Course Syllabus

NOTE: This syllabus is subject to change during the semester . Please check this syllabus on a regular basis for any updates.

Department : RAD TECH

Course Title : INTERMEDIATE RADIOGRAPHIC PROCEDURES

Section Name : RADR 2301

Start Date : 8/27/12

End Date : 12/14/12

Modality : LECTURE (2 Hours)/ LAB (4 Hours)

Credits : 3

Instructor Information

Name : Catherine Laney

OC Email : claney@odessa.edu

OC Phone # : (432) 335-6449

Course Description

A continuation of the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of anatomy. The areas to be presented include the chest, bony thorax, abdomen, spine and routine contrast media procedures, trauma radiography and radiographic foreign body localization. Also includes review of upper and lower extremity radiography, topographic anatomy, and routine diagnostic positioning. Lab fee required.

Prerequisites/Corequisites

PREREQUISITE: RADR 1311 or consent of the departmental chair

COREQUISITES: RADR 1266, RADR 1301 and RADR 2309

Scans

ICO: 1,2,4,5

Course Objectives

End-of-Course Outcomes: Manipulate equipment; perform intermediate level procedures in positioning; align anatomic structures and equipment; and evaluate images. The student will also be able to position to include the thorax, abdomen, spine and routine contrast media procedures and equipment; work in teams; evaluate images for proper demonstration of anatomy and pathology and demonstrate mastery of positioning of the upper and lower extremities.

COURSE COMPETENCIES

1XRA.17.00 UNDERSTAND ORDERS,REQUESTS, AND DIAGNOSTIC REPORTS

1XRA.17.01 *Given radiographic orders, describe the procedures to be performed.

1XRA.17.02 *Given diagnostic reports, break down into a language the patient can understand.

1XRA.17.03 *Given a request for diagnostic imaging consult/services, describe procedures and processes necessary to respond to requested service(s).

1XRA.23.00 SAFELY TRANSFER AND POSITION PATIENTS

1XRA.23.01 *Describe and demonstrate good principles of body mechanics applicable to patient care.

1XRA.23.02 *Demonstrate techniques for various types of patient transfer.

1XRA.23.03 *Describe and demonstrate the procedures for turning patients with various conditions.

1XRA.23.04 *Describe and demonstrate restraint techniques for various types of procedures and patient conditions.

1XRA.23.05 *Describe the aspects of patient comfort and discuss the importance of each to the care and safety of the patient.

1XRA.23.06 *Given specific patient considerations and conditions, outline various aspects of general patient care.

1XRA.23.07 *Explain procedures for assuring security of property of inpatients and outpatients.

1XRA.24.00 EVALUATE THE PATIENTS PHYSICAL NEEDS

1XRA.24.01 *Describe methods for evaluation of patient status.

1XRA.24.02 *Identify the information to be collected prior to patient examination.

1XRA.24.03 *Describe vital signs used to assess patient condition.

1XRA.24.04 *Convert a Fahrenheit measurement to a Celsius.

1XRA.24.05 *State the normal temperature values for the oral and rectal methods of measurement for temperature.

1XRA.24.06 *Describe the method of monitoring respirations and state the normal values expected.

1XRA.24.07 *List the equipment necessary for acquisition of the blood pressure on a patient.

1XRA.24.08 *Identify the normal values for blood pressure for males and females.

1XRA.24.09 *Identify the seven major sites for monitoring the pulse and indicate the normal values.

1XRA.24.10 *Demonstrate the assessment of vital signs.

1XRA.25.00 CONTROL INFECTIONS EMPLOYING UNIVERSAL (STANDARD) PRECAUTIONS

1XRA.25.01 *Define infectious pathogens.

1XRA.25.02 *Define communicable diseases.

1XRA.25.03 *Define nosocomial infections.

1XRA.25.04 *Define Centers for Disease Control and Prevention (CDC).

1XRA.25.05 *Define Human Immunodeficiency Virus (HIV).

1XRA.25.06 *Define Hepatitis B Virus (HBV).

1XRA.25.07 *Describe the utilization of Universal (Standard) Precautions and Isolation Procedures.

1XRA.25.08 *Describe source and modes of transmission of infections and diseases.

1XRA.25.09 *Describe institutional/departmental procedures for infection control through Universal (Standard) Precautions.

1XRA.25.10 *Identify & Discuss psychological considerations for the management of patients utilizing Universal (Standard) Precautions.

1XRA.27.00 DEAL WITH ACUTE PATIENT CARE SITUATIONS

1XRA.27.01 *List the special considerations necessary when performing radiographic procedures on an infant or a child.

1XRA.27.02 *List the special considerations necessary when performing radiographic procedures on a geriatric patient.

1XRA.27.03 *List the symptoms of a patient with a head injury.

1XRA.27.04 *List the precautions to be taken when working with a patient with a head injury.

1XRA.27.05 *List the symptoms of a patient with a spinal injury.

1XRA.27.06 *List the precautions to be taken when working with a patient with a spinal injury.

1XRA.27.07 *List the symptoms of a patient with an upper and/or lower extremity fracture.

1XRA.27.08 *List the precautions to be taken when working with a patient with an upper and/or lower extremity fracture.

1XRA.27.09 *List the symptoms of a patient with massive wounds.

1XRA.27.10 *List the precautions to be taken when working with a patient with massive wounds.

