



School of Health & Human Services
Medical Radiography Technology

Course Name: Principles of Radiographic Imaging 2

Course Number: MRAD 159

COURSE OUTLINE

The Approved Course Description is available on the web:

<http://camosun.ca/learn/calendar/current/web/mrad.html#MRAD159>

Please note:

- *This outline will be electronically stored for five (5) years only. It is strongly recommended students keep this outline for your records.*
- *This course is only open to students in the Medical Radiography program.*

Introduction:

In this advanced-beginner course, students build on their knowledge of how to operate radiographic and accessory imaging equipment. Students explore fluoroscopy, mammography, mobile radiography, as well as intra-operative equipment. Students focus on the digital imaging process and digital archiving principles as they apply to a variety of radiographic imaging modalities. In the lab component of this course, students execute quality control tests and apply tolerance standards as outlined in federal safety codes to assess equipment performance.

Students must achieve a minimum of a C+ (65%) to use this course as a prerequisite. Refer to the Camosun Calendar for detailed information about course prerequisites.

1. Instructor Information

(a)	Instructor:	Brent McMillen		
(b)	Office Hours:	Tuesday and Thursday 1130-1230		
(c)	Location:	WT 212D		
(d)	Phone:	250-370-3169	Alternative Phone:	
(e)	Email:	mcmillenb@camosun.ca		
(f)	Website:	http://online.camosun.ca/		

2. Intended Learning Outcomes/Competencies

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

- a) Describe the evolution, function, and importance of x-ray tubes used in a variety of medical imaging procedures.
- b) Explain how diagnostic images are produced by describing the components and function of computed radiography, digital radiography, fluoroscopy, mobile radiography, mammography, and C-arms.
- c) Describe how digital imaging principles and techniques are used in the performance of medical radiography.
- d) Describe the use of digital archiving principles in the management of imaging data within a variety of workplace settings.
- e) Apply the principles of quality control and quality assurance to review and analyze radiographic images for accuracy and quality.

[CAMRT Medical Radiography Competency Profile](#)

[CAMRT Medical Radiography Competency Profile May 2018 certification exams](#)

3. Learning Resources

Required Textbooks:

Seeram, E. (2011). *Digital Radiography: An Introduction*. Delmar, Cengage Learning.

Bushong, S.C. (2008). *Radiologic Science for Technologists: Physics, Biology, and Protection* (10th ed.). Elsevier Health Sciences.

Fauber, T. (2013). *Radiographic Imaging & Exposure* (4th ed.). Elsevier Health Sciences.

Optional Textbooks:

Carter, C.E. & Veale, B.L. (2014) *Digital Radiography and PACS* (2nd ed.). Elsevier: Mosby.

Desire-to-Learn (D2L):

D2L – the Camosun College online learning portal contains the remainder of the learning materials for this course. Students are expected to familiarize themselves with the online learning environment and all the features it has to make this course experience enriching. Log on at <https://online.camosun.ca/> to access these materials.

Additional resources may include, but are not limited to: lecture notes, PowerPoint slides, Laboratory Manuals, and hyperlinks. You may prefer to download lectures notes ahead of time (when available) and then write your notes directly onto copies of the slides. YouTube and other media services will also be used throughout the course via public domains.

D2L materials **must not** be considered your sole source of information. They merely summarize the main points and provide direction for your learning experiences. You may need to write down additional information in each lecture. Additionally, not all details can be covered in a lecture, and you will be required to refer to textbook material that is not discussed specifically in class.

Other Materials:

Additional resources may include, but are not limited to: PDF's, lecture notes, PowerPoint slides, Textbook Companion Workbooks, Laboratory Manuals, and hyperlinks. You may prefer to download lectures notes ahead of time (when available) and then write your notes directly onto copies of the slides.

4. Student Assessment

Attendance/Participation	10%
Quizzes	20%
Assignment #1:RFP Proposal	25%
Assignment #2:QC Video Project	30%
Seminar Leadership: Presentation, Critique, Discussion	15%
TOTAL	100%

Students must achieve a minimum of 65% to use this course as a prerequisite.

Assessment Details

Attendance

You are expected to attend all classes and labs, and be on time. It is your responsibility to acquire all information given during a missed class, including notes, hand-outs, assignments, changed exam dates, etc. Missed exams or quizzes cannot be made up except in case of documented illness (doctor's note required).

In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with his/her instructor indicating the reason for the absence. Prolonged illness of three or more consecutive days must have a medical certificate sent to the department.

For other Assessment Details please refer to the D2L course home page.

