



*School of Health & Human Services*  
Medical Radiography Technology

**Course Name: Advanced Radiographic Procedures**

**Course Number: MRAD 157**

## **COURSE OUTLINE**

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**The Approved Course Description is available on the web:**

<http://camosun.ca/learn/calendar/current/web/mrad.html#MRAD157>

*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 synthesize academic and clinical concepts to develop adaptive radiography skills. In the laboratory setting, students simulate complex examinations using phantoms and laboratory partners and create radiographic exposure charts. Students explore specialty imaging modalities in preparation for more complex patient encounters during their final two clinical practicums. Students who successfully demonstrate critical clinical safety indicators and problem-solving skills while simulating advanced radiographic procedures will progress to the advanced beginner clinical practicum.

***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 and Sarah Erdelyi		
(b)	Office Hours:	Brent: Tuesday and Thursday 1130-1230 Sarah: Wednesdays 1130-1230		
(c)	Location:	WT 212D		
(d)	Phone:	250-370-3169	Sarah's Phone:	250-370-3996
(e)	Email:	<a href="mailto:mcmillenb@camosun.ca">mcmillenb@camosun.ca</a> <a href="mailto:erdelyis@camosun.ca">erdelyis@camosun.ca</a>		
(f)	Website:	<a href="http://online.camosun.ca/">http://online.camosun.ca/</a>		

## 2. Intended Learning Outcomes/Competencies

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

- a) Demonstrate correctly positioned radiographic projections on phantoms and laboratory partners for specialized radiographic examinations of the body requiring adaptations.
- b) Apply the components of a radiographic examination to complex patient scenarios encountered during their remaining clinical practicum experiences, including specialty imaging modalities.
- c) Develop a systematic approach to adapting radiographic examinations to complex patient scenarios.
- d) Apply and convey corrective actions to sub-optimal radiographic images of the body in pursuit of optimal radiographs.

[CAMRT Medical Radiography Competency Profile](#)

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

### 3. Learning Resources

#### Required Textbooks:

Bontrager, K.L., & Lampignano, J.P. (2018). *Textbook of Radiographic Positioning and Related Anatomy* (9<sup>th</sup> ed.). St. Louis, Missouri: Elsevier Mosby.

McQuillen Martensen, K. (2015). *Radiographic Image Analysis* (4<sup>th</sup> ed.). St. Louis, Missouri: Elsevier Saunders.

Bontrager, K.L., Lampignano, J.P., & Kendrick, L.E. (2018). *Workbook: Textbook of Radiographic Positioning and Related Anatomy* (9<sup>th</sup> ed.). St. Louis, Missouri: Elsevier Mosby.

Bontrager, K.L., & Lampignano, J.P. (2018). *Bontrager's Handbook of Radiographic Positioning and Techniques* (9<sup>th</sup> ed.). St. Louis, Missouri: Elsevier Mosby.

#### Optional Textbooks:

Fauber, T. (2017). *Radiographic Imaging & Exposure* (5<sup>th</sup> ed.). Elsevier Health Sciences.

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

Carroll, Q.B., & Bowman, D.(2014). *Adaptive Radiography with Trauma, Image Critique and Critical Thinking*. Delmar, Cengage Learning.

#### 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

Quizzes	20 %
Midterm	15 %
Lab Competencies	15 %
Oral Critique	10 %
Assignments	10 %
Final Exam	30 %
<b>TOTAL</b>	<b>100 %</b>

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

#### Assessment Details

##### Quizzes

There will be quizzes following the completion of a module. They are used to assess your level of knowledge as it relates to the content from that module. The purpose of these quizzes throughout the term is to keep you up to date on course content, help you identify areas of weakness, celebrate successful integration of knowledge, provide confidence, decrease anxiety, and expose you to the type of questions you can expect on the midterms and final exam.

##### Midterm

The midterm is cumulative from the start of the term. It is used to assess your level of knowledge as it relates to the content from multiple modules. The purpose of these midterms is to keep you up to date on course content, help you identify areas of weakness, celebrate successful integration of knowledge, provide confidence, decrease anxiety, and expose you to the type of questions you can expect on the final exam.

##### Lab Competencies

Upon completion of the practice activities for that module, students will demonstrate their ongoing Simulation Competency through a combination of scenarios, role playing, phantom simulation & exposure, image production and image critique. Students will be marked on specific components of a radiographic exam and be given instructor feedback.

After the competency is finished students may have a self-reflection to complete regarding that module.

When the self-reflection is complete the student is to drop box their score sheet and self-reflection into the assigned drop box. This is due on the Sunday after the competency at 2359.

It is expected that all labs will be attended by the student as this is the opportunity for the student to practice what they have learnt in lecture and will allow greater success in the competencies and in clinical. Each student is partnered, so any absence affects another

students learning. An unexplained/unsanctioned lab absence compromises a lab partner's ability to learn and the absent student may enter a learning contract.

### **Oral Critiques**

Oral critiques will build on prior academic and clinical learning related to image analysis.

### **Assignments**

Assignments for this course may consist of the workbook, study share, adaptive worksheets, and/or written critique. Each assignment will build on the lecture material, help you identify areas of weakness, celebrate successful integration of knowledge, provide confidence, decrease anxiety, and expose you to the type of questions you can expect on the midterms and final exam.

### **Final Exam**

The final examination is cumulative and includes material from all modules covered in the course. This final examination will occur during the regularly scheduled final exam week.

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

- 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

Procedures

Tuesday 0930-1120

Critique

Wednesday 0130-0220

### **Lab Days/Times & Room Number:**

WT 212A, B, C

X-Ray Labs – 6 hours each week based on designated set

Procedures Section 1 & 2 (5 hrs)

Tuesday 230-0420

Thursday 1230-0220

Friday 1130-0320 (1 hr based on set)

Procedures Section 3 & 4 (5 hrs)

Tuesday 1230-0220

Thursday 0230-0420

Friday 1130-0320 (1 hr based on set)

Critique lab – all sections (1 hr)

Wednesday 0230-0320

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

Week	Dates	Module	Lecture *Critique has a separate lecture that supplements Positioning lecture/labs	Lab	Quizzes and Assignments
1	May 7-11	1	Introduction	See D2L for details for labs	
2	May 14-18	2	Fluoroscopy/Upper GI		
3	May 21-25 May 21-Victoria Day -no class		Biliary Tract/Upper GI		Quiz #1: Intro/Fluoroscopy/Ch. 12  Oral Critique #1  Workbook #1 due Friday at 1230 Ch.12
4	May 28-June 1	3	Lower GI		
5	June 4-8	4	Urinary/Venipuncture		Quiz #2: Ch.12/13  Comp #1 : Upper and Lower Gastrointestinal System  Workbook #2 due Friday at 1230 Ch.13
6	June 11-15	5	Special Radiographic Procedures		
7	June 18-22 June 22 – Graduation Day-no class	6	Adaptive Radiography		Midterm #1 Bontrager 12,13,14,19 and MQM Ch.1,2,12  Oral Critique #2  Workbook #3 due Friday 1230 Ch. 14,19
8	June 25-29		Adaptive: Chest/Bony Thorax/Abdomen		
9	July 2-July 6 July 1- in lieu of Canada Day –no class July 2		Adaptive: Upper/Lower		Quiz #3: Adaptive scenario Math and Critique (Chest, Bony thorax, abdomen)
10	July 9-13		Adaptive: Shoulder/Pelvis/Hip		Comp #2: Adaptive I – upper/lower/chest
11	July 16-20		Adaptive: Spine/Skull		
12	July 23-27	7	Operating Room		Workbook #4 due Friday 1230 Ch.15/16
13	July 30-Aug 3	8	Angio/IV/Diagnostic and Therapeutic Modalities		



Week	Dates	Module	Lecture *Critique has a separate lecture that supplements Positioning lecture/labs	Lab	Quizzes and Assignments
14	Aug.6-Aug 10 BC day Aug.6 – no classes		Review		Quiz #4 Bontrager Ch. 15,16,17,20  Comp #3: Adaptive II All projections – weighted with shoulder/spine/sk ull/pelvis/hip
15	August 13-17	<b>EXAM WEEK</b>			

***\*\*Refer to D2L page for specific details for assignments and Critique portion of 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](http://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 <sup>rd</sup> 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>