



## HEALTHCARE SCIENCE

**COURSE:** 25.552 Applications of Therapeutic Services

**UNIT:** 11.1 Muscular System



### INTRODUCTION

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**Annotation:**

In this unit students will learn the functional process of the muscular system and its importance in movement and frame support of the human body as well as discuss the goals of therapy and rehabilitation for injuries/diseases.

**Grade(s):**

X	9 <sup>th</sup>
X	10 <sup>th</sup>
X	11 <sup>th</sup>
X	12 <sup>th</sup>

**Time:** Five 50 minute periods

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**Additional Author(s):**

**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

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## **GPS Focus Standards:**

### **HS-ATS-8:**

**The student will analyze the anatomy, physiology and basic patho-physiology of each of the body's systems and apply knowledge in performance of evaluating, monitoring, and treatment of client(s) and/or simulations.**

- a.** Analyze anatomical structures in relationship to their physiological functions.
- b.** Analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.
- c.** Analyze the interdependence of the body's systems as related to wellness, disease, and disorders.
- d.** Discuss the goals of therapy and care rehabilitation.
- e.** Discuss the etiology of two common diseases in each body system and how to treat and/or prevent them.

## **GPS Academic Standards:**

## **National / Local Standards / Industry / ISTE:**



# UNDERSTANDINGS & GOALS

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## Enduring Understandings:

- Anatomical structures and function of the muscular system
- The etiology, treatment and prevention of at least two common diseases of the muscular system
- The mechanics of movement and body structure
- How the muscular system is interdependent of the skeletal system
- Correct body mechanics
- Proper range of motion

## Essential Questions:

- How does the muscular system affect the body's ability to function?
- List and describe at least three muscular system disorders including etiology, signs, symptoms, and prevention/ treatment if available.

## Knowledge from this Unit:

- Muscular System anatomy and physiology terms.
- How the muscular system functions independently and interdependently with other body systems.
- Examples of some muscular system diseases, including etiology, signs and symptoms and treatment.
- Detailed AIDS study.

## Skills from this Unit:

(If time permits, if not these skills will also be done in Nursing Essentials)

- Body Mechanics
- Range of Motion



## ASSESSMENT(S)

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### Assessment Method Type:

- ☐ Pre-test
- ☒ Objective assessment - multiple-choice, true- false, etc.
  - ☒ Quizzes/Tests
  - ☐ Unit test
- ☐ Group project
- ☐ Individual project
- ☐ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
  - ☐ Self-check rubrics
  - ☐ 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
  - ☐ Application of skills to real-life situations/scenarios
- ☐ Post-test

### Assessment(s) Title:

Muscular System Quiz

### Assessment(s) Description/Directions:

Administer written quiz at end of unit.

### Attachments for Assessment(s):



# LEARNING EXPERIENCES

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## Sequence of Instruction

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

HS-ATS-8: The student will analyze the anatomy, physiology and basic pathophysiology of each of the body's systems and apply knowledge in performance of evaluating, monitoring, and treatment of client(s) and/or simulations.

### 2. Review Essential Questions.

- How does the muscular system affect the body's ability to function?
- List and describe at least three muscular system disorders including etiology, signs, symptoms, and prevention/ treatment if available.

### 3. Identify and review the unit vocabulary.

### 4. Assessment Activity.

Teaching Activities:

- a) Interactive lecture w/ multi-media presentation; give students guided notes, when you get to the terms abduction, adduction, circumduction, etc, have students stand up and practice the movements when you say and describe the name or have them break up into small groups and practice the movements with the names.
- b) Muscular system color plate, an alternative will be to use the interactive websites below for the diagram, or give the students an outline of a the body and have them draw the major muscles of the body on the diagram
- c) Body mechanics rubric
- d) Range of motion rubric
- e) Written assessment

Student activities:

- a) Define key terms
- b) Complete color plate
- c) Interactive lecture notes (guided notes)
- d) Review questions (can be developed from guided notes as well as exam
- e) Review sheets

### **Attachments for Learning Experiences:**

### **Notes & Reflections:**

The use of color plates from anatomy & physiology coloring books are helpful to learn labeling of all the muscles and their attachment.



## **CULMINATING PERFORMANCE TASK** (Optional)

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### **Culminating Unit Performance Task Title:**

- Body Mechanics
- Range of Motion

### **Culminating Unit Performance Task Description/Directions/Differentiated Instruction:**

Students will perform body mechanics and range of motion in small groups

### **Attachments for Culminating Performance Task:**

- Body Mechanics
- Range of Motion



## UNIT RESOURCES

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### Web Resources:

- [http://library.thinkquest.org/2935/Natures\\_Best/Nat\\_Best\\_High\\_Level/Page\\_Shells/Muscular\\_Shell.html](http://library.thinkquest.org/2935/Natures_Best/Nat_Best_High_Level/Page_Shells/Muscular_Shell.html)  
Good website to visit for review of major muscles of body
- <http://www.gwc.maricopa.edu/class/bio201/muscle/mustut.htm> good interactive website for students to learn the names and location of major muscles

### Attachment(s):

### Materials & Equipment:

- Textbook
- Multi-media presentation
- Worksheets
- Color plates
- Review sheet

### What 21st Century Technology was used in this unit:

<input checked="" type="checkbox"/>	Slide Show Software	<input type="checkbox"/>	Graphing Software	<input type="checkbox"/>	Audio File(s)
<input type="checkbox"/>	Interactive Whiteboard	<input type="checkbox"/>	Calculator	<input type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Student Response System	<input type="checkbox"/>	Desktop Publishing	<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Web Design Software	<input type="checkbox"/>	Blog	<input type="checkbox"/>	Video
<input type="checkbox"/>	Animation Software	<input type="checkbox"/>	Wiki	<input type="checkbox"/>	Electronic Game or Puzzle Maker
<input type="checkbox"/>	Email	<input checked="" type="checkbox"/>	Website		