1XRA.27.11 *List the symptoms of a patient with burns.

1XRA.27.12 *List the precautions to be taken when working with a patient with burns.

1XRA.27.13 *List the signs and symptoms of a patient having a reaction to contrast media.

1XRA.27.14 *Describe the medical intervention for a patient having a reaction to contrast media.

1XRA.28.00 CARE FOR PATIENTS HAVING BARIUM STUDIES

1XRA.28.01 *Explain the role of the technologist in patient education.

1XRA.28.02 *Describe the different types of patient preparation for a barium studies.

1XRA.28.03 *Describe the procedure to properly prepare a patient for a barium study.

1XRA.28.04 *Describe the purpose for using contrast agents.

1XRA.28.05 *Differentiate between positive and negative contrast agents.

1XRA.28.06 *Describe the purpose of performing an upper and lower gastrointestinal study.

1XRA.28.07 *Describe the post-examination care required for patients who have undergone an upper or lower gastrointestinal study.

1XRA.29.00 CARE FOR PATIENTS WITH TUBES

1XRA.29.01 *Given specific tube management situations, explain the indication and procedure.

1XRA.29.02 *Given specific tube management situations, identify the precautions involved.

1XRA.29.03 *Identify the steps in the operation and maintenance of suction equipment.

1XRA.30.00 CARE FOR PATIENTS DURING SPECIAL PROCEDURES

1XRA.30.04 *Identify the patient education, patient care, drug administration and special precautions for a patient undergoing Urography.

1XRA.30.07 *Outline patient care in regards to adverse reactions to contrast media and other medical conditions.

1XRA.31.00 CARE FOR PATIENTS DURING BEDSIDE RADIOGRAPHY

1XRA.31.01 *Demonstrate the appropriate procedure for gathering information prior to preforming a bedside radiographic examination.

1XRA.31.02 *List three situations in which bedside radiography may be preferable to examination in the radiology department.

1XRA.31.03 *List four important factors to be noted during initial survey prior to radiography in the intensive care unit.

1XRA.31.04 *Describe the initial steps in performing a bedside radiograph.

1XRA.31.05 *Describe the special precautions to be used when performing a radiograph on a premature infant.

1XRA.31.06 *Explain the procedures for placing a cassette under a patient in an orthopedic bed frame.

1XRA.31.07 *Describe the special problems faced in performing radiographs on patient with tracheostomy.

1XRA.31.08 *Describe the special problems faced in performing radiographs on patient with nasogastric tubes.

1XRA.31.09 *Describe the special problems faced in performing radiographs on patient with chest drainage tubes.

1XRA.31.10 *Describe the special problems faced in performing radiographs on patient with Swanz-Ganz catheters.

1XRA.31.11 *Describe the procedure for taking radiographs in the surgical suite.

1XRA.31.12 *Plan the appropriate radiation protection required when doing bedside/surgical radiography.

1XRA.32.00 EDUCATE PATIENTS

1XRA.32.01 *Define communication

1XRA.32.02 *Identify methods of communication and discuss how each can be utilized in patient education.

1XRA.32.03 *Identify methods of communication problems and discuss how each can be overcome to provide patient education.

1XRA.32.04 *Given clinical simulations, demonstrate explanations of radiographic examinations.

1XRA.32.05 *Given clinical simulations, demonstrate explanations for patients with various communication problems.

1XRA.32.06 *Create radiation safety and protection questions patients might ask in connection with radiologic examinations and the radiographer's response to each.

1XRA.32.07 *Given specific patient conditions and profiles, appraise the moods, expectations, and perceptions of the technologist-patient relationship.

1XRA.35.00 IDENTIFY ANATOMICAL NOMENCLATURE AND BODY CAVITIES (TO INCLUDE CONTENTS)

1XRA.35.01 *Given frontal and lateral diagrams of the human body, label components to identify terms of direction.

1XRA.35.02 *Given frontal and lateral diagrams of the human body, draw and label various body planes.

1XRA.35.03 *Describe each of the body cavities in terms of structural limits, function and contents.

1XRA.40.00 KNOW/DISCUSS/DEMONSTRATE THE STRUCTURE AND FUNCTION OF THE SKELETAL SYSTEM

1XRA.40.01 *Given radiographs, diagrams and skeletal parts, identify and locate the bones of the axial skeleton.

1XRA.40.02 *Describe processes and depressions found on the bones of the axial skeleton.

1XRA.40.03 *Describe articulations of the axial skeleton.

1XRA.40.04 *Describe articulations of the appendicular skeleton.

1XRA.40.05 *Given radiographs, diagrams and skeleton, locate and identify structures of the skull.

1XRA.40.12 *Given diagrams, locate and label the different types of articulations.

1XRA.40.13 *Distinguish between each type of articulation, including a definition of the type, a comparison with other types, and locations and movement(s) permitted.

1XRA.45.00 KNOW/DISCUSS/DEMONSTRATE THE STRUCTURE AND FUNCTION OF THE DIGESTIVE SYSTEM

1XRA.45.01 *Describe the hard and soft palates.

1XRA.45.02 *Identify deciduous and permanent teeth in terms of age for eruption and number.

1XRA.45.03 *Distinguish between types of teeth in terms of number, location within the jaws, and function.

