

COURSE SYLLABUS



COURSE TITLE: MRAD 117 - Introduction to Radiographic Procedures
CLASS SECTION: BX01A-D
TERM: F2023
COURSE CREDITS: 6
DELIVERY METHOD(S): Synchronous

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.
Learn more about Camosun's [Territorial Acknowledgement](#).

INSTRUCTOR DETAILS

NAME: Brent McMillen, Hong Gerow, Dan Andrews
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OFFICE: CHW 317
HOURS: upon request

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

Restricted to students in Medical Radiography

In this novice course, students examine the basic components of a radiographic procedure, integrating foundational positioning skills for routine radiographic examinations of the body. In the laboratory setting, students will take radiographic images of phantoms (simulated human bodies) and analyze their images, while adhering to federal radiation safety standards. Students who successfully demonstrate critical clinical safety indicators while simulating radiographic procedures will advance to the novice clinical practicum.

PREREQUISITE(S): **All of:** C+ in AHLT 104 C+ in AHLT 112 C+ in MRAD 106 C+ in MRAD 119
CO-REQUISITE(S): **All of:** MRAD 108; **All of:** C+ in AHLT 104 C+ in AHLT 112 C+ in MRAD 106 C+ in MRAD 119
EQUIVALENCIES: N/A

COURSE OBJECTIVES AND MAPPED PROFESSIONAL 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 routine radiographic examinations of the body.
- b) Apply the components of a radiographic examination (interpret the request, plan the examination, establish the patient relationship, execute the procedure, and conclude the examination) to low complexity patient scenarios encountered during the first clinical practicum experience.
- c) Discuss the implications of varied patient health conditions (physical and emotional) on routine examinations of the body and the necessity for the Medical Radiation Technologist to appropriately respond.
- d) Apply and convey anatomic knowledge, basic radiographic principles, patient care considerations, and best practices when analyzing images for diagnostic acceptability

Canadian Association of Medical Radiation Technologists Competency Profile, Radiological Technology (2019)

1. List the essential projections for the body. (1.3.1) (1.3.1, RTR.3.1)
 2. List proper (technical and positioning) parameters (IR size, SID, CR, collimation, marker location, KVp, breathing instructions, grid, body and part position, other) to obtain an optimal image for essential projections of the body. (1.3.1) (1.1.2, 1.3.1, 4.3.3, RTR.1.5, RTR.1.1, RTR.6.1)
 3. Describe the image evaluation criteria for essential projections of the body.
(RTR.2.7, D4.2,, RTR.6.5, RTR.6.6, 1.3.1, RTR.6.8) (2.1.3, RTR.6.1, RTR.3.1, RTR.6.2, RTR.6.3)
 4. Compare and contrast essential projections of the body.
(1.3.1) (2.1.3, RTR.6.1, RTR.3.1, RTR.6.2, RTR.6.3)
 5. Identify essential projections of the body using a radiograph.
(, D4.2, 1.3.1) (2.1.3, RTR.3.1, RTR.6.2, RTR.6.3)
- CAMOSUN COLLEGE CLASS SYLLABUS ver. 1.1
6. Recognize and correct common positioning errors of the essential projections of the body.
(, RTR.2.7, D4.2,, RTR.6.5, RTR.6.6, 1.3.1, RTR.4.3, RTR.6.8) (RTR.6.1, RTR.3.1, RTR.6.2, RTR.6.3)
 7. Recognize and describe patient conditions (i.e. acuity and habitus, etc.) that will require adaptation to the essential projections of the body to obtain an optimal image. (Positioning and technical)
(, 4.1.3, RTR.4.6, RTR.2.3) (2.1.3, 2.1.4, 4.3.3, 4.2.2, 4.2.3, 4.4.1, 4.4.1, RTR.1.1, RTR.6.1, RTR.3.1, E2.3, E2.4)
 8. Perform adaptations to the essential projections of the body in a simulated laboratory experience following all/some of the components of a radiographic exam.
(2.1.9, A6.3, 4.1.3, 3.1.5, 2.2.4, B2.12, 2.2.5, RTR.2.2, , D1.4, RTR.4.6, RTR.2.3, D2.4, RTR.6.9, RTR.2.5, RTR.2.7, D3.2, D4.2, , RTR.6.5, RTR.6.6, 1.3.1, RTR.4.3, RTR.4.4, RTR.6.8)(1.1.2, 1.1, 2.1.9, 3.1.4, 1.3.1, 2.2.4, 2.1.3, 2.1.4, 2.1.5, 1.3.4, 3.1, 2.1.6, 2.1.8, 1.1.5, 4.1.1, 4.2.2, 4.1.2, 4.1.2, 4.3.3, 4.2.2, 2.2.1, B3.5, 4.2.3, 4.4.1, 4.4.1, C1.4, RTR.1.5, RTR.1.1, RTR.1.7, C4.1, RTR.2.4, RTR.6.1, RTR.3.1, RTR.6.2, RTR.4.1,

