



HEALTHCARE SCIENCE

COURSE: 25.552 Applications of Therapeutic Services

UNIT: 17.1 Lymphatic System



INTRODUCTION

Annotation:

In this unit students will identify basic anatomy and physiology of the lymphatic system and how it relates to other body systems. Students will also discuss the etiology, symptoms, and treatment of common disorders or diseases in the lymphatic system.

Nursing Essentials students will also demonstrate how to prevent the spread of infection especially for those with impaired immune systems.

Grade(s):

<input type="checkbox"/>	9 th
<input checked="" type="checkbox"/>	10 th
<input checked="" type="checkbox"/>	11 th
<input checked="" type="checkbox"/>	12 th

Time:

Five 50 minute periods

Author:

Janice M Tallant

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

GPS Focus Standards:

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.

- a. Analyze anatomical structures in relationship to their physiological functions.
- b. Assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.
- 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:

SAP1: Students will analyze anatomical structures in relationship to their physiological functions.

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.

SAP3: Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

SAP4: Students will analyze the physical, chemical, and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune systems.

National / Local Standards / Industry / ISTE:



UNDERSTANDINGS & GOALS

Enduring Understandings:

- Students will identify the basic anatomy and physiology of the lymphatic and immune system.
- Students will describe the etiology, symptoms, and treatment of some lymphatic system disorders or diseases.
- Students will explain how the lymphatic system relates to other body systems.

Essential Questions:

- Name the main parts of the lymphatic system and include the main parts of the lymphatic vascular system and the kinds of lymphatic tissues.
- List and describe at least three of the lymphatic system disorders a patient might have and identify the symptoms and treatments available for these conditions.
- Explain the four main types of immunity.
- How is the lymphatic system interdependent with other body systems relating to wellness, disease, and disorders?

Knowledge from this Unit:

- Lymphatic and immune system anatomy and physiology terms
- Examples of diseases of lymphatic and immune system
- Detailed AIDS study

Skills from this Unit:



ASSESSMENT(S)

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:

- Combined methods will be used of daily grades (formative) for assignment sheets and quizzes and test grades (summative).
- Self Assessment could be done for the “Immune System Knowledge Rating Chart” and also be done on the “Diagnosing lymphatic & Immune system disorders activity sheet”.
- Constructed response assessments will be done by teacher on quizzes and tests.
- Informal checks will be made while students are completing assignment sheets.

Assessment(s) Description/Directions:

- Daily grades (or participation grades) for knowledge chart and assignment sheet in Lesson 1.
- Daily grade for vocabulary quiz from Lesson 1.

- Test grade for Lesson 1
- Daily grades for Lesson 2 activity sheet and Lesson 3 AIDS sheet
- Daily grade for disorder quiz

Attachments for Assessment(s):

1. Immune System Knowledge Rating Chart This could be used as an Introduction activity for students to think about what they already know about the lymphatic and immune system.
2. Lymphatic and Immune System Information Sheet Information sheet for Lesson 1.
3. Free slide show about the Immune system that you can use: immune system slide show
4. Lymphatic and Immune System Diseases and Disorders Information sheet about disorders for Lesson 2.
5. Diagnosing Lymphatic & Immune system disorders activity sheet This activity sheet for Lesson 2 is designed to be used as a tool for students to review symptoms of lymphatic diseases or disorders and make diagnoses and prescribe treatments for different conditions.



LEARNING EXPERIENCES

Sequence of Instruction

1. **Identify the Standards. Standards should be posted in the classroom for each lesson.**
2. **Review Essential Questions.**
3. **Identify and review the unit vocabulary.**
4. **Assessment Activity.**

Applications of Therapeutic Services Course

- Introduction of unit. Handout copies of "[Immune System Knowledge Rating Chart](#)". Ask students to self assess what they already know about the lymphatic and immune system. Discuss the results of this activity briefly.
- Lesson 1. Handout copies of "[lymphatic and immune system information sheet](#)" and assignment sheet. Ask students to read the information sheet and then complete the assignment sheet. You may use either of the Web based 'free multimedia slide shows about the immune system to help students have a visual picture of this information. I have also attached one of the slide shows. [PowerPoint](#) (Two 50 minute periods)
- Lesson 2. Hand out copies of "[diagnosing lymphatic and immune system disorders activity sheet](#)" and copies of the "[lymphatic and immune system diseases and disorders sheet](#)". Tell students that they are going to have an opportunity to "walk in the shoes" of a physician, nurse practitioner, or physician assistant. The scenarios will give students an opportunity to pinpoint symptoms of the patient, make a diagnosis, and prescribe an appropriate treatment for the condition. (50 minute period)
- Lesson 3. [AIDS Research study](#) via Web page if Internet available. (50 minute period)

- Test and/or quizzes (50 minute period)

Nursing Essentials Course

Students will have a brief review of the lymphatic and immune system as they practice infection control procedures (in other unit plans).

Attachments for Learning Experiences:

Notes & Reflections:

- This unit plan is primarily for applications class but a brief review of the system would be useful for nursing essentials class when studying infection control.
- AIDS study could be an additional activity as students do not hear as much about AIDS now.
- Most of the assignments from this unit plan would not require a textbook since a lot of information is provided in the information sheets.



CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title #1:

Identify the basic anatomy and physiology of lymphatic system and the pathophysiology of some common disorders of lymphatic and immune system.

Culminating Unit Performance Task Description/Directions/Differentiated

After completing the study of lymphatic system, students will take a written knowledge test.

Attachments for Culminating Performance Task

- [Lymph-immune test questions](#) (Written test after Lesson 1 or after Lesson 1 and 2)
- [Lymph-immune vocabulary quiz](#) (written vocabulary quiz and answers which could be given as review before the actual test).

Culminating Unit Performance Task Title #2:

Pathophysiology study of some common disorders of lymphatic and immune system

Culminating Unit Performance Task Description/Directions/Differentiated

After completing the study of lymphatic system disorders and diseases, students will take a written knowledge quiz or test.

Attachments for Culminating Performance Task

- [Lymphatic and Immune System Disorders Quiz](#) (Quiz grade after the disorders activity)



UNIT RESOURCES

Web Resources:

If Internet is available, do further research on AIDS at this suggested web site <http://www.aids.org/info/FAQs.html> and answer assigned questions from this specific web site.

Here are free multimedia slide shows to help explain the immune system that you may use: <http://www.worldofteaching.com/biology/powerpoints.html> Next, scroll down to find the immune system slide shows that you can use. I recommend those by Michael S and Debbie Corral. I have attached the one by Debbie Corral.

Attachment(s):

Materials & Equipment:

What 21st Century Technology was used in this unit:

<input 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		