the examination, evaluation, and physical therapy interventions of community members. You will be providing primary care to individuals with impairments and/or dysfunction during laboratory classes, community health fairs, pro bono clinics, and/or within traditional clinical practices.

ARTIFICIAL INTELLIGENCE (AI)

Artificial Intelligence tools are allowed in this course as approved by the instructor(s). Students are required to disclose if they use AI-generated text or images and how they apply it in their work. Failure of students to acknowledge their use of AI or using fabricated information could result in their violation of the Academic Integrity Policy. Students must ensure the originality of their work, maintain academic integrity, and avoid any type of plagiarism. The students need to understand the material and complete assignments on their own, using AI tools as a supplement rather than a replacement for their work. Students should not use sources that are cited by AI tools without having read them because generative AI tools can either create fake citations or cite a real piece of writing, but the cited content may be inaccurate. The faculty reserves the right to use various plagiarism-checking tools in evaluating students' work, including those screening for AI-generated content, and impose consequences accordingly.

For more information on AI Policies, please visit [Artificial Intelligence Resources](#).

UNIVERSITY OF NORTH DAKOTA POLICIES & RESOURCES:

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, Assistant Vice President for Equal Opportunity and Title IX/ADA Coordinator, 102 Twamley Hall, 701.777.4171, UND.EO.TitleIX@UND.edu or the Office for Civil Rights, U.S. Dept. of Education, 230 S. Dearborn St., 37th Floor, 500 West Madison, Suite 1475, Chicago, IL 60611 or any other federal agency.

Academic Integrity

Academic integrity is a serious matter, and any deviations from appropriate behavior will be dealt with strongly. At the discretion of the professor, situations of concern may be dealt with as a scholastic matter or a disciplinary matter.

As a scholastic matter, the professor has the discretion to determine appropriate penalties for the student's workload or grade, but the situation may be resolved without involving many individuals. An alternative is to treat the situation as a disciplinary matter, which can result in suspension from the University, or have lesser penalties. Be aware that I view this as a very serious matter and will have little tolerance and/or sympathy for questionable practices. A student who attempts to obtain credit for work that is not their own (whether that be on a paper, quiz, homework assignment, exam, etc.) will likely receive a failing grade for that item of work, and at the professor's discretion, may also receive a failing grade in the course. For more information read the [Code of Student Life](#).

Accessibility Statement

The University of North Dakota is committed to providing equal access to students with documented disabilities. To ensure access to this class and your program, please contact [Accessibility for Students](#) to engage in a confidential discussion about accommodations for the classroom and clinical settings. Accommodations are not provided retroactively. Students are encouraged to register with Accessibility for Students at the start of their program.

More information can be obtained by email, UND.accessibilityforstudents@UND.edu, or by phone at 701.777.2664.

Religious Accommodations

UND offers religious accommodations, which are reasonable changes in the academic environment that enable a student to practice or observe a sincerely held religious belief without undue hardship on the University. Examples include time for prayer or the ability to attend religious events or observe a religious holiday. To request an accommodation, complete [student religious accommodation request form](#) . If you have any questions, you may contact the [Equal Opportunity & Title IX Office](#).

Pregnancy Accommodations

Students who need assistance with academic adjustments related to pregnancy or childbirth may contact the [Equal Opportunity & Title IX Office](#) or Academic Affairs to learn about your options. Additional information and services may be found at [Pregnancy Resources](#).

Resolution of Problems

Should a problem occur, you should speak to your instructor first. If the problem is not resolved by speaking with your instructor, refer to the college grievance policy by contacting the department chair or the dean's office. [Link to college grievance policy.] Should the problem persist after taking these initial steps, you have the right to go to the provost next, and then to the president.

Reporting of Discrimination, Harassment, or Sexual Misconduct

If you or a friend has experienced sexual misconduct, such as sexual harassment, domestic violence, dating violence, or stalking, please contact the Equal Opportunity & Title IX Office or UND's Title IX Coordinator, Donna Smith, for assistance at 701.777.4171 or donna.smith@UND.edu.

You may also contact the Equal Opportunity & Title IX office if you or a friend has experienced discrimination or harassment based on a protected class, such as race, color, national origin, religion, sex, age, disability, sexual orientation, gender identity, genetic information, pregnancy, marital or parental status, veteran's status, or political belief or affiliation.

Faculty Reporting Obligations Regarding Discrimination, Harassment, or Sexual Misconduct

It is important for students to understand that faculty are required to share with UND's Title IX Coordinator any incidents of sexual misconduct or of discrimination or harassment based on a protected class that 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

impacted by discrimination, harassment, or sexual misconduct, you can find information about confidential support services at the Equal Opportunity and Title IX webpage.

Health and Safety

UND is committed to maintaining a safe learning environment while providing quality learning experiences for our students. 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 or if you have been directed by health professionals to quarantine or isolate. UND follows isolation and quarantine guidelines recommended by the [CDC and the North Dakota Department of Health](#). 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 Community Standards](#). 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. Please consult the [COVID-19 at UND](#) webpage for information regarding on-campus COVID-19 testing, isolation and quarantine guidelines, and vaccines.

***Syllabus and Schedule subject to change.**