1XRA.45.04 *Given cross-sectional diagrams of teeth, label the component parts.

1XRA.45.05 *Identify the structure and function of the tongue.

1XRA.45.06 *Describe the salivary glands in terms of structure, function and location.

1XRA.45.07 *List the primary organs of the digestive system.

1XRA.45.08 *Given diagrams and radiographs of primary organs comprising the digestive system, label the parts.

1XRA.45.09 *Describe the layers of tissue that comprise the esophagus, stomach, small intestine, large intestine and rectum.

1XRA.45.10 *Explain the functions of each primary organ of the digestive system.

1XRA.45.11 *Differentiate between peritoneum, omentum, and mesentery.

1XRA.45.12 *List the accessory organs of the digestive system.

1XRA.45.13 *Given diagrams and radiographs of accessory organs of the digestive system, label the parts.

1XRA.45.14 *List the secretions of accessory organs of the digestive system and state the function of each.

1XRA.45.15 *List and discuss the functions of the accessory organs of the digestive system.

1XRA.45.16 *Describe the purpose of digestion.

1XRA.45.17 *Discuss types of digestive changes that occur in the body.

1XRA.45.18 *Describe the process of absorption.

1XRA.48.00 KNOW/DISCUSS/DEMONSTRATE THE STRUCTURE AND FUNCTION OF THE RESPIRATORY SYSTEM

1XRA.48.01 *Given diagrams and radiographs of components of the respiratory system, label the parts.

1XRA.48.02 *Describe the mechanics of respiration.

1XRA.48.03 *Explain pulmonary ventilation.

1XRA.48.04 *Outline the steps of alveolar exchange.

1XRA.48.05 *Describe the transport of blood gases.

1XRA.48.06 *Explain tissue gas exchange.

1XRA.48.07 *Describe how respiration is regulated.

1XRA.49.00 KNOW/DISCUSS/DEMONSTRATE THE STRUCTURE AND FUNCTION OF THE URINARY SYSTEM

1XRA.49.01 *Given diagrams and radiographs, label the parts of the kidneys, ureters, bladder, and urethra.

1XRA.49.02 *Explain the function of each organ of the urinary system.

1XRA.49.03 *Describe the composition of urine.

1XRA.49.04 *Explain how urine is formed.

1XRA.49.05 *Explain micturition.

1XRA.51.00 IDENTIFY/EMPLOY TOPOGRAPHY WHEN PERFORMING RADIOGRAPHIC EXAMINATIONS

1XRA.51.02 *Given a phantom, identify topographical landmarks for the neck.

1XRA.51.03 *Given a phantom, identify topographical landmarks for the spine.

1XRA.51.04 *Given a phantom, identify topographical landmarks for the thorax.

1XRA.51.05 *Given a phantom, identify topographical landmarks for the abdomen.

1XRA.53.00 EMPLOY STANDARD TERMINOLOGY, POSITIONING AIDS AND ACCESSORY EQUIPMENT TO PRODUCE RADIOGRAPHS

1XRA.53.01 *Describe standard positioning terms.

1XRA.53.02 *Describe positioning aids used in radiology.

1XRA.53.03 *Describe accessory equipment and discuss each in terms of appropriate usage.

1XRA.54.00 DEMONSTRATE/DISCUSS GENERAL RADIOGRAPHIC PROCEDURAL CONSIDERATIONS

1XRA.54.01 *List and discuss general procedural considerations for radiographic examinations.

1XRA.54.02 *Given simulated clinical situations, explain the specific considerations that would be involved.

1XRA.54.03 *Through role-playing, demonstrate the ability to use the appropriate general considerations in various radiographic procedures with various patient types.

1XRA.55.00 DISCUSS POSITIONING CONSIDERATIONS FOR ROUTINE RADIOGRAPHIC PROCEDURES

1XRA.55.19 *Describe the process for routine and special views for the cervical spine.

1XRA.55.20 *Describe the process for routine and special views for the thoracic spine.

1XRA.55.21 *Describe the process for routine and special views for the lumbar spine.

1XRA.55.22 *Describe the process for routine and special views for the sacrum and coccyx.

1XRA.55.23 *Describe the process for routine and special views for the sacroiliac articulations.

1XRA.55.24 *Describe the process for routine and special views for the ribs.

1XRA.55.25 *Describe the process for routine and special views for the sternum.

1XRA.55.39 *Describe the process for routine and special views for the respiratory system.

1XRA.55.40 *Describe the process for routine and special views for intravenous pyelography.

1XRA.55.41 *Describe the process for routine and special views for retrograde pyelography.

1XRA.55.42 *Describe the process for routine and special views for retrograde cystography.

1XRA.55.43 *Describe the process for routine and special views for voiding cystourethrography.

1XRA.55.44 *Describe the process for routine and special views for the esophagus.

1XRA.55.45 *Describe the process for routine and special views for the upper G.I.

1XRA.55.46 *Describe the process for routine and special views for the small bowel series.

1XRA.55.47 *Describe the process for routine and special views for the barium enema.

1XRA.55.48 *Describe the process for routine and special views for oral cholecystography.

1XRA.55.49 *Describe the process for routine and special views for T-tube cholangiography.

1XRA.55.50 *Describe the process for routine and special views for operative cholangiography.

1XRA.55.55 *Given the names of various procedures, explain what structures and/or functions are demonstrated.

