



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2007 - 2008 **NEXT REVIEW:** 2012 - 2013 **STATUS:** A
(i.e. 2003-2004) *(i.e. 2008-2009)* *(A, I, D)*

COURSE TITLE: Radiographic Anatomy and Positioning III

COMMON COURSE NUMBER: RTE 2523

CREDIT HOURS: 3

CONTACT HOUR BREAKDOWN
(per 16 week term)

CLOCK HOURS:
(Voc. Course ONLY)

Lecture: **48** Lab:
 Clinic: Other:

PREREQISITE(S): RTE 1824

COREQUISITE(S):

PRE/COREQUISITE(S): RTE 2523L, RTE 2623, RTE 2728, RTE 2834

COURSE DESCRIPTION *(750 character maximum):* The principles of anatomy and positioning related to the skull to include facial bones, sinuses and temporal bone; thorax to include ribs and sternum; mammary glands; trauma, pediatric and mobile radiography.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area
 General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area
 General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

1. Ribs
2. Sternum, Sternoclavicular joints
3. Skull (Cranium)
4. Facial /Nasal / Zygoma
5. Orbits / Optic Foramen
6. Mandible / TMJ
7. Paranasal Sinuses
8. Temporal Bone

ASSESSMENT:

Please provide a brief description *(250 characters maximum)* that details how students will be assessed on the course outcomes.

1. Assignments, Comprehensive Unit Exams, Comprehensive Final Exam



Common Course Number: RTE 2523

UNITS

Unit 1 Ribs

General Outcome:

- 1.0 The student shall:** be able to identify anatomy and correctly position the patient for radiographs of the ribs

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Describe anatomic location and purpose of the ribs.
- 1.2 State number of bones comprising the bony thorax.
- 1.3 Distinguish between true, false and floating ribs.
- 1.4 Identify the articulations between ribs and vertebra.
- 1.5 Identify on drawings/radiographs all anatomy of a typical rib, and describe locations for "extra ribs"
- 1.6 Discuss technical differences for radiography of "upper" vs "lower" ribs
- 1.7 List the "routine" positions/ projections for radiographic visualization of the upper and lower ribs.
- 1.8 Determine which position/projection will best demonstrate the various aspects of each rib.
- 1.9 State the film size and orientation appropriate for each position of the rib routine.
- 1.10 Describe the technical factors employed for radiography of the ribs including kVp, mA, time, and distance.
- 1.11 Describe breathing instructions for upper and lower rib routines.
- 1.12 Discuss radiation protection practices for radiography of the ribs.
- 1.13 State reasons for performing radiography of the ribs.
- 1.14 List criteria for determining if rib films are of radiographic quality.



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UNITS

Unit 2 Sternum & Sternoclavicular Joints

General Outcome:

- 2.0 The student shall:** be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the sternum and it's articulations.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1** Identify on drawings or radiographs the anatomy of the sternum.
- 2.2** Describe the articulations between the sternum and the bony thorax.
- 2.3** Discuss the breathing instructions recommended for sternum radiography.
- 2.4** List the routine positions/projections for radiographic visualization of the sternum and it's associated articulations.
- 2.5** Identify the anatomy best demonstrated on each projection of the sternum and it's associated articulations.
- 2.6** State the central ray direction and location for each projection of the sternum and it's associated articulations.
- 2.7** State the film size appropriate for each projection of the sternum and it's associated articulations.
- 2.8** Describe the technical factors employed for Radiography of the sternum and it's associated articulations including kVp, mA, Time and Distance.
- 2.9** Discuss radiation protection for sternum radiography
- 2.10** State reasons for performing radiography of the sternum and it's associated articulations.
- 2.11** State the criteria for determining if sternum films are of diagnostic quality.



