GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

HEALTHCARE SCIENCE

COURSE: 25.525 General Medicine

UNIT: 9.2 Medical Surgical Services-Musculoskeletal Care

Physical Therapy and Orthopedics

INTRODUCTION

Annotation:

In this subunit students will demonstrate understanding of and perform advanced technical skills in musculoskeletal system care, Physical Therapy and Orthopedics. The Unit will include research into diseases, disorders, or trauma to the musculoskeletal system that might cause a need for the services provided in the Physical Therapy and Orthopedic Specialty of Therapeutic Services pathways. The students learn about caring for patients with bone, joint or muscle disorders or injuries & immobilization in an acute care setting. Students will perform a muscle assessment lab and complete a research assignment.

Grade(s):

	9th
	10th
x	11th
x	12th

Time: Three 50 minute class periods

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Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

HS-TGM-10. Students will demonstrate understanding of and perform advanced technical skills in musculoskeletal system care – Physical Therapy and Orthopedics.

a. Describe management of clients with immobilization devices.

b. Set up clients correctly in special devices for promoting mobility and circulation.

c. Demonstrate techniques for applying anti-embolic hose to extremities.

d. Demonstrate the care and use of prosthetic and orthotic devices

HS-TGM-8. Students will understand and utilize terminology related to the human anatomy.

d. Utilize diagnostic, surgical, and procedural terms and abbreviations related to the musculoskeletal system.

HS-TGM-5. Students will understand the importance of and demonstrate data collection as it relates to the goals, objectives, and implementation of the treatment plan according to their scope of practice.

a. Observe, record, and report client behavior.

b. Assist treatment team in observing, reporting, and recording client healthcare needs, strengths, and problems.

c. Follow policies and protocols of the facility.

d. Understand and demonstrate all necessary interventions of the patient treatment plan as it relates to their scope of practice.

e. Examine and demonstrate the importance of client collaboration and acceptance in identifying and implementing appropriate interventions in the treatment plan.

f. Assist in identifying potential educational needs.

GPS Academic Standards:

ELA9RL. The student understands and acquires new vocabulary and uses it correctly in reading and writing.

SAP2. Students will analyze the interdependence of the integumentary, skeletal and muscular systems as these relate to the protection, support and movement of the human body.

National / Local Standards / Industry / ISTE:

UNDERSTANDINGS & GOALS

Enduring Understandings:

The students will understand that caring for patients/clients with musculoskeletal system diseases and disorders may involve the management of various devices. They will further understand how to care for clients with immobilization devices, and the use of special devices for promoting mobility and circulation, as well as evaluate care and use of prosthetic and orthotic devices.

Essential Questions:

- How do I provide care for patients/clients in an acute care setting with musculoskeletal disorders within my scope of practice?
- How do I manage various devices used in caring for clients with musculoskeletal disorders?

Knowledge from this Unit:

Prior Knowledge:

- How to perform ROM exercises
- Importance of immobilizing musculoskeletal injuries
- Recall anatomy and physiology of the musculoskeletal system

Knowledge from this Unit: The student will know:

- Common diseases, disorders, and injuries affecting the musculoskeletal system including osteoarthritis, rheumatoid arthritis, osteoporosis, fractures, and amputations, Total Joint Replacement
- How to use tools in assessment of the musculoskeletal system
- How to provide care for patients with musculoskeletal disorders who are immobilized in casts, traction, and with hip pinnings.

Skills from this Unit:

The student will be able to:

- Demonstrate techniques for assessing muscle strength and document results.

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

_____ Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
__ Unit test
_____ Group project
_x_ Individual project
_x_ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
_x_ Self-check rubrics
_x_ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
_____ Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
_____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
_____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
_x_ Application of skills to real-life situations/scenarios
_____ Post-test

Assessment(s) Title:

Lab: Muscle Strength Assessment

Oral Report on Research and report of diseases, disorders, or trauma to the musculoskeletal

Assessment(s) Description/Directions:

- Lab: Muscle strength Assessment can be assigned with a demonstration lab or multimedia presentation, make copies of the lab for each student.
- May use multimedia attachment from the IPRO 309 project in Latin America for information and directions for Muscle Strength Assessment or create a live lab demonstration. Client may be sitting in chair with care giver supporting arm or supine on bed or stretcher.
- Oral Report Assignment Rubric (copy 1 for each student) Assign and give time to work in class.