- In emergency circumstances, a student may write a test or final examination before or after the scheduled time if the student would otherwise be unable to complete the program or course. Exceptions due to emergency circumstances, such as unavoidable employment commitments, health problems, or unavoidable family crises, require the approval of the instructor. Holidays or scheduled flights are not considered to be emergencies. The student may be required to provide verification of the emergency circumstance. Camosun Academic Policy retrievable from: <http://camosun.ca/learn/calendar/current/pdf/academic-policies.pdf>)

5. Course Content and Schedule:

Lecture Days/Times & Room Number:

WT 212 C

Monday 1230-0120

Thursday 0230-0320

Lab Days/Times & Room Number:

WT 212A,B,C

X-Ray Labs – 2 hours each week based on designated set

Wednesday 0130-0520 (designated set)

Friday 1030-1120 (all students)

The following schedule is tentative and subject to change if deemed necessary by the instructor.

Week	Dates	Module	Lecture	Lab	Quizzes and Assignments
1	May 2-6	1	Introduction Film/Screen Based Radiography & X-ray Tube Innovations	Cleaning Imaging Plates and Cassettes	
2	May 9-13	2	Digital Radiography: An Overview	RFP lab-go over requirements for project	
3	May 16-20	3	Digital Imaging Processing: Concepts 1 st seminar	Erase Lab	Quiz #1 before lab 2
4	May 23-27 May 23-Victoria Day -no class	4	Mobile Imaging 2 nd seminar	-identify resources for Final Product Kvp Accuracy	Quiz # 2 before lab 2
5	May 30-June 3	5	Fluoroscopy 3 rd seminar	HVL	Quiz #3 before lab 2
6	June 6-10	6	Computed Radiography: Physics and Technology 4 th seminar	CR noise	Quiz #4 before lab 2 Assignment #1 Part A – RFP presentations due on Sunday 2359
7	June 13-17 June 17 – Graduation Day- no class		RFP Presentations	No lab	Assignment #1 Part B – RFP written response due Sunday 2359
8	June 20-24	7	Effective use of CR 5 th seminar	Spatial Resolution	Quiz #5 before lab 2
9	June 27-July1 July 1-Canada Day –no class	8	QA/QC concepts 6 th seminar	mAs reproducibility	Quiz #6 before lab 2
10	July 4-8	9	Flat Panel Digital Radiography 7 th seminar	X-ray Room	Quiz #7 before lab 2
11	July 11-15	10	Digital Fluoroscopy, Tomo, Digital Mammography, & QC 8 th seminar	SC 35	Quiz #8 before lab 2
12	July 18-22	11	PACS	PACS	
13	July 25-29	12	QC for Digital Radiography	Free time to work on project	Assignment #2 QC video project due on Sunday 2359
14	August 1-5		Project Presentations		

Week	Dates	Module	Lecture	Lab	Quizzes and Assignments
15	August 8-12	EXAM WEEK – NO FINAL EXAM FOR THIS COURSE			

*Exam Period is scheduled by registrar - check CAMLINK.
Specifics will be updated in D2L when known.*

Do not book trips until the final exam schedule is posted by the registrar.

6. Grading System

The following two grading systems are used at Camosun College. This course will use:

- Standard Grading System (GPA)
- Competency Based Grading System

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+	Minimum level of achievement to use the course as a prerequisite.	3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted.	1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or
IP	<i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum,

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

CONDUCT POLICIES

It is the student's responsibility to become familiar with the content of these policies. The policies are available in each School Administration Office, Registration, and on the College web site in the Policy Section.

[Academic Policies and Procedures](#)
[Student Conduct Policy](#)

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Registrar's Office or the College web site at

<http://www.camosun.bc.ca>

MRT PROFESSIONAL CODE OF ETHICS

Camosun College Medical Radiography Technology students are expected to abide by the Canadian Association of Medical Radiation Technologist (CAMRT) Code of Ethics inasmuch as it applies to them in the learning and clinical environments. This information is available on the CAMRT website at:

[CAMRT Code of Ethics](#)

MRT Department Policies & Procedures

Camosun College Medical Radiography Technology students are responsible for knowing all of the MRT Department Policies and must abide by them, including dress codes & lab safety procedures.

<http://camosun.ca/learn/programs/mrt/handbook.pdf>

8. GENERAL INFORMATION

Students are expected to attend all classes and labs. If you are unable to attend the lecture it is your responsibility to acquire all information given during a missed class including notes, hand-outs, assignments, changed examination dates, etc.

The Medical Radiography Technology program is committed to promoting competence, professionalism and integrity in our students and developing their core skills to succeed throughout their academic programs and in their careers. The purpose of Academic Honesty Guidelines is to provide clear expectations of appropriate academic conduct and to establish processes for discipline in appropriate circumstances. It is the student's responsibility to become familiar with the content and the consequences of academic dishonesty. Before you begin your assignments, review the Academic Policies on the Camosun College website:
<http://camosun.ca/learn/becoming/policies.html>