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UNITS

Unit 3 Anatomy and positioning of the skull (cranium)

General Outcome:

3.0 The student shall: be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the skull (cranium).

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1** Identify bony parts of the cranium on a diagram, "dry skull" or radiographs of a skull.
- 3.2** Identify the anatomic reference points and base lines employed for skull radiography.
- 3.3** Identify the various portions of each of the individual bones making up the cranium and the articulations of each bone.
- 3.4** Name the sutures of the skull and identify the bones involved with each suture.
- 3.5** Identify the joint classification type of each skull bone articulation.
- 3.6** Define: Bregma, Lambda, Asterion, and Pterion as they relate to the skull.
- 3.7** Differentiate between Mesocephalic, Brachycephalic and Dolichocephalic skull shapes.
- 3.8** Identify each projection of the skull and determine if it is correctly positioned.
- 3.9** Describe the technical exposure factors employed for each projection of the skull including mA, kVp, time and distance.
- 3.10** Describe the anatomy best demonstrated by each of the skull projections.
- 3.11** Discuss differences in "basic" and "trauma" routine for examination of the skull.
- 3.12** Describe the "patient considerations" which should be a part of the radiographic examination of the skull.
- 3.13** Discuss reasons for performing radiography of the cranium.



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UNITS

Unit 4 Facial/Zygomatic Arch/Nasal bones

General Outcome:

- 4.0 The student shall:** be able to identify the anatomy and identify/describe the positions or projections used to demonstrate facial bones, zygomatic arch and nasal bones.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 4.1** Name and identify on a diagram, dry skull or radiograph, those bones making up the part of the skull known as the facial area.
- 4.2** Describe the basic projections employed for radiography of the facial bones, zygomatic arch and the nasal bones.
- 4.3** Identify the articulations between the facial bones.
- 4.4** Identify the various portions that comprise each of the facial bones.
- 4.5** State the central ray direction and location for each projection of the facial, zygomatic and nasal bones.
- 4.6** Describe the anatomy best demonstrated by each of the basic facial/zygomatic arch/nasal bones projections.
- 4.7** Discuss the anatomic landmarks used to determine the quality of positioning for any facial/zygomatic arch/nasal bones projection and how they are used.
- 4.8** Describe the "patient considerations" which should be a part of the radiographic examination of the facial/zygomatic arch/nasal bones.
- 4.9** Discuss reasons for performing radiography of facial bones.
- 4.10** Determine if films of the facial, zygomatic and nasal bones area are of radiographic quality.
- 4.11** Identify the technical factors employed for each projection of the facial area to include mA, kVp, time, SID and film size.



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UNITS

Unit 5 Orbits and Optic Foramen

General Outcome:

5.0 The student shall: be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the orbits and optic foramen.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 5.1** Identify on a diagram, radiograph or bony skeleton those individual bones making up the "orbit".
- 5.2** Describe the shape and orientation of the bony orbit relative to the skull as a whole.
- 5.3** Identify and describe the foramen and fissures located in the area of the bony orbit.
- 5.4** Describe a "blow-out" fracture as it relates to the bony orbit and state the projection that best demonstrates it.
- 5.5** Describe a "tripod" fracture and state which facial bone is affected.
- 5.6** Identify the routine projections employed to demonstrate the orbit and optic foramen.
- 5.7** List the anatomy best demonstrated on each projection of the bony orbit and optic foramen.
- 5.8** Describe the technical factors for each projection of the orbit and optic foramen to include mA, kVp, time, SID and film size.
- 5.9** Describe the patient/part/equipment positioning for each projection of the orbit and optic foramen.
- 5.10** Discuss the anatomic landmarks used to determine the quality of positioning for any orbits and optic foramen projection and how they are used.
- 5.11** Describe the "patient considerations" which should be a part of the radiographic examination of the orbits and optic foramen.
- 5.12** State reasons for performing radiography of the orbits and optic foramen.
- 5.13** Discuss criteria used to assess quality of orbit and optic foramen images



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UNITS

Unit 6 Mandible and TMJ's

General Outcome:

6.0 The student shall: be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the mandible and TMJ.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 6.1** Identify on a diagram, skeleton or radiograph, the anatomic structures of the mandible and tempromandibular joint.
- 6.2** Name and describe the routine projections employed to visualize radiographically the mandible and TMJ's.
- 6.3** Describe the patient/part and equipment positioning for each of the mandible/T.M.J. projections.
- 6.4** Explain why open and closed mouth projections are required for the T.M.J. routine.
- 6.5** Identify the technical factors employed for each of the routine projections employed in mandible and TMJ's radiography including; SID, mA, kVp, time and film size.
- 6.6** State the central ray direction and location for each projection of the mandible and TMJ.
- 6.7** State the anatomy best demonstrated by each of the routine mandible and TMJ's projections.
- 6.8** Discuss the anatomic landmarks used to determine the quality of positioning for any mandible and TMJ's projection and how they are used.
- 6.9** Describe the "patient considerations" which should be a part of the radiographic examination of the mandible and TMJ's.
- 6.10** State reasons for performing radiography of the mandible or TMJ
- 6.11** Discuss criteria used to assess quality of mandible or TMJ images



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UNITS

Unit 7 Paranasal Sinuses

General Outcome:

- 7.0 The student shall:** be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the paranasal sinuses vertebral column.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 7.1** Identify on a diagram, dry skull or radiograph the Frontal, Maxillary, Ethmoid and Sphenoid Sinus.
- 7.2** Describe the routine projections employed to demonstrate the Paranasal sinuses.
- 7.3** Identify the sets of paranasal sinuses and anatomy best demonstrated on each projection of the "sinuses".
- 7.4** Explain the importance of the upright position when radiographing the paranasal sinuses.
- 7.5** Describe the patient/ part and equipment positioning for each projection of the sinuses.
- 7.6** Describe the technical factors employed for each projection of the sinuses including; SID, mA, kVp, time and film size.
- 7.7** State reasons for performing radiography of the paranasal sinuses.
- 7.8** Discuss the anatomic landmarks used to determine the quality of positioning for any paranasal sinuses projection and how they are used.
- 7.9** Describe the "patient considerations" which should be a part of the radiographic examination of the paranasal sinuses.
- 7.10** Discuss the anatomic landmarks used to determine the quality of positioning for any paranasal sinus projection and how they are used.
- 7.11** Describe the "patient considerations" which should be a part of the radiographic examination of the paranasal sinuses.
- 7.12** State reasons for performing radiography of the paranasal sinuses
- 7.13** Discuss criteria used to assess quality of paranasal sinus images



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UNITS

Unit 8 Temporal bones

General Outcome:

8.0 The student shall: be able to identify the anatomy and identify/describe the positions or projections used to demonstrate the temporal bones.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 8.1** Identify on a diagram, dry skull or radiograph the various parts of the temporal bone.
- 8.2** Describe the structures located in the petrous portion of the temporal bone.
- 8.3** Identify the various portions that comprise the temporal bone
- 8.4** Distinguish between the external, middle and inner ear and describe the various portions of each.
- 8.5** Identify those bones that are responsible for hearing and equilibrium.
- 8.6** Describe the structures best demonstrated on each projection of the temporal bones.
- 8.7** Describe the patient/part and equipment positioning for each projection of the temporal bones.
- 8.8** Describe the patient/part and equipment positioning for each projection of the temporal bones.
- 8.9** Identify the technical factors employed for each of the projections of the temporal bones including; SID, mA, kVp, time and film size.
- 8.10** Discuss the anatomic landmarks used to determine the quality of positioning for any temporal bones projection and how they are used
- 8.11** Describe the "patient considerations" which should be a part of the radiographic examination of the temporal bones.
- 8.12** State the central ray direction and location for each projection of the temporal bones.
- 8.13** State reasons for performing radiography of the paranasal sinuses
- 8.14** Discuss criteria used to assess quality of paranasal sinus images