1XRA.55.56 In a laboratory setting, simulate the radiographic procedure on a person or full body phantom.

1XRA.55.61 Given radiographs of the spine, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.55.62 Given radiographs of the bony thorax, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.55.63 Given radiographs of the skull/facial bones, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.55.64 Given radiographs of the respiratory system, evaluate in terms of: positioning,centering, and overall image quality.

1XRA.55.65 Given radiographs of the digestive system, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.55.67 *Given radiographs, identify relevant anatomy.

1XRA.56.00 PRODUCE RADIOGRAPHS

1XRA.56.19 *Produce radiographs of the cervical spine (with appropriate supervision).

1XRA.56.20 *Produce radiographs of the thoracic spine (with appropriate supervision).

1XRA.56.21 *Produce radiographs of the lumbar spine (with appropriate supervision).

1XRA.56.22 *Produce radiographs of the sacrum and coccyx (with appropriate supervision).

1XRA.56.23 *Produce radiographs of the sacroiliac articulations (with appropriate supervision).

1XRA.56.24 *Produce radiographs of the ribs (with appropriate supervision).

1XRA.56.25 *Produce radiographs of the sternum (with appropriate supervision).

1XRA.56.39 *Produce radiographs of the respiratory system (with appropriate supervision).

1XRA.56.40 *Produce radiographs for intravenous pyelography (with appropriate supervision).

1XRA.56.41 *Produce radiographs for retrograde pyelography (with appropriate supervision).

1XRA.56.42 *Produce radiographs for retrograde cystography (with appropriate supervision).

1XRA.56.43 *Produce radiographs for voiding cystourethrography (with appropriate supervision).

1XRA.56.44 *Produce radiographs of the esophagus (with appropriate supervision).

1XRA.56.45 *Produce radiographs of the upper G.I. (with appropriate supervision).

1XRA.56.46 *Produce radiographs of the small bowel series (with appropriate supervision).

1XRA.56.47 *Produce radiographs of the barium enema (with appropriate supervision).

1XRA.56.48 *Produce radiographs for oral cholecystography (with appropriate supervision).

1XRA.56.49 *Produce radiographs for T-tube cholangiography (with appropriate supervision).

1XRA.56.50 *Produce radiographs for operative cholangiography (with appropriate supervision).

1XRA.56.51 *Produce radiographs for endoscopic retrograde cholangiographic pancreatography (ERCP) (with appropriate supervision).

1XRA.56.52 Produce radiographs of the reproductive system (with appropriate supervision).

1XRA.57.00 DISCUSS/DEMONSTRATE POSITIONING CONSIDERATIONS FOR ROUTINE CONTRAST STUDIES

1XRA.57.01 *Select equipment and supplies necessary for radiographs of the esophagus.

1XRA.57.02 **Select equipment and supplies necessary for radiographs of the upper G.I.

1XRA.57.03 *Select equipment and supplies necessary for radiographs of the small bowel series.

1XRA.57.04 *Select equipment and supplies necessary for radiographs of the barium enema.

1XRA.57.05 *Select equipment and supplies necessary for radiographs for oral cholangiography.

1XRA.57.06 *Select equipment and supplies necessary for radiographs for T-tube cholangiography.

1XRA.57.07 *Select equipment and supplies necessary for radiographs for operative cholangiography.

1XRA.57.08 *Select equipment and supplies necessary for radiographs for endoscopic retrograde cholangiographic pancreatography (ERCP).

1XRA.57.09 *Select equipment and supplies necessary for radiographs for intravenous pyelography.

1XRA.57.10 *Select equipment and supplies necessary for radiographs for retrograde pyelography.

1XRA.57.11 *Select equipment and supplies necessary for radiographs for retrograde cystography.

1XRA.57.12 *Select equipment and supplies necessary for radiographs for voiding cystourethrography.

1XRA.57.13 *Describe the patient preparation necessary for radiographs of the esophagus.

1XRA.57.14 *Describe the patient preparation necessary for radiographs of the upper G.I.

1XRA.57.15 *Describe the patient preparation necessary for radiographs of the small bowel series.

1XRA.57.16 *Describe the patient preparation necessary for radiographs of the barium enema.

1XRA.57.17 *Describe the patient preparation necessary for radiographs for oral cholecystography.

1XRA.57.18 *Describe the patient preparation necessary for radiographs for T-tube cholangiography.

1XRA.57.19 *Describe the patient preparation necessary for radiographs for operative cholangiography.

1XRA.57.20 *Describe the patient preparation necessary for radiographs of the endoscopic retrograde cholangiographic pancreatography (ERCP).

1XRA.57.21 *Describe the patient preparation necessary for radiographs for intravenous pyelography.

1XRA.57.22 *Describe the patient preparation necessary for radiographs for retrograde pyelography.

1XRA.57.23 *Describe the patient preparation necessary for radiographs for retrograde cystography.

1XRA.57.24 *Describe the patient preparation necessary for radiographs for voiding cystourethrography.

1XRA.57.25 *Describe the general procedure for radiographs of the esophagus.

1XRA.57.26 *Describe the general procedure for radiographs of the upper G.I.

1XRA.57.27 *Describe the general procedure for radiographs of the small bowel series.

1XRA.57.28 *Describe the general procedure for radiographs of the barium enema.

