



BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

School of Health Sciences

Program: Medical Radiography

Option:

Course Outline

MRAD 2216

Radiographic Procedures 2

Start Date: September, 2001

End Date: December, 2001

Course Credits: 4

Term/Level: 2

Total Hours: 72

Total Weeks: 8

Hours/Week: 9

Lecture: 4

Lab: 5

Shop:

Seminar:

Other:

Prerequisites

Course No.	Course Name
MRAD 1106	Radiographic Procedures 1

MRAD 2216 is a Prerequisite for:

Course No.	Course Name
MRAD 3316	Radiographic Procedures 3

Course Calendar Description

Positioning for radiographic procedures related to the urinary and digestive systems as well as vertebral column, hip and shoulder girdle radiography will be covered. Skills to evaluate the diagnostic and technical acceptability of the radiographs for the respective areas will also be examined. Methods for formulating technique changes for various exams and for the variations of the normal patient will be developed. Renal tomography will be discussed. Labs will reinforce theoretical components of the course.

Course Goals

To provide students with the skills required to:

1. position patients for the views/projections being studied.
2. understand renal tomographic applications.
3. evaluate the diagnostic and technical acceptability of radiographs of areas being studied.
4. calculate technique changes and recognize variables of techniques for various exams and the variations of the normal patient.
5. produce specified radiographs using radiographic phantoms.

Evaluation

Final Examination	40%	All labs and projects must be satisfactorily completed before a course mark will be given.
Midterm	30%	
Rad Eval Quizzes	15%	
Lab Radiograph Assignment	10%	
Laboratory	5%	(60% is required for a pass.)
TOTAL	100%	

Course Learning Outcomes/Competencies

Upon successful completion of this course, the student will be able to:

1. Define, describe and demonstrate beam directions, centering points and patient positioning relating to the radiography of the:
 - vertebral column
 - urinary system
 - GI system
 - hip and acetabulum
 - shoulder girdle
2. Describe required projections relating to radiographic examinations of the urinary and digestive systems.
3. Describe tomographic considerations for renal structures.
4. Demonstrate radiographic judgement, organizational and communication skills and radiographic competence while positioning a patient.
5. Evaluate radiographs for the studied areas for diagnostic acceptability based on:
 - a. inclusion of all required structures
 - b. demonstration of correct positioning
 - c. appropriate level of density demonstrated
6. Assess main contributing factors to the overall radiographic image quality based on the:
 - a. type of patient involved (body habitus, pathology, limitation of movement)
 - b. appropriate technique factors required
 - c. acceptable processing methods used
7. Propose possible solutions to poor radiographic quality.
8. Calculate radiographic technique factors using the DuPont Bit System.
9. Outline technique chart adjustments to *be made with respect to*:
 - a. patient body habitus
 - b. patient pathology
 - c. patient age
 - d. specific equipment used (generators, film screen, grids, etc.)

Course Content Verification

I verify that the content of this course outline is current, accurate, and complies with BCIT Policy.

M. Filippelli

Program Head/Chief Instructor

August 2001

Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.



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Instructor(s)

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and by appointment

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Learning Resources

Required:

1. Radiographic Procedure Level 2 MRAD 2216 Manual.
2. "Merrill's Atlas of Radiographic Positions and Radiologic Procedures," Phillip W. Ballinger (9th Edition). Volumes 1 and 2.

Recommended:

1. "Skeletal Anatomy" — Byron.
 2. "Joy of Sectioning" — Dowdell.
 3. "Textbook of Radiographic Positioning and Related Anatomy" — Bontrager.
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BCIT Policy Information for Students

Radiographic Evaluation Quizzes

There will be a Rad Eval quiz each week in the film critique labs (Room 4060). In addition to ensuring comprehension of material, the objective of these quizzes is to encourage peer coaching and to promote confidence in your abilities. These are desirable skills in the workplace.

Persons participating in the Rad Eval quiz will be randomly selected each week. The topic will be from the area studied the previous week. Persons not selected for the weekly quiz may be asked to prepare an oral presentation.

In term 2, the quizzes will be done with partners. The procedure will be as follows:

- During the lab, you will be given 5 minutes to critique a radiograph using the 10 point radiographic evaluation technique and form.
- When you have finished critiquing your radiograph, a partner will be assigned to review the critique.

- Discuss the critique with your partner. You may choose to change the critique after the discussion, prior to handing in the Rad Eval form.
- The final decision on what is presented on the radiographic evaluation form rests with the originating partner.

Applied Lab

The lab will be done with an assigned partner. Partners and room assignments will be randomly selected on a weekly basis.

Assume that you are relieving another technologist for coffee. He/she has just developed the last film for a radiographic series on the patient on the table.

The following setup will be used:

- machine/equipment will be on
- view/projection will be indicated on the radiographic evaluation form
- phantom will be on the table in the position that it was when the radiograph was taken
- technique that was used for the radiograph will be set on the control panel
- exposed cassette will be in position as it was exposed

You will evaluate the radiograph with your partner using the 10 point radiographic system.

Repeat the radiograph if not all criteria are met. Clinical notebooks may be used. **Only one repeat may be made.** While one person is developing the radiograph, the other person should shut the room down. Complete the 10 point radiographic evaluation for your repeat radiograph.

Students are responsible for ensuring rooms are left neat and tidy.

Radiographs and corresponding rad eval sheets are to be handed in at the end of the lab.

Lab Radiograph Assignment Details

Each group will produce the specified radiograph(s) for the weekly positioning lab.

- Submit the film(s) and blue instruction sheet(s) on which you have printed your lab room number and the names of the group of students.
- The radiographs will be graded and returned to one of the students.
- Each student in the group will receive the same grade.

- Marks will be assigned for:
 1. positioning (phantom limitations noted)
 2. structures included
 3. density
 4. collimation
 5. markers and ID
 6. lack of artifacts
 7. filtration
 8. timely submission
 9. completeness and thoroughness
 10. neatness and professionalism of submission