

Course Title and Number: PT 616 Movement System Intervention II

Description: This course integrates components of the movement system as it relates to human motor performance across the lifespan. This includes principles and applications of therapeutic intervention with integration of current evidence and clinical decision-making to emphasize appropriate selection, instruction, and progression of physical therapy interventions.

Department Offering the Course:

Physical Therapy

Credit Hours: 3 credit hours

Course Coordinators: Cindy Flom-Meland and Steven Halcrow

Clock Hours:

Schedule: Tuesday & Thursday – 1:30-5:00 pm (Lecture/Lab)

Course Prerequisites:

Registered in the Professional Physical Therapy curriculum

Course Objectives:

Upon completion of this course the student will be able to:

1. Consistently demonstrate professional attitudes and behaviors during laboratory sessions and practical examinations.
2. Assess the safety risks for the health care provider and demonstrate proper body mechanics during the performance of all skills to avoid personal injury.
3. Identify and apply intervention techniques with respect and consideration for patients'/clients' differences/diversity, values, preferences, and expressed needs.
4. Accurately assess patient outcomes following selected interventions and adjust the plan of care in response to patient/client status observing precautions, and contraindications, and educating patient/client on the rationale for intervention.
5. Demonstrate appropriate applications of passive, active-assistive, and active range of motion techniques of upper extremities.
6. Demonstrate the ability to perform a fitness assessment, evaluate the findings, and develop an appropriate intervention program related to strength, endurance, body composition, or flexibility.
7. Incorporate an understanding of bioenergetic principles into the analysis and prescription of physical activity.
8. Describe the process of treatment protocol development. Evaluate and implement treatment protocols relative to client examination/evaluation and client needs/wants. (SRE: 7D24, 7D30; Bloom's: Cognitive – comprehension)
9. Prescribe a safe and appropriate resistance training program based on client/patient age, gender, health status, and goals. (SRE: 7C, 7D24, 7D27i; Bloom's: Cognitive - comprehension, application and synthesis)
10. Implement an appropriate program based on the isokinetic results and incorporate client/patient age, gender, health status, and goals. (SRE: 7D19o, 7D20, 7D24, 7D27i; Bloom's: Cognitive - applying)

11. Describe appropriate resistance training progression relative to health status, gender, age, and goals using a periodized training program. (SRE: 7C, 7D27i, 7D30; Bloom's: Cognitive - comprehension and synthesis)
12. Design an appropriate and safe plyometric/agility program and progression relative to age, gender, health status, and goals of the client/patient. (SRE: 7A; Bloom's: Cognitive - knowledge)
13. Competently administer intervention techniques utilizing appropriate biomechanical and neurophysiological properties of soft tissue and joint mobilization/manipulations based on evaluation and limitations identified – pain or joint restriction. (SRE: 7D19k, 7D19q, 7Dd19v, 7D27f; Bloom's: Cognitive – comprehension and application; Psychomotor – complex overt response and guided response)
14. Competently administer spine assessment and intervention techniques utilizing appropriate biomechanical and neurophysiological properties of soft tissue and joint mobilization/manipulations (e.g. McKenzie, Mulligan, PPIVM, PAIVM) (SRE: 7D19k, 7D19q, 7D19v; 7D27f; Bloom's: Cognitive – comprehension and application; Psychomotor – complex overt response and guided response)
15. Demonstrate therapeutic massage techniques.
 - a. Demonstrate proper draping and positioning of the patient.
 - b. Select the proper media for the massage type.
 - c. Demonstrate appropriate techniques used for the type of massage.
 - d. Discuss indications and contraindications for massage.
16. Determine appropriate physical therapy diagnosis, prognosis, intervention, and outcomes regarding the purpose and functions of bandages and other forms of support for the integumentary and musculoskeletal systems based on examination and evaluation findings, including:
 - a. demonstrate appropriate basic bandaging based on a clinically relevant problem.
 - b. safe and effective plan of care developed with client goals and outcomes within available resources and expected time constraints.
17. Describe and demonstrate appropriate acute care examination, evaluation, prognosis, diagnosis, intervention, and expected outcomes for postoperative limb amputation in preparation for a prosthesis. To demonstrate this ability the student will be able to:
 - a. discuss appropriate examination and evaluation testing.
 - b. discuss underlying primary or secondary systems pathology in relation to prognosis and outcomes.
 - c. discuss the various postoperative dressings available to influence residual limb shaping
 - d. discuss & demonstrate proper positioning of the client and residual limb to prevent joint restrictions which may adversely affect prosthesis fitting and use
 - e. demonstrate proper wrapping of the residual limb to provide the best shape of the residual limb for prosthetic fitting
18. Perform and teach the patient, when applicable, specific therapeutic interventions designed to establish or maintain muscle control/learning, coordination, and/or patient relaxation. To demonstrate this ability, the student should be able to: (SRE: 7D10, 7D27i; Bloom's: Cognitive – comprehension, analysis, application, synthesis; Psychomotor – set, guided response)