1XRA.57.29 *Describe the general procedure for radiographs for oral cholecystography.

1XRA.57.30 *Describe the general procedure for radiographs for T-tube cholangiography.

1XRA.57.31 *Describe the general procedure for radiographs for operative cholangiography.

1XRA.57.32 *Describe the general procedure for radiographs of the endoscopic retrograde cholangiographic pancreatography (ERCP).

1XRA.57.33 *Describe the general procedure for radiographs for intravenous pyelography.

1XRA.57.34 *Describe the general procedure for radiographs for retrograde pyelography.

1XRA.57.35 *Describe the general procedure for radiographs for retrograde cystography.

1XRA.57.36 *Describe the general procedure for radiographs for voiding cystourethrography.

1XRA.57.37 *Describe the process for routine and special views of the esophagus.

1XRA.57.38 *Describe the process for routine and special views of the upper G.I.

1XRA.57.39 *Describe the process for routine and special views of the small bowel series.

1XRA.57.40 *Describe the process for routine and special views of the barium enema.

1XRA.57.41 *Describe the process for routine and special views for oral cholecystography.

1XRA.57.42 *Describe the process for routine and special views for T-tube cholangiography.

1XRA.57.43 *Describe the process for routine and special views for operative cholangiography.

1XRA.57.44 *Describe the process for routine and special views for endoscopic retrograde cholangiographic pancreatography (ERCP).

1XRA.57.45 *Describe the process for routine and special views for intravenous pyelography.

1XRA.57.46 *Describe the process for routine and special views for retrograde pyelography.

1XRA.57.47 *Describe the process for routine and special views for retrograde cystography.

1XRA.57.48 *Describe the process for routine and special views for voiding cystourethrography.

1XRA.57.49 *Given the names of various contrast studies, identify the contrast media typically used, the usual dosage and route of administration.

1XRA.57.50 In a laboratory setting, simulate the radiographic procedure on a person or full body phantom.

1XRA.57.51 *Given radiographs of the esophagus, explain what structures and/or functions are demonstrated.

1XRA.57.52 *Given radiographs of the upper G.I., explain what structures and/or functions are demonstrated.

1XRA.57.53 *Given radiographs of the small bowel series, explain what structures and/or functions are demonstrated.

1XRA.57.54 *Given radiographs of the barium enema, explain what structures and/or functions are demonstrated.

1XRA.57.55 *Given radiographs for oral cholecystography, explain what structures and/or functions are demonstrated.

1XRA.57.56 *Given radiographs for T-tube cholangiography, explain what structures and/or functions are demonstrated.

1XRA.57.57 *Given radiographs for operative cholangiography, explain what structures and/or functions are demonstrated.

1XRA.57.58 *Given radiographs of the endoscopic retrograde cholangiographic pancreatography (ERCP), explain what structures and/or functions are demonstrated.

1XRA.57.59 *Given radiographs from intravenous pyelography, explain what structures and/or functions are demonstrated.

1XRA.57.60 *Given radiographs from retrograde pyelography, explain what structures and/or functions are demonstrated.

1XRA.57.61 *Given radiographs from retrograde cystography, explain what structures and/or functions are demonstrated.

1XRA.57.62 *Given radiographs from voiding cystourethrography, explain what structures and/or functions are demonstrated.

1XRA.57.63 Given radiographs from esophagus, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.64 Given radiographs of the upper G.I., evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.65 Given radiographs of the small bowel series, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.66 Given radiographs of the barium enema, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.67 Given radiographs from oral cholecystography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.68 Given radiographs from T-tube cholangiography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.69 Given radiographs from operative cholangiography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.70 Given radiographs from endoscopic retrograde cholangiographic pancreatography (ERCP), evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.71 Given radiographs from intravenous pyelography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.72 Given radiographs from retrograde pyelography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.73 Given radiographs from retrograde cystography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.74 Given radiographs from voiding cystourethrography, evaluate in terms of: positioning, centering, and overall image quality.

1XRA.57.75 *Given radiographs, identify relevant anatomy.

1XRA.57.76 With appropriate supervision, perform the esophagus radiographic procedure to include positioning, technique and film critique.

1XRA.57.77 With appropriate supervision, perform the upper G.I. radiographic procedure to include positioning, technique and film critique.

1XRA.57.78 With appropriate supervision, perform the small bowel series radiographic procedure to include positioning, technique and film critique.

1XRA.57.79 With appropriate supervision, perform the barium enema radiographic procedure to include positioning, technique and film critique.

1XRA.57.80 With appropriate supervision, perform the oral cholecystography radiographic procedure to include positioning, technique and film critique.

1XRA.57.81 With appropriate supervision, perform the T-tube cholangiography radiographic procedure to include positioning, technique and film critique.

1XRA.57.82 With appropriate supervision, perform the operative cholangiography radiographic procedure to include positioning, technique and film critique.

1XRA.57.83 With appropriate supervision, perform the endoscopic retrograde cholangiographic pancreatography (ERCP) to include positioning, technique and film critique.

1XRA.57.84 With appropriate supervision, perform the intravenous pyelography radiographic procedure to include positioning, technique and film critique.

1XRA.57.85 With appropriate supervision, perform the retrograde pyelography radiographic procedure to include positioning, technique and film critique.