E2.3, E2.4, RTR.6.3)

9. Name and Identify relevant anatomical landmarks for the essential projections of the body.

(1.3.1) (2.1.3, RTR.3.1, RTR.6.2)

10. Apply knowledge of relational anatomy for each essential projection of the body.

(RTR.2.7, D4.2, 1.3.1, RTR.4.3, RTR.4.4, RTR.6.8) (RTR.3.1, RTR.6.2)

11. Demonstrate proper positioning for essential projections of the body in a simulated laboratory experience.

(2.1.9, , A6.3, 4.1.3, 3.1.5, 2.2.4, B2.12, 2.2.5, RTR.2.2, D1.4, RTR.4.6, RTR.2.3, D2.4, RTR.6.9, RTR.2.5, RTR.2.7, D3.2, D4.2, RTR.6.5, RTR.6.6, 1.3.1, RTR.4.3, RTR.4.4, RTR.6.8) (1.1.2, 1.1, 2.1.9, 3.1.4, 1.3.1, 2.2.4, 2.1.3, 2.1.4, 2.1.5, 1.3.4, 3.1, 2.1.6, 2.1.8, 1.1.5, 4.1.1, 4.2.2, 4.1.2, 4.1.2, 4.3.3, 4.2.2, 2.2.1, B3.5, 4.2.3, 4.4.1, 4.4.1, C1.4, RTR1.5, RTR.1.1, RTR.1.7, C4.1, RTR.2.4, RTR.6.1, RTR.3.1, RTR.6.2, RTR.4.1, E2.3, E2.4, RTR.6.3)

12. Demonstrate radiation protection (ALARA) during simulated laboratory experiences. (Collimation, lead protection, technical factors).

(1.1.2, 1.1, 2.1.9, 1.3.1, 2.2.4, 2.1.3, 2.1.4, 2.1.5, 1.3.4, 2.1.6, 2.1.8, B3.5, 4.2.3, RTR1.5, RTR.1.1, RTR.1.7, C4.1, RTR.2.4, RTR.6.1)

13. Name and identify image evaluation criteria for essential projections of the body using a radiograph.

(2.1.9, , A6.3, 4.1.3, 3.1.5, 2.2.4, B2.12, 2.2.5, RTR.2.2, D1.4, RTR.4.6, RTR.2.3, D2.4, RTR.6.9, RTR.2.5, RTR.2.7, D3.2, D4.2, , RTR.6.5, RTR.6.6, 1.3.1, RTR.4.3, RTR.4.4, RTR.6.8) (2.1.3, RTR.6.1, RTR.3.1, RTR.6.2,)

14. Identify errors on x- rays of the essential projections of the body and list corrective actions required.

(2.1.9, RTR.2.2, , D1.4, RTR.6.9, RTR.2.5, RTR.2.7, D3.2, D4.2, , RTR.6.5, RTR.6.6, 1.3.1, RTR.6.8) (2.1.3, RTR.6.1, RTR.3.1, RTR.6.2,)

15. Perform x-ray examinations of essential and non-essential projections using all/some of the components of a radiographic exam in a simulated lab experience.