- a. Discuss the application of the Kenny technique of muscle re-education of prime movers, including identification of the rationale and requirements of this type of exercise.
- b. Identify and discuss the primary principles and perform techniques of neuro-facilitation (Traditional) approaches, including methods of:
 - Rood
 - Brunnstrom
 - Bobath: Neuro-Developmental Training (NDT)
 - Kabat, Knott & Voss: Proprioceptive Neuromuscular Facilitation (PNF)
- c. Identify and discuss primary principles of the Task-Oriented (Contemporary/Motor Learning) Model in treatment interventions.
- d. Design treatment interventions (based on b and c above) for common body/structure impairments observed in patients with neurological health conditions, such as but not limited to:
 - Weakness
 - Abnormal Tone
 - Sensory/Perceptual Dysfunction
 - Incoordination
 - Balance Dysfunction

Outline of Contents and Assigned Instructor:

See attached course syllabus.

Description of Teaching Methods and Learning Experiences:

Lecture – traditional lecture.

Lab – practice of skills

Discussion – large and small group discussion of cases

Grading:	A	90% - 100%
	B	80% - 89.9%
	C	76% - 79.9%
	D/F	< 76%

Texts:

1. *Mobility in Context: Principles of Patient Care Skills, 2nd – Johansson/Chinworth
2. ACSM's Guidelines for Exercise Testing and Prescription, 11th ed
3. Clinical Orthopaedic Rehabilitation – Giangarra/Manske/Brotzman, 4thed
4. Orthopedic Joint Mobilization & Manipulation – Manske/Lehecka/Reiman/Loudon
5. *Improving Functional Outcomes in Physical Rehabilitation, 3rd ed – O'Sullivan/Schmitz
6. *Therapeutic Exercise: Foundations & Techniques, 7th ed – Kisner/Colby

*(Available on AccessPhysiotherapy)

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

Department of Physical Therapy Honor Code Pledge:

"Upon my honor as a professional student in the physical therapy program at the University of North Dakota, I pledge that I will not give nor receive unauthorized aid on written examinations, laboratory practical examinations, written assignments, take home assignments or clinical assignments." Examination disclaimer: "I affirm that I have adhered to the Honor Code in this assignment"

Forms of Academic Dishonesty. Academic dishonesty includes, but is not limited to:

1. Copying or distributing examination items
2. During testing, using crib notes or various forms of technology not authorized by faculty
3. Copying another student's written paper or examination, with or without their knowledge
4. Helping someone else cheat on a test
5. Communicating or collaborating during a test by electronic means such as instant messaging, telephone, texting, smart watches, or social media.
6. Discussing test items or answers (written or laboratory) with students who have not yet taken the examination
7. Cutting and pasting text from any source without giving proper citation to that source
8. Plagiarism of any materials
9. Fabricating or falsifying written materials
10. Falsely reporting information or actions in clinical or classroom laboratories
11. Submitting the same paper, or a substantially similar paper, for the requirements of more than one course without the approval of the instructor(s) concerned
12. Submitting term papers or assignments written by another person
13. Consenting to having one's work used by another student as his or her own
14. Collaborating on a project (in person or via electronic means) when the instructor asked for individual work
15. Using a false excuse to obtain an extension on a due date or delay an examination
16. Depriving other students of necessary course materials by stealing books, periodicals, or other materials from libraries, AV centers, etc.