1XRA.57.86 With appropriate supervision, perform the retrograde cystography radiographic procedure to include positioning, technique and film critique.

1XRA.57.87 With appropriate supervision, perform the voiding cystourethrography radiographic procedure to include positioning, technique and film critique.

1XRA.59.00 DISCUSS/PRACTICE ACCEPTABLE IMAGING STANDARDS

1XRA.59.01 *Identify practical considerations in setting imaging standards.

1XRA.59.02 *State acceptance limits.

1XRA.60.00 COMPETENTLY DISCUSS/MANIPULATE RADIOGRAPHIC DENSITY

1XRA.60.01 *Define radiographic density.

1XRA.60.02 *Identify the acceptable range of radiographic density.

1XRA.60.03 *Explain the relationships of factors affecting radiographic density.

1XRA.61.00 COMPETENTLY DISCUSS/MANIPULATE RADIOGRAPHIC CONTRAST

1XRA.61.01 *Define radiographic contrast.

1XRA.61.02 *Differentiate between subject contrast and film contrast.

1XRA.61.03 *Explain the relationships of factors affecting radiographic contrast.

1XRA.62.00 COMPETENTLY DISCUSS/MANIPULATE RECORD DETAIL

1XRA.62.01 *Define recorded detail.

1XRA.62.02 *Differentiate between umbra and penumbra.

1XRA.62.03 *Explain the relationships of factors affecting recorded detail.

1XRA.63.00 CONTROL DISTORTION

1XRA.63.01 *Define distortion.

1XRA.63.02 *Differentiate between shape distortion and size distortion.

1XRA.63.03 *Explain the relationships of factors affecting distortion.

1XRA.64.00 EXPLAIN/MANIPULATE EXPOSURE LATITUDE

1XRA.64.01 *Define exposure latitude.

1XRA.64.02 *Explain the relationships of factors affecting exposure latitude.

1XRA.65.00 DISCUSS/USE BEAM LIMITING DEVICES

1XRA.65.01 *List the types of beam limiting devices and describe the operation and applications for each.

1XRA.65.02 *Explain purposes of beam limiting devices in terms of patient dosage, scattered radiation production, radiographic density, and contrast.

1XRA.66.00 DISCUSS/EMPLOY BEAM FILTRATION

1XRA.66.01 *Define beam filtration.

1XRA.66.02 *Explain purposes of beam filtration in terms of patient dosage, scattered radiation production, radiographic density, and contrast.

1XRA.67.00 DISCUSS/CONTROL SCATTERED AND SECONDARY RADIATION

1XRA.67.01 *Define scattered and secondary radiation.

1XRA.67.02 *Describe interactions of x-rays with matter which produce scattered and secondary radiation.

1XRA.67.03 *Explain the relationships of factors affecting scattered and secondary radiation.

1XRA.67.04 *Explain the effects of scattered and secondary radiation on patient dosage, image quality, and occupational exposure.

1XRA.68.00 DISCUSS/CONTROL EXIT RADIATION

1XRA.68.01 *Explain the relationship between kVp and scattered and secondary radiation.

1XRA.68.02 *Describe a grid in terms of its purpose, components, and construction.

1XRA.68.03 *Differentiate among types of grids.

1XRA.68.04 *Explain grid efficiency in terms of grid ratio and frequency.

1XRA.68.05 *Given technical information, select an appropriate grid.

1XRA.68.06 *Define grid cut off.

1XRA.68.07 *Describe factors influencing grid cut off.

1XRA.68.08 *Describe various grid artifacts.

1XRA.68.09 *Explain the relationship between beam limitation and scattered/secondary radiation.

1XRA.69.00 EXPLAIN/DEMONSTRATE/USE EXPOSURE SYSTEMS

1XRA.69.01 *Explain the purpose of an exposure system in terms of standardization of exposure and image consistency.

1XRA.69.02 *Identify and discuss considerations involved in exposure selection.

1XRA.69.03 Distinguish among various types of exposure systems.

1XRA.69.04 *Given clinical simulations, demonstrate patient measurement and exposure selection.

1XRA.70.00 CALCULATE EXPOSURES

1XRA.70.01 *State the relationships of exposure factors and explain their effects on exposure calculations.

1XRA.70.02 Given exposure factors, calculate the photographic effect.

1XRA.70.03 Given exposure problems, calculate penumbra, magnification factor, and percent magnification.

1XRA.70.04 *Use mAs reciprocity in clinical simulations.

1XRA.72.00 HANDLE AND STORE FILM CORRECTLY

1XRA.72.01 *List the effects of processing considerations and explain their effect on film quality.

1XRA.72.02 *List the effects of storage considerations and explain their effect on film quality.

1XRA.74.00 DISCUSS/EMPLOY FILM HOLDERS AND INTENSIFYING SCREENS

1XRA.74.01 *Discriminate between various film holders in terms of purpose, construction, application, patient dosage, loading/unloading and maintenance.

1XRA.74.02 *Explain the construction and purpose of intensifying screens.

1XRA.74.03 *Describe the principles and function of intensifying screens.

1XRA.74.04 *Explain classifications of intensifying screens and the application of each.

1XRA.74.05 *Outline the maintenance of intensifying screens identifying specifics of handling, cleaning, testing and evaluation.

