PTAT-1420: THERAPEUTIC EXERCISE

Cuyahoga Community College

Viewing: PTAT-1420 : Therapeutic Exercise

Board of Trustees:
November 2024

Academic Term:
Fall 2025

Subject Code
PTAT - Physical Therapist Assist

Course Number:
1420

Title:
Therapeutic Exercise

Catalog Description:
Physical therapy techniques and principles utilized in therapeutic exercise, including the progression of therapeutic exercise.

Credit Hour(s):
3

Lecture Hour(s):
2

Lab Hour(s):
3

Other Hour(s):
0

Requisites

Prerequisite and Corequisite
PTAT-1300 Functional Anatomy, and PTAT-1312 Fundamentals of Physical Therapy, and PTAT-1320 Introduction to Therapeutic Exercise, and departmental approval.

Outcomes

Course Outcome(s):
A. Distinguish the impact of therapeutic exercise on physical function.

Essential Learning Outcome Mapping:
Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):
1. Describe the goals of therapeutic exercise.
2. Integrate skills of therapeutic exercise to all patient populations.
3. Develop proficiency in the documentation of treatments/interventions practiced in this course.
4. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
5. Recognize the impact that differences in cultural, ethnic, socioeconomic, and psychological background can have on patient interaction and response to treatment.
6. Demonstrate professional behaviors in the classroom and laboratory setting, which include but are not limited to the following: communication and interpersonal skills, problem solving/critical reasoning skills, honesty, integrity, and ethical behavior, dependability and responsibility, positive response to feedback and the ability to interpret and follow through on feedback, ability to work as a team member, willingness to assist classmates, and demonstration of initiative and self-directedness.
7. Differentiate between the goals as related to the type of exercise being performed.
8. Apply the principles of manual resistive exercise.

9. Identify and explain the use of the various forms of equipment used in resistive exercise.
10. Plan and perform treatment strategies to treat patients with therapeutic exercise programs for common musculoskeletal lesions and surgeries.
11. Discuss the rationale for and perform various exercises for common musculoskeletal lesions.
12. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
13. Develop problem solving and critical decision making skills when treating patients using therapeutic exercise.
14. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
15. Demonstrate the progression of exercise programs.
16. Discuss the appropriate indications for joint mobilization.

Course Outcome(s):

B. Apply concepts of motor learning to task specific instruction.

Objective(s):

1. Describe the goals of therapeutic exercise and differentiate between the goals as related to the type of exercise being performed.
2. Perform muscle energy techniques correctly.
3. Explain theories of motor learning.
4. Demonstrate teaching of compensation strategies for balance and recognition of progression in patient's ability to learn and perform these techniques.
5. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
6. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
7. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
8. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.

Course Outcome(s):

C. Design exercise programs utilizing passive, active and active assistive range of motion.

Objective(s):

1. Design exercise programs for specific conditions including, but not limited to: total joint replacements, rotator cuff tear, arthritis, and carpal tunnel syndrome utilizing passive, active and active assistive range of motion.
2. Describe the special considerations for specific conditions including, but not limited to: total joint replacements, rotator cuff tear, arthritis, and carpal tunnel syndrome.
3. Perform appropriate therapeutic exercises to treat the common postural dysfunction of the spine and the principles and demonstrate techniques for treating these problems.
4. Discuss the rationale for the performance of various exercises.
5. Perform proprioceptive neuromuscular facilitation (PNF) patterns and be able to modify for various patient situations
6. Perform and modify goniometric measurements for all patient populations discussed.
7. Place patient in appropriate position for treatment and drape properly.
8. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
9. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
10. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
11. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.

Course Outcome(s):

D. Utilize proper techniques for stretching, strengthening and range of motion exercises while addressing limitations of motion and/or strength.

Objective(s):

1. Describe the goals of therapeutic exercise and differentiate between the goals as related to the type of exercise being performed.
2. Identify and explain the use of the various forms of equipment used in resistive exercise.

3. Discuss the indications, contraindications and goals of stretching.
4. Perform various stretching techniques with proficiency.
5. Plan and perform treatment strategies to treat patients with therapeutic exercise programs for common musculoskeletal lesions and surgeries.
6. Discuss the rationale for and perform various exercises.
7. Perform Proprioceptive Neuromuscular Facilitation (PNF) patterns and be able to modify for various patient situations.
8. Perform muscle energy techniques correctly.
9. Develop problem solving and critical decision making skills.
10. Describe the progression of exercise programs.
11. Indicate the appropriate indications for joint mobilization.
12. Integrate skills of therapeutic exercise will be applied to all patient populations.
13. Develop proficiency in documentation of treatments utilizing the above techniques.
14. Place patient in appropriate position for treatment and drape properly.
15. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
16. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
17. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
18. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.

Course Outcome(s):

E. Apply appropriate therapeutic exercise principles to orthopedic dysfunctions.

Objective(s):

1. Identify the pathological conditions in which limitations of motion to soft tissue and joints can occur.
2. Plan and perform treatment strategies to treat patients with therapeutic exercise programs for common musculoskeletal lesions and surgeries.
3. Identify special considerations for post fracture care, and pre-and post-surgical care.
4. Describe the special considerations for specific conditions including, but not limited to: total joint replacements, rotator cuff tear, arthritis, and carpal tunnel syndrome.
5. Determine appropriate assistive device if indicated.
6. Perform muscle energy techniques correctly.
7. Indicate the appropriate indications for joint mobilization.
8. Perform a manual muscle test for patients with orthopedic diagnosis.
9. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
10. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
11. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
12. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.

Course Outcome(s):

F. Apply therapeutic exercise on the cardiopulmonary systems when designing exercise to meet the plan of care.

Objective(s):

1. Define and list common acute and chronic vascular disorders of the extremities.
2. Perform appropriate treatment for patients with peripheral vascular disease.
3. Describe the normal breathing mechanism and list factors that might impair this system and affect the cough mechanism.
4. Discuss the concept of energy conservation.
5. Define maximal heart rate.
6. Define target heart rate.
7. Describe the principles of cardiac rehabilitation and aerobic exercise.
8. Describe and teach breathing exercises.
9. Plan to incorporate breathing exercises in all treatment plans.
10. Utilize the Karvonen formula to calculate target heart rate zone.

11. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
12. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
13. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
14. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.

Course Outcome(s):

G. Apply principles of therapeutic exercise to special areas of therapeutic exercise.

Objective(s):

1. Discuss the anatomical and physiological changes of pregnancy and pelvic floor anatomy and interventions for pelvic floor impairments.
2. Describe exercise interventions for pregnancy, labor, related conditions and pelvic floor impairments.
3. Discuss and demonstrate interventions for pregnancy-induced pathology including diastasis recti and posture related back pain.
4. Describe the various properties of water including buoyancy, drag and hydrostatic pressure as they impact aquatic therapy.
5. Define aquatic therapy and aquatic exercise and identify the indications, goals, precautions and contraindications to aquatic therapy.
6. Describe at least three pieces of assistive equipment used to enhance buoyancy, and three pieces of assistive equipment used for stretching, strengthening or aerobic conditioning.
7. Demonstrate at least one shallow water, one upper and lower extremity exercise, and one deep-water exercise.
8. Demonstrate the ability to properly bill for therapeutic exercise interventions and treatment times.
9. State the importance of promoting health, wellness and fitness to the patient populations discussed.
10. Properly prepare equipment and treatment area before and after treatment.
11. Enhance students understanding of the role and scope of the physical therapist assistant in the physical therapy department.
12. Seek out opportunities to participate in the development of knowledge and skills, including the review of professional literature, reference material, and handouts.
13. Make use of all of the foundational elements of patient interaction, which includes professionalism, communication/education and general safety during all real and simulated patient interactions.
14. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
15. Recognize issues regarding patient treatment that should be communicated immediately with the supervising physical therapist.
16. Document patient treatment in subjective, objective, assessment, plan (SOAP) format with increased accuracy and efficiency.
17. Describe a suitable health and wellness program that effectively promotes healthy lifestyle for specialized community populations that includes screening, education, intervention and consultation.

Course Outcome(s):

H. Design therapeutic exercise interventions and principles considering pharmacological interventions, to enhance patient outcomes.

Objective(s):

1. Analyze the interactions between therapeutic exercise and pharmacological agents such as disease-modifying antirheumatics, glucocorticoids, non-opioids, and opioids in managing musculoskeletal conditions
2. Evaluate the impact of medications on exercise tolerance, adherence, and safety during therapeutic interventions and when to communicate to a physical therapist.
3. Synthesize evidence-based exercise protocols that account for medication-related considerations, individual patient needs, and potential contraindications

---

Methods of Evaluation:

1. Written examinations
2. Practical laboratory examination
3. Class participation
4. Documentation assignments
5. Homework assignments

6. Skill checks
7. Participation in the Preventative Care Center (PCC)

Course Content Outline:

1. Goals of therapeutic exercise
    a. Remediate or prevent impairments
    b. Improve, restore or enhance physical function
    c. Prevent or reduce health-related risk factors
2. Muscle grades
    a. Differentiate score scales
    b. Isokinetic testing
    c. Modifications of manual muscle testing
3. Motor learning
    a. Stages of motor learning
    b. Stages of motor control
4. Breathing exercises
    a. Increase aerobic capacity
    b. Respiratory changes with exercise
    c. Dyspnea
    d. Valsalva maneuver
5. Balance
    a. Coordination
    b. Agility training
    c. Balance testing
6. Resistive exercise progressions
    a. Isokinetics
    b. Manual resistive
    c. Isometric
    d. Isotonic
        i. Concentric
        ii. Eccentric
    e. Open chain
    f. Closed chain
7. Soft tissue injuries
    a. Stages of soft tissue repair
    b. Management in each stage of soft tissue repair
    c. Chronic inflammation
8. Stretching
    a. Passive
    b. Active
    c. Mechanical
9. Shoulder girdle
    a. Adhesive capsulitis
    b. Rotator cuff injury
    c. Thoracic outlet syndrome
10. Elbow, wrist, and hand
    a. Carpal tunnel syndrome
    b. Complex regional pain syndrome (CRPS)
    c. Lateral epicondylitis
11. Hip
    a. Total hip arthroplasty
    b. Fractures
12. Knee
    a. Articular cartilage defects
    b. Total knee arthroplasty
    c. Patellar femoral dysfunction
    d. Ligamentous injuries
13. Ankle/foot

   a. Hypomobility
   b. Total ankle arthroplasty
   c. Sprains
   d. Plantar fasciitis
14. Cardiac rehabilitation
   a. Stages
   b. Modification of exercise program
   c. Maximum heart rate
15. Spine management
   a. Intervertebral disc pathologies
   b. Pathology of facet joints
   c. Fractures
   d. Soft tissue strains, tears and contusions
   e. Extension bias
   f. Flexion bias
16. Lumbar/sacral/pelvis
17. Pre/postpartum exercise and obstetrics (OB)
   a. Diastasis recti
   b. Posture related back pain
   c. Pelvic girdle pain
   d. Joint laxity
   e. Pelvic floor disorders
18. Aquatic exercise
   a. Precautions and contraindications
   b. Special equipment
19. Promotion of health, wellness, and fitness
   a. Karvonen formula
   b. Target heart rate
20. Pharmacology of the musculoskeletal system
   a. Integrating pharmacology knowledge into physical therapy practice
   b. Anti-inflammatory drugs, muscle relaxants, and disease-modifying agents
   c. Monitoring and managing side effects and drug interactions during therapy sessions
   d. Adapting physical therapy interventions based on pharmacological considerations
21. Professional behavior
   a. Communication with physical therapist
   b. Monitoring response
   c. Documentation
   d. Diversity
   e. Equipment maintenance
22. Billing for therapeutic exercise

Resources

Dutton, Mark. *Orthopaedics for the Physical Therapist Assistant*. 2nd ed. Sudbury: Jones & Bartlett Learning, 2019.

Kisner, Carolyn, et al. *Therapeutic Exercise: Foundations and Techniques*. 8th ed. F. A. Davis, 2022.

O'Sullivan, Susan, et al. *Physical Rehabilitation*. 7th ed. F.A. Davis, 2019.

Brody & Hall. *Therapeutic Exercise: Moving Toward Function*. 4th ed. Baltimore:Lippincott Williams & Wilkins, 2018.

Best, Janie T., et al. *Pathophysiology, Physical Assessment, and Pharmacology: Advanced Integrative Clinical Concepts*. F.A. Davis, 2021.

Top of page
Key: 3826