Attachments for Assessment(s): Please list.

- Lab: Muscle Strength Assessment
- Oral Report Rubric

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Sequence of Instruction

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

HS-TGM-10. Students will demonstrate understanding of and perform advanced technical skills in musculoskeletal system care – Physical Therapy and Orthopedics.

HS-TGM-8. Students will understand and utilize terminology related to the human anatomy.

HS-TGM-5. Students will understand the importance of and demonstrate data collection as it relates to the goals, objectives, and implementation of the treatment plan according to their scope of practice.

ELA9RL. The student understands and acquires new vocabulary and uses it correctly in reading and writing.

SAP2. Students will analyze the interdependence of the integumentary, skeletal and muscular systems as these relate to the protection, support and movement of the human body.

2. Review Essential Questions.

- How do I provide care for patients/clients in an acute care setting with musculoskeletal disorders within my scope of practice?
- How do I manage various devices used in caring for clients with musculoskeletal disorders?

3. Identify and review the unit vocabulary. (Musculoskeletal system)

Lessons 1-3

4. Assessment Activity. Use Multimedia presentation to review disorders of the Musculoskeletal system and management in an acute care setting. Discuss nursing care of patients with joint replacement, casts, & traction Lecture on Muscle Strength Assessment.

5. Assign Musculoskeletal system disease, disorder, or special devices used to manage patients with musculoskeletal disorders to students for research and Oral Report (allow research time) Allow presenting on day.

6. Have students find pictures of different types of casts, traction-types, prosthesis for amputations, devices, compile pictures into a collage of the devices with their names attached that can be used for reference and review. Sample prosthetics & orthotics list

- custom foot orthoses
- sports knee bracing
- post polio bracing
- spinal and post-op bracing
- scoliosis bracing
- pediatric and adult prosthetic designs
- C-Leg
- graphite composites
- thermoplastics
- ultra flexible trans-femoral anatomical suction sockets
- ultra flexible trans-tibial silicone suction sockets
- energy storing prosthetic feet
- ultra lightweight prostheses
- myoelectric prostheses (above and below elbow)
- customized cosmesis
- cranial molding helmets
- myorthotic WalkAide system
- rheomicroprocessor knee

7. Assign Lab: Muscle Strength Assessment

Attachments for Learning Experiences:

- Lab : Muscle Strength Assessment
- Multimedia Presentation: Manual Muscle Assessment
- Rubric: Oral Presentation of Research Report
- Bingo game on Musculoskeletal System Terms
- List of vocabulary words for Musculoskeletal System

Notes & Reflections:

If goniometers are available, the students can measure ROM while doing the muscle strength lab.

The vocabulary list can be used to quiz students on medical terms. This could also be used as a pretest.

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

1. Lab: Muscle strength Assessment
2. Oral Report Rubric for Research of a Musculoskeletal Disease, Disorder, or Trauma

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

The report on the Musculoskeletal Disease, Disorder, or Trauma can be presented in a number of ways and the students can be allowed choices of how to present the information.

There is a multimedia showing the Manual Muscle Testing, or it can be a live demonstration.

Attachments for Culminating Performance Task: Please list.

1. Lab: Muscle strength Assessment
2. Oral Report Rubric on Research Musculoskeletal Disease, Disorder, or Trauma Rubric

UNIT RESOURCES

Web Resources:

IPRO 309 Orthotics and Prosthetics in Latin America.url

musculoskeletal disorders care of client with fall 2005.url

http://www.iit.edu/~ipro309s08/links.html

Attachment(s): Supplemental files not listed in assessment, learning experiences, and performance task.

Multimedia from the web resources listed above

Materials & Equipment:

- A copy of the labs and report rubric for each student
- Goniometer or angle rulers for muscle strength lab

What 21st Century Technology was used in this unit:

x	Slide Show Software		Graphing Software		Audio File(s)
x	Interactive Whiteboard		Calculator		Graphic Organizer
	Student Response System	x	Desktop Publishing	x	Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		