1XRA.75.00 EXPLAIN/EMPLOY AN AUTOMATIC PROCESSOR

1XRA.75.01 *State the purpose of the automatic processor.

1XRA.75.02 *Given cross-sectional diagrams of automatic processors, label the components and explain the function of each.

1XRA.75.03 *Describe systems of the automatic processor and functions of each.

1XRA.75.04 *Given various types and sizes of film, demonstrate how each is fed into the processor.

1XRA.75.05 *Explain the components of the processing cycle providing the specific action and duration of time for each component.

1XRA.75.06 *Outline daily and periodic aspects of processor maintenance and cleaning.

1XRA.75.07 *Describe the types of artifacts including the cause and effect on a radiograph and methods of preventing each.

1XRA.75.08 *Given radiographs containing artifacts, identify the type, cause and methods of prevention for each.

1XRA.76.00 DESCRIBE/IDENTIFY ARTIFACTS

1XRA.76.01 *Define the term artifact.

1XRA.76.02 *Describe types of artifacts including the cause and effect on a radiograph and methods of prevention for each.

1XRA.76.03 *Given radiographs containing artifacts, identify the type, cause and methods of prevention for each.

2XRA.05.00 DISCUSS/IMPLEMENT IMAGING STANDARDS

2XRA.05.01 *List the elements of a diagnostic image that are necessary for film critique.

2XRA.05.02 *Identify the steps in the decision making process.

2XRA.05.03 *Describe an effective film critique method.

2XRA.05.04 *Describe the role of the radiographer in film critiquing.

2XRA.06.00 EXPLAIN/DEMONSTRATE MANIPULATION OF TECHNICAL FACTORS

2XRA.06.01 *Explain the process for evaluating radiographs for adequate density, contrast and scale of contrast.

2XRA.06.02 *Explain how the radiographer determines if adequate penetration is present along with subject contrast.

2XRA.06.03 *List the parameters for evaluating visibility of detail on radiographs.

2XRA.06.04 *Describe how the degree of image distortion may be evaluated.

2XRA.06.05 *Explain possible cause for proper distortion.

2XRA.07.00 DISCUSS PROCEDURAL FACTORS

2XRA.07.01 *Describe the importance of proper positioning.

2XRA.07.02 *Describe how properly preparing a patient affects the quality of the image.

2XRA.07.03 *Describe/demonstrate the method for assessing beam restriction.

2XRA.26.00 DISCUSS THE NEED FOR/PROMOTE PATIENT PROTECTION

2XRA.26.03 *Explain the purpose and importance of patient shielding.

2XRA.26.04 *Given a list of patient shielding devices and radiographic procedures, compare the method of shielding to the radiographic procedure.

2XRA.26.05 *Explain the ten day rule and its application to female patients of childbearing age.

2XRA.26.06 *Explain the relationship of exposure factors to patient dosage.

2XRA.26.07 *Given various radiographic procedures, state the desired film/screen combination that will result in an optimum diagnostic image with the minimum radiation exposure.

2XRA.26.08 *List methods to be employed to avoid repeat radiographs.

2XRA.26.09 *State the importance of clear, concise instructions (effective communication skills) as a method of radiation protection.

2XRA.26.10 *Identify the effect(s) of immobilization techniques to eliminate voluntary motion.

2XRA.27.00 DESCRIBE/EMPLOY PRACTICAL RADIATION PROTECTION MEASURES

2XRA.27.11 *Demonstrate how time, distance and shielding can be manipulated to keep radiation exposures to a minimum.

2XRA.27.12 *Solve problems with calculations of exposure with varying time, distance and shielding.

2XRA.27.14 *Identify emergency procedures to be followed during failures of x-ray mechanisms.

2XRA.34.00 DISCUSS/DESCRIBE SYSTEMIC CLASSIFICATION OF DISEASE AND DISCUSS RADIOGRAPHIC EXPOSURE COMPENSATIONS REQUIRED

2XRA.34.01 *List the systemic classifications of disease and define each.

2XRA.34.02 *For each of the systemic classifications of disease, describe etiology, examples and sites, complication and prognosis.

2XRA.34.03 *Describe radiographic procedures and techniques appropriate for different examples of disease in each of the systemic classifications.

2XRA.46.00 IDENTIFY/DISCUSS DIAGNOSTIC CONTRAST AGENTS

2XRA.46.01 *Define the categories of contrast agents and give specific examples for each category.

2XRA.46.02 *Compare the pharmacology of barium and iodine compounds.

2XRA.46.03 *Describe methods and techniques for the administration of various types of contrast agents.

2XRA.47.00 DISCUSS/OBSERVE DRUG ADMINISTRATION

2XRA.47.07 *Prepare for injection, contrast agents/intravenous medications, utilizing aseptic technique

Required Readings/Materials

TEXTBOOKS: Merrill's Atlas of Radiographic Positions, Vols. 1, 2 &3, Ballinger, Mosby, 1999.

Radiographic Anatomy and Positioning Workbook, Mosby, 1995.

The Radiography Procedure and Competency Manual, Biedrzycki, Davis, 2000.

SUPPLIES: A well-equipped, fully supervised laboratory, dry bones, radiographs and diagrams.

