BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

School of Health Sciences
Program: Medical Radiography
Option:

Course Outline Part A

MRAD 2203
Radiographic Technique and Evaluation 2

Hours/Week:	3	**Total Hours:**	45	**Term/Level:**	2
Lecture:		**Total Weeks:**	15	**Credits:**	2
Lab:					
Other:					

Prerequisites

Course No.	Course Name
MRAD 1103	Radiographic Technique and Evaluation 1

MRAD 2203 is a Prerequisite for:

Course No.	Course Name
MRAD 3303	Radiographic Technique and Evaluation 3

Course Goals

1. To provide students with the skills required to evaluate the diagnostic and technical acceptability of medical radiographs of the vertebral column, urinary system, gastrointestinal system, thoracic cage, pharynx and trachea.

2. Students will formulate technique charts and recognize variables to the normal patient.

Course Description

Through tutorials and laboratory sessions, this course will address issues relating to Radiographic Technique and Technique Charts. In addition, the criteria for evaluating radiographs of the spine, urinary tract, gastrointestinal tract, pharynx, trachea and the thoracic cage will be discussed. Finally possible solutions to poor radiographic image quality will be discussed.

Evaluation

Final Examination	45%
Mid-Term	30%
Laboratory Quizzes	15%
Assignments	10%
TOTAL	100%

Course Outcomes and Sub-Outcomes

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

1. Evaluate radiographs for diagnostic acceptability based on:
    a. inclusion of all required structures
    b. demonstration of correct positioning
    c. appropriate level of density demonstrated
2. 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
3. Propose possible solutions to poor radiographic quality.
4. Develop radiographic technique charts using the DuPont Bit System.
5. 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.)
    e. casts

Course Record

Developed by: _____ Date: _____
Instructor Name and Department (signature)

Revised by: Euclid Seeram Date: Sept. 1995
Instructor Name and Department (signature)

Approved by: [signature] Start Date: Sept. 1995
Associate Dean / Program Head (signature)

Effective Date

August, 1996

Instructor(s)

Euclid Seeram, RTR, BSc, MSc Office No.: 4084 Phone: 8231
Office Hrs.: As Posted

Text(s) and Equipment

Required:

1. Ballinger, Philip W. Merrill's Atlas of Radiographic Positions and Radiographic Procedures – Volume 2, 6th Edition.

2. Bushong, S. Radiologic Science for Technologists, 5th Edition. 1993.

Recommended:

1. Cullinan, Angeline M. Producing Quality Radiographs. 1993.

2. Carlton, R.R. & Adler, A.M. Principles of Radiographic Imaging. 1992.

3. Notes from MRAD 1101 and 1103. 1995.

4. Wallace, J.E. Radiographic Exposure. Principles and Practice. 1995.

Course Notes (Policies and Procedures)

Assignment Details

There are 2 lab assignments. The requirements for completion will be discussed in class.

MRAD 2203 1996

RADIOGRAPHIC EVALUATION LECTURE/LAB COURSE OUTLINE

SET A/C DATES		TOPIC	SET B/D DATES	
		week of Sept. 3 - Special Studies		
Sept.	10 am	introduction cervical spine critique	Sept.	10 am
	10	cervical spine		12
	11	bit system review		11
Sept.	17 am	thoracic and lumbar spine critique and technique adjustments	Sept.	17 am
	17	thoracic and lumbar spine		19
	18	**SHINERAMA**		18
Sept.	24 am	upper GI critique and techniques	Sept.	24 am
	24	upper GI		26
	25	building a technique chart		25
Oct.	1 am	lower GI critique and technique adjustments	Oct.	1 am
	1	lower GI		3
	2	building a technique chart		2
Oct.	8 am	urinary system critique and techniques	Oct.	8 am
	8	urinary system		10
	9	presentations		9
Oct.	14	**THANKSGIVING**		
		applied lab of GI/urinary systems	Oct.	28
	16	hip and acetabulum critique and techniques		30
	15/17	hip and acetabulum		29/31
	18	applied lab of spine	Nov.	1
Oct.	21	APPLIED RAD EVAL MIDTERM	Nov.	4
	23	sacrum, coccyx and SI jts. critique and techniques		6
	22/24	sacrum coccyx and SI jts.		5/7
	25	building a technique chart		8

Nov.	11	**REMEMBRANCE DAY**		
~~applied lab hip and SI jts.~~			~~Nov.~~	~~25~~
	13	ribs, chest, neck & sternum critique and techniques assignment #1 due		27
	12/14	neck, chest		26/28
	~~15~~	~~applied lab ribs, sternum~~		~~29~~
Nov.	18	techniques / presentations assignment #2 due	Dec.	2
	20	AC/SC jts., biliary system critique and techniques		4
	19/21	AC/SC jts and review		3/5
	22	biliary system and review		6

Grey shaded areas are labs in 4060

~~Striped areas are practical application labs in 4035~~

Rad Eval
Level 2

ASSIGNMENTS

1. CREATING A TECHNIQUE CHART

Each student will create a technique chart for the human body based on a pail of water.

- using a plastic pail filled with water to a specific level (approximately the same measurement as an average abdomen, produce a radiograph that has a density of 1.0.

- based on this technique, produce an abdomen radiograph in the supine position (AP abdo)

- base on the Dupont Bit system and the AP abdomen radiograph, create a technique chart for the human body

2. COMPARING ACTUAL HOSPITAL TECHNIQUE CHART EXPOSURES WITH CREATED TECHNIQUE CHART

Each student will compare and analyze the difference of extremity techniques between the created techniques and actual hospital techniques.

3. PRESENTATIONS (OPTIONAL)

Students may wish to negotiate to make a presentation to the class. Topics that could be considered are topics in the rad eval manual or other negotiated topics.

Rad Eval
Level 2

LAB QUIZZES

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

- 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, exchange your radiograph and your rad eval form with a partner.
- Using a different colored pencil, evaluate your partner's critique using your own knowledge.
- Discuss your evaluation of your partner's critique with your partner. Your partner may choose to change his/her critique after the discussion, prior to handing in the rad eval form.
- Choose a different partner for each quiz as the originating person and the evaluating person will receive the same mark for that particular radiograph.
- You will be required to do a quiz every other week.

Rad Eval
Level 2

APPLIED LAB

~~The applied rad eval lab in rm. 4035 is designated by this horizontal line design on the course outline schedule.~~

Gather in Rm. 4035 as per the course schedule. The lab will be done with your assigned radiographic positioning lab partner. There will be a brief introduction and then you can proceed to one of your regular assigned lab rooms.

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 set-up will be used:

- machine/equipment will be on
- radiograph will be on the viewbox
- view/projection will be indicated on the rad eval form
- phantom will be on the table in the position that it was when the radiograph was taken
- technique tat was used for the radiograph will be set on the control panel

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

Repeat the radiograph is not all criteria are met. Clinical notebooks may be used. For each repeat, complete a rad eval form.

Review the radiographs and critiques with an instructor.

Students are responsible for regular assigned lab duties with the exception of wrap.