(2.1.9, A6.3, 4.1.3, 3.1.5, 2.2.4, B2.12, 2.2.5, RTR.2.2, , D1.4, RTR.4.6, RTR.2.3, D2.4, RTR.6.9, RTR.2.5, RTR.2.7, D3.2, D4.2, , RTR.6.5, RTR.6.6, 1.3.1, RTR.4.3, RTR.4.4, RTR.6.8) (1.1.2, 1.1, 2.1.9, 3.1.4, 1.3.1, 2.2.4, 2.1.3, 2.1.4, 2.1.5, 1.3.4, 3.1, 2.1.6, 2.1.8, 1.1.5, 4.1.1, 4.2.2, 4.1.2, 4.1.2, 4.3.3, 4.2.2, 2.2.1, B3.5, 4.2.3, 4.4.1, 4.4.1, C1.4, RTR1.5, RTR.1.1, RTR.1.7, C4.1, RTR.2.4, RTR.6.1, RTR.3.1, RTR.6.2, RTR.4.1, E2.3, E2.4, RTR.6.3)

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

a) Required

Lampignano, J.P., & Kendrick, L.E. (2021). Bontrager's Textbook of Radiographic Positioning and Related Anatomy 10th ed.). St. Louis, Missouri: Elsevier Mosby.

McQuillen Martensen, K. (2020). Radiographic Image Analysis (5th ed.). St. Louis, Missouri: Elsevier Saunders.

Lampignano, J.P., & Kendrick, L.E. (2020). Workbook: Textbook of Radiographic Positioning and Related Anatomy 10th ed.). St. Louis, Missouri: Elsevier Mosby.

Lampignano, J.P., & Kendrick, L.E.(2020). Bontrager's Handbook of Radiographic Positioning and Techniques (10th ed.). St. Louis, Missouri: Elsevier Mosby.

b) Optional (available for purchase or on reserve in library)

McQuillen Martensen, K. (2020). Workbook for Radiographic Image Analysis (5th ed.). St. Louis, Missouri: Elsevier Saunders.

Long, B.W., Rollins, J.H., & Smith, B.J. (2019). Merrill's Atlas Of Radiographic Positioning & Procedures, Volumes 1,2,3 (14th ed.). St. Louis, Missouri: Elsevier Mosby.

c) Other

Desire-to-Learn (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

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

The following is the schedule for the Positioning portion of MRAD 117 (Brent McMillen and Dan Andrews' portion). Please see D2L for the schedule for the Image Critique portion (Hong Gerow's portion).

WEEK or DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
Sept 4-8 Labour Day	Group Agreement/lab intro/PACS-CH.1	See D2L for more notes and course details
Sept 11-15	Ch.1 -Lab- orientation – assignments/tests/workbooks	
Sept 18-22	Ch.4 Upper Finger to Elbow	
Sept 25-29	Ch.5 Upper Humerus to Scapula	
Oct 2-6 National Day for Truth and Reconciliation	Ch.6 Lower Toe to tib/fib	
Oct 9-13 Thanksgiving	Ch.6 Lower knee	
Oct 16-20	Ch.7 Lower – Pelvis/hip/femur	
Oct 23-27	Ch.11 Skull-sinuses, skull, nasal,orbits	
Oct 30- Nov 3	Ch.8 C/T spine	
Nov 6-10	MRT Week - Review	Midterm Comp
Nov 13-17 Remembrance Day *observed	Ch.9 Lumbar/sacrum/coccyx	
Nov 20-24	Ch.2 Bony thorax-chest	
Nov 27-Dec 1	Ch.10 Bony thorