

PTAT-1312: FUNDAMENTALS OF PHYSICAL THERAPY

Cuyahoga Community College

Viewing: PTAT-1312 : Fundamentals of Physical Therapy

Board of Trustees:

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Academic Term:

Fall 2024

Subject Code

PTAT - Physical Therapist Assist

Course Number:

1312

Title:

Fundamentals of Physical Therapy

Catalog Description:

Introduces the fundamental procedures and theories for practice of physical therapy. Identify the key elements of posture, movement, body mechanics, lifting and moving patients. Introduces the theories and applications regarding gait, assistive devices, and bandaging. Identify wheelchair features, maintenance and mobility. Introduce professional behaviors and the therapeutic relationship.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

HTEC-1000 Introduction to Patient Care, and concurrent enrollment in PTAT-1300 Functional Anatomy, and departmental approval: admission to program.

Outcomes

Course Outcome(s):

A. Apply and adapt biomechanical principles to the movement and handling of patients and equipment.

Objective(s):

1. Define the terms body mechanics, line of gravity, center of gravity, and base of support.
2. Relate these terms to body mechanics, posture, balance, and movement.
3. Identify and apply principles of physics to body mechanics, including levers, friction and torque.
4. Describe the proper body mechanics to be used for lifting, reaching, pushing, pulling, and carrying objects and explain the precautions to be taken for each of these activities.
5. Provide basic information to educate a person to care for his/her back.
6. Identify the elements of good posture.

Course Outcome(s):

B. Apply knowledge of posture and body mechanics to educate the community, patients, families and other health care professionals on posture and safe care of the back.

Objective(s):

1. Identify the benefits of good posture and body mechanics and instruct another person in proper posture and body mechanics.
2. Instruct other health care professionals, patients, and families the principles and benefits of good body mechanics and safe care of the back.
3. Utilize problem solving skills to formulate a plan for addressing the various postural deviations regarding posture, body mechanics, and lifestyle.
4. Demonstrate measurement of leg length and discuss the impact that leg length discrepancy can have on posture and the biomechanics of the joints.
5. Demonstrate the elements of good posture in standing, sitting, and lying.
6. Demonstrate the use of plumb line from the posterior, anterior, and lateral view to assess proper posture. Discuss the use of posture grids and other devices to determine postural deviations.
7. Define the various postural deviations.
8. Describe the potential impact postural deviations can have on the various body systems.
9. Demonstrate the proper body mechanics to be used for lifting, reaching, pushing, pulling, and carrying objects and explain the precautions to be taken for each of these activities.

Course Outcome(s):

C. Plan and utilize proper and safe techniques for the mobility and transfer of patients.

Objective(s):

1. Identify and perform the appropriate transfer based on the patient's diagnosis, functional limitations and goals as identified in the physical therapist evaluation.
2. Identify conditions that require special precautions and considerations during transfers.
3. Identify the principles of safe patient transfers.
4. Identify the organization and preparation that needs to occur prior to the actual transfer of the patient.
5. Demonstrate safety, competency, and good body mechanics in instructing and performing various transfer techniques, including lateral transfer, sliding board transfer, mechanical lift transfer, two and three person lift, and stand pivot transfer.
6. Demonstrate transfers from different surfaces and levels, including chairs, wheelchairs, bed, mat, plinth, toilet and tub.
7. Instruct patient, family members, and other health care professionals in proper, safe transfer techniques.
8. Identify when assistance is required for a transfer and make arrangements to obtain this assistance prior to transfer. Instruct all persons assisting in the transfer or lift of their role, including the role, of the patient.

Course Outcome(s):

D. Formulate a plan for dynamic seating environment that allows patients to achieve stability, controlled mobility and skill in daily functions.

Objective(s):

1. Identify the various components of the wheelchair and discuss the function of each.
2. Demonstrate competency in handling of wheelchair components and make adjustments and minor repairs to the wheelchair.
3. Compare various types of wheelchairs and the features, advantages, and disadvantages of each.
4. Demonstrate and instruct a person in various functional activities, such as propelling a wheelchair over various surface textures and levels, including stairs, curbs, ramps, through doorways, and into and out of elevators.
5. Identify the architectural and other barriers the wheelchair user may encounter while performing activities of daily living.
6. Identify the needs and resources regarding the process of selecting an appropriate wheelchair including the cushion.
7. List the standard measurements for an adult wheelchair.
8. Demonstrate proper measurement of a person for a wheelchair and manually confirm the proper fit.

Course Outcome(s):

E. Utilize gait analysis and gait training to provide the patient with the correct amount of assistance so that patient can achieve the greatest upright mobility with least amount of risk of injury.

Essential Learning Outcome Mapping:

Oral Communication: Demonstrate effective verbal and nonverbal communication for an intended audience that is clear, organized, and delivered effectively following the standard conventions of that language.

Objective(s):

1. Outline the components of the gait cycle and the physical requirements needed for gait.
2. Identify the various types of assistive devices for ambulation and the advantages and disadvantages of each.
3. Identify information in the physical therapist evaluation that are factors for the determination of the type of assistive device the patient should utilize.
4. Discuss how patient cognition, balance, coordination, and weight-bearing status impact the selection of the appropriate device and gait pattern.
5. Identify the guidelines and various methods for the measurement and fit of various assistive devices.
6. Demonstrate proper measurement and adjustment of these devices.
7. Outline and perform the various gait patterns, including two point, four point, three point, and swing gait patterns.
8. Demonstrate and instruct in the use of assistive devices and various gait patterns on level surfaces, stairs, ramps, and through doorways.
9. Demonstrate proper guarding technique of the patient using an assistive device on level surfaces and stairs.
10. Instruct family members, caregivers, and other health professionals in proper guarding technique.
11. Explain the safety precautions for the use of any assistive device.
12. Instruct patients in the safe performance of functional activities appropriate for their conditions using an assistive device.
13. Identify when patient progress indicates the need for advancement of gait pattern or device after consultation with supervising physical therapist.

Course Outcome(s):

- F. Utilize and create appropriate bandage techniques and materials to meet the demands of the patient's needs.

Objective(s):

1. Define bandage in terms of composition and purpose; differentiate between a bandage and a dressing.
2. Identify the types of materials used for bandaging and the features of each.
3. Define kinetic bandaging; list the turns used in bandaging and how they relate to body configurations.
4. List the various uses of bandages.
5. List the essentials of a good bandage.
6. Identify the objective and subjective signs and symptoms that a bandage is applied incorrectly.
7. Delineate the general rules for application and removal of bandages.
8. Differentiate between various types of bandages and binders and discuss the purpose and care of each.
9. Demonstrate knowledge, competency, and safety in performing bandaging turns based on body configuration and goal of bandage.
10. Perform specific bandaging technique based on patient pathology and goal of bandage, including dorsiflex assist, ankle sprain, and residual limb.

Course Outcome(s):

- G. Establish a therapeutic alliance in all patient-clinician interactions.

Objective(s):

1. Identify desired response to treatment and monitor patient for demonstration of signs and symptoms of negative or unwanted response.
2. Participate in the development of knowledge and skills, including participation in the Preventative Care Center.
3. Demonstrate the development of professional behaviors at the beginning level in the classroom, laboratory and Preventative Care Center.
4. Properly prepare and clean equipment and treatment area before and after treatment.
5. Demonstrate proper hand washing and the use of Standard Precautions as identified in Occupational Safety and Health Administration (OSHA) guidelines.
6. Adjust interventions within the plan of care in response to patient clinical indications and consult with supervising physical therapist.
7. Demonstrate legal, ethical and professional conduct in all course activities including participation in the Preventative Care Center.
8. Discuss the elements of a clinical Subjective, Objective, Assessment, and Plan (SOAP) note and demonstrate beginning ability to write an appropriate note to document treatment procedures.
9. Utilize the visual analog and the numerical rating system pain scales that are commonly used for rating patient pain during course activities including the Preventative Care Center.
10. Identify other valid and reliable assessment tools for pain.

11. Demonstrate the foundational elements of patient interaction, which includes professionalism, communication/education, and general safety during all real and simulated patient interactions.
 12. Examine Occupational Safety and Health Administration (OSHA) standard precautions video and blood borne pathogens and sign verification of training form.
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Methods of Evaluation:

1. Written tests, midterm and final examinations
2. Announced and unannounced quizzes
3. Laboratory practical examinations
4. Completion of laboratory skill sheets and skill checks
5. Demonstration of professional and ethical behavior
6. Supplemental web site assignments and discussion board
7. Participation in Preventative Care Centers

Course Content Outline:

1. Planes, axes, directional terminology
 - a. Anatomical position
 - b. Fundamental position
2. Biomechanical Aspects of Human Movement
 - a. Gravity
 - b. Friction
 - c. Torque
 - d. Levers
3. Body Mechanics
 - a. Center of mass
 - b. Base of support
 - c. Line of gravity
4. Posture
 - a. Plumb line
 - b. Normal spinal curvature
 - c. Lordosis, kyphosis and scoliosis
 - d. Leg length
 - e. Genu valgum and genu varum
 - f. Torsion
5. Lifting and Moving Patients
 - a. Controlled mobility
 - b. Pushing, pulling and reaching
 - c. Guidelines for lifting
 - d. Bed mobility
6. Transfers
 - a. Dependent patients
 - b. Lateral and horizontal transfers
 - c. Sit to stand and pivot transfers
 - d. Mechanical lift
7. Wheelchair Mobility
 - a. Propulsion
 - b. Functional activities
 - c. Even and uneven surfaces
8. Selecting a Wheelchair
 - a. Types of wheelchairs
 - b. Options and features
 - c. Measuring for proper fit
 - d. Cushion selection
9. Standing Locomotion
 - a. Gait cycle
 - b. Physical requirements for gait

- c. Gait patterns
- d. Weight bearing restrictions
- 10. Ambulation activities
 - a. Sit to stand and turning procedures
 - b. Guarding the patient
 - c. Safety and environmental factors
 - d. Level surfaces and stairs
- 11. Assistive Gait Devices
 - a. Patient factors for determination of device
 - b. Types of devices
 - c. Measurement and fit
- 12. Kinetic Bandaging
 - a. Body configurations and turns
 - b. Types of bandages
 - c. Bandaging essentials
- 13. Patient-Clinician Interaction
 - a. Professional behaviors
 - b. Diversity
 - c. Documentation
 - d. Equipment maintenance
 - e. Monitoring patient response
 - f. Participation in Preventive Care Center
 - g. Review Occupational Safety and Health Administration (OSHA) guidelines for blood borne pathogens

Resources

Johanson, C. and Chinworth S. *Mobility in Context: Principles of Patient Care Skills*. 3rd ed. Philadelphia: F.A. Davis Co., 2022.

O'Sullivan, S., Schmitz, T., Fulk, G. *Physical Rehabilitation*. 7th. FA Davis, 2019.

Pierson, F., Kuchler, R., Washington, R. *Principles and Techniques of Patient Care*. 7th . Philadelphia: W B. Saunders, 2022.

Top of page

Key: 3820