



HEALTHCARE SCIENCE

COURSE: 25.525 Medical Services General Medicine

UNIT: 5.2 Diagnostic Imaging Services

SUB UNIT: Digestive System



INTRODUCTION

Annotation:

In this unit students will apply knowledge and patient care skills in assisting physicians and patients/clients with gastrointestinal procedures used to perform diagnostic imaging. Students will review previous vocabulary related to general medical terms and the digestive system. As a performance lab, students will identify parts of the digestive system on the anatomy torso. Students will research diseases of the digestive system and make an oral presentation describing the disease and type of diagnostic testing used to diagnose the disease. The role of the Imaging Technician will be emphasized.

Grade(s):

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

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-16. Students will demonstrate understanding of the services provided in diagnostic imaging – Diagnostic Imaging Services (Radiology).

- a. Differentiate between the types of diagnostic imaging techniques, including but not limited to: diagnostic, treatment, and monitoring systems and the types of medical information/records each generates including Computer Assisted Tomography (CAT), Magnetic Resonance Imaging (MRI), Positron Emissions Tomography (PET), Ultrasound Imaging, X-Rays, arrhythmia monitoring, pulmonary monitoring, and Obstetrical/Neonatal monitoring.
- b. Examine the types of medical information/records each generates including but not limited to: Computer Assisted Tomography (CAT), Magnetic Resonance Imaging (MRI), Positron Emissions Tomography (PET), Ultrasound Imaging, X-Rays, arrhythmia monitoring, pulmonary monitoring, and Obstetrical/Neonatal monitoring.
- c. Discuss the impact of technology on diagnostic imaging techniques and treatments such as fiber optics and laser therapy

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

- h. Utilize diagnostic, surgical, and procedural terms and abbreviations related to the gastrointestinal system.

GPS Academic Standards:

Scsh9

c. Building vocabulary knowledge

- Demonstrate an understanding of contextual vocabulary in various subjects.
- Use content vocabulary in writing and speaking.
- Explore understanding of new words found in subject area texts.

National / Local Standards / Industry / ISTE:



UNDERSTANDINGS & GOALS

Enduring Understandings:

Students will understand digestive system imaging including basic anatomy and physiology, common disorders and the role of the Imaging Technologist. Students will also apply knowledge of medical terminology in communicating and understanding the Imaging Technologist's role in preparing clients for digestive system imaging.

Essential Questions:

- What are disorders of the digestive system?
- What are some diagnostic examinations of the digestive tract?
- What is the role of the Imaging Technologist in assisting the physician, client/patient, and other medical team members in performing imaging procedures?

Knowledge from this Unit:

The student will:

- Know the pathway of food through the alimentary canal.
- Discuss Imaging procedures used to diagnose digestive diseases.
- Describe preparatory procedures for imaging the digestive system for each modality (CT, Ultrasound, MRI, Nuclear Medicine, PET, Radiography (BE, GI, GB, Esophagram, Small bowel))

Skills from this Unit:

The student will be able to:

- Identify digestive system radiographic images, describing anatomy in each.



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

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

Assessment(s) Title:

- Disease Report Form
- Digestive System Model Rubric (optional could be extra credit)
- Lab Digestive System Identification
- Digestive System Vocabulary Quiz

Assessment(s) Description/Directions:

- The Disease report will be graded for the oral presentation by the Disease Report Form.
- The Digestive System Identification is an oral lab.

Attachments for Assessment(s):

- Lab Digestive System Identification
- HS-TGM-8 Disease Report Form
- HS-TGM-8 Digestive System Model Rubric

- Vocabulary Test: Digestive System
- Cross word puzzle: Digestive System



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

Lesson One

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

HS-TGM-16. Students will demonstrate understanding of the services provided in diagnostic imaging – Diagnostic Imaging Services (Radiology).

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

2. Review Essential Questions.

- Describe disorders of the digestive system?
- Describe diagnostic examinations of the digestive tract.
- What is the role of the Imaging Technologist in assisting the physician, client/patient, and other medical team members in performing imaging procedures?

3. Identify and review the unit vocabulary.

4. Assessment Activity. Have students identify parts of the digestive system by free hand drawing or on a handout using textbook or overhead projector.

5. Review the Gastrointestinal system structure and function as a group (videos of system are available).

6. If the Classroom has an anatomical torso of the body organs, identify each part of the digestive system. Have the students work with the torso so that they can recall the correct term for each organ.

Lessons Two and Three

Use the Lab: Digestive system Identification as a competency check off.

1. Assign disease report using Disease Report Form. Allow time for each student to research and prepare presentation. Students will present on day 3 of this lesson.
2. Give vocabulary quiz

Attachments for Learning Experiences: Please list.

- Lab Digestive System Identification
- HS-TGM-8 Disease Report Form
- HS-TGM-8 Digestive System Model Rubric

Notes & Reflections:

Make each student a copy of all handouts for the unit. Assign the Disease report and allow time for students to research topic on computer or in media center. The Digestive model rubric may be used for a hands on activity to accompany the Lab for Digestive System Identification.



CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

- Lab Digestive System Identification
- HS-TGM-8 Disease Report Form
- HS Digestive Vocabulary Test/quiz
- HS-TGM-8 Digestive System Model Rubric

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task: Please list.

- Lab Digestive System Identification
- HS-TGM-8 Disease Report Form
- HS-TGM-8 Digestive System Model Rubric
- Digestive Vocabulary Test/quiz



UNIT RESOURCES

Web Resources:

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

Materials & Equipment:

- Anatomy torso
- X-ray view box and radiographs. Radiographs can be made from overheads
- Presentation of power points on white board or digital projector
- Anatomy videos (check with media center)

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 checked="" type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Student Response System	<input type="checkbox"/>	Desktop Publishing	<input checked="" type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Web Design Software	<input type="checkbox"/>	Blog	<input checked="" 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		