Audiovisual: Radiography Room
The U.G.I. ERCP
The B.E. Gastroscopy
Colonoscopy

Computer Program: Correctec: Procedures Challenge

Course Requirements (Lectures, Assignments and Assessments)

COURSE REQUIREMENTS:

A. Regular and punctual attendance of all lectures and laboratory exercises.

B. Participation in film critique

C. Read and discuss textbook assignments, outside reading assignments, and worksheets as assigned.

D. Meeting the standard performance requirements of accuracy and proficiency as set by the instructor.

E. Demonstrate proficiency of the requirements set forth in this course by attainment of a grade of "C" or better.

Expectations for Engagement – Face to Face Learning

To help make the learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the learning environment. Students and instructors are welcome to exceed these requirements.

Reasonable Expectations of Engagement for Instructors

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
   - provided my contact information at the beginning of the syllabus;
   - respond to all messages in a timely manner through telephone, email, or next classroom contact; and,

- notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.

2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
    - provide clear information about grading policies and assignment requirements in the course syllabus, and
    - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.

3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
    - return classroom activities and homework within one week of the due date and
    - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

Reasonable Expectations of Engagement for Students

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
    - attend the course regularly and line up alternative transportation in case my primary means of transportation is unavailable;
    - recognize that the college provides free wi-fi, computer labs, and library resources during regular campus hours to help me with completing my assignments; and,
    - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my personal computer equipment or internet service is unreliable.

2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to,
    - missing class when a major test is planned or a major assignment is due;
    - having trouble submitting assignments;
    - dealing with a traumatic personal event; and,
    - having my work or childcare schedule changed so that my classroom attendance is affected.

3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
    - seek out help from my instructor and/or from tutors;
    - ask questions if I don't understand; and,
    - attend class regularly to keep up with assignments and announcements.

IMPORTANT NOTES TO STUDENT:

All Students must attend Section A from 9am to 11am. Half of the students will attend Section B from 12pm to 2pm, and half of the students will attend Section C from 2pm to 4pm. Actual radiographs may be produced during Section B & C. Section B & C assignments will be made by program faculty.

Students must locate an article pertinent to material covered during this semester, submit a written summary and present a short oral presentation on the Monday prior to final exam week.

The SEI process for face-to-face and online courses is scheduled for the week of November 26th.

Grading Policy

METHOD OF EVALUATION:

Students will be allowed to make up tests; however, **10 points will be deducted for each class day a student fails to schedule and complete the examination.**

Grading Criteria:

A - 93-100

B - 84-92

C - 75-83

Weight of Course Requirements:

40% - Unit Examinations

20% - Daily Grades/Lab

40% - Final Examination

ATTENDANCE POLICY:

Student attendance at every class, lab and clinical practicum is expected. Students shall be prompt to class and clinical practicums. Points will be deducted from a student's final course grade for absences. (1-2 abs = .5 pt ea.; 3-5 abs = .75 pt. ea.; 6-7 abs = 1 pt. ea.) A student is considered absent if more than 30 minutes late to lecture or lab or more than two (2) hours late for clinical practicums. Four (4) or more absences will constitute an administrative drop.

ACADEMIC ETHICS:

You are expected to complete your own assignments and take tests without notes or other outside assistance. ALL WORK IS EXPECTED TO BE YOUR OWN. If unethical behavior is detected, ALL parties involved will be denied points for that project exam. The questioned material and a report of the ethics violation will be submitted to the department chair for further action as deemed necessary by the department chair.

Statement of Academic Dishonesty:

Ethics, Cheating and Plagiarism

"Using someone else's ideas or phrasing and representing those ideas or phrasing as our own, either on purpose or through carelessness, is a serious offense known as plagiarism. "Ideas or phrasing" includes written or spoken material, of course, from whole papers and paragraphs to sentences, and, indeed, phrases. but it also includes statistics, lab results, art work, etc. "Someone else" can mean a professional source, such as a published writer or critic in a book, magazine, encyclopedia, or journal; an electronic resource such as material we discover on the World Wide Web; another student at our school or anywhere else; a paperwriting "service" (online or otherwise), which offers to sell written papers for a fee." (statement taken from http://webster.commnet.edu/mla/plagiarism.shtml)

STUDENT SUPPORT:

Success Coaches- The Odessa College Student Success Coaches will help you stay focused and on track to complete your educational goals. If an instructor sees that you might need additional help or success coaching, he or she may submit a Retention Alert or a Starfish Alert. A Student Success Coach will contact you to work toward a solution.

Instructor Assistance - Instructor office hours are posted on their office doors. Instructors are available during the hours to assist students.

Special Needs

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss our concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Learning Resource Center (Library)

The Library, known as the Learning Resources Center, provides research assistance via the LRC's catalog (print books, videos, e-books) and databases (journal and magazine articles). Research guides covering specific subject areas, tutorials, and the "Ask a Librarian " service provide additional help.

Student E-mail

Please access your Odessa College Student E-mail, by following the link to either set up or update your account: http://www.odessa.edu/gmail/. **All correspondence will be submitted using your Odessa College email.**

Student Portal

Please access your Odessa College Student E-mail, by following the link to either set up or update your account: http://www.odessa.edu/gmail/. **All correspondence will be submitted using your Odessa College email.**

Technical Support

For Blackboard username and password help and for help accessing your online course availability and student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Important School Policies

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or student's and instructors' right to academic freedom can be found in the Odessa College Student Handbook.