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. rev 8/19

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.

Disability Access Statement

Contact me 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, www.UND.edu/disability-services 180 McCannel Hall, or 701.777.3425.

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.

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 University Police Department 701.777.3491 after hours.

Covid 19:

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.

PT 616: Movement System Intervention II

Class Schedule: T/TH 1:30 – 5:00 pm

Course Coordinators: Cindy Flom-Meland, Steven Halcrow

Texts: See above

1/10 T	Lecture/Lab	Class time reserved for Anatomy lecture	Gary
1/12 TH	Lecture/Lab	Class time reserved for anatomy lab and biomechanics lecture	Gary; Ricky
1/17 T	Lecture/Lab	Cervical - Ther Ex (ROM/stretching, resistive training)	Ricky
1/19 TH	Lecture/Lab	Cervical - joint mobs, McKenzie	Gary, Kevin
1/24 T	Lecture/Lab	Exercise Psychology (motivational interviewing; patient buy-in; adherence) (3:00-5:00 pm)	Dave
1/26 TH	Lecture/lab	Shoulder - Jt. Mobs, McKenzie, soft tissue	Gary, Kevin
1/31 T	Lecture/Lab	Shoulder - joint Mobs	Gary, Kevin
2/2 TH	Lecture/Lab	Shoulder - Ther Ex (ROM/stretching, resistive training)	Ricky
2/7 T	Lecture/Lab	Written Exam #1 / Check-off Cervical & Shoulder	
2/9 TH	Lecture/lab	Elbow - joint mobs	Gary, Kevin
2/14 T	Lecture/lab	Elbow - ROM/stretching, resistive ex/ protocols	Ricky
2/16 TH	Lecture/lab	Wrist/hand - protocols, ROM/stretching, resistive ex	Ricky
2/21 T	Lecture/lab	Wrist/hand - joint mobs; Multi-joint Exercise in function	Gary, Kevin
2/23 TH	Lecture/lab	Review / Case Application	Kevin
2/28 T	Lecture/lab	Wheelchair Basics and Fitting	Meridee
3/2 TH	Lecture/lab	Aerobic Exercise Physiology, Graded Exercise Concepts (1-hour lecture); Structured Practical Review	Gary
3/7 T	Lecture/Lab	Mid-Term Exam Week (Written Exam II/Practical II TBD)	
3/9 TH	Lecture/lab	Mid-Term Exam Week	
3/14 T		SPRING BREAK	
3/16 TH		SPRING BREAK	
3/21 T	Lecture/Lab	Massage	Emily
3/23 TH	Lecture/Lab	Massage	Emily
3/28 T	Lecture/Lab	Intro to Amputation - limb wrapping (UE and LE)	Cindy
3/30 TH	Lecture/Lab	Residual limb wrapping continued	Cindy
4/4 T	Lecture/lab	Check Off - Integumentary/Massage (Combined with PT 612)	All
4/6 TH	Lecture/Lab	Upper Extremity: PNF Patterns, NM Facilitation	Cindy
4/11 T	Lecture/lab	Upper Extremity: PNF Patterns, NM Facilitation	Cindy
4/13 TH		Bed mobility/pelvis/side lying	Cindy
4/18 T	Lecture/Lab	Lower trunk rotation/hook lying	Cindy
4/20 TH	Lecture/Lab	Prone-on-elbows; quadruped activities	Cindy
4/25 T	Lecture/lab	Bridging; upright/kneeling	Cindy
4/27 TH	Lecture/lab	Upright sitting/sit-to-stand/transfers	Cindy
5/2 T		Modified plantigrade/standing/gait	Cindy
5/4 TH		Review / Case Application	Cindy
May 8-12	EXAM	Written Exam III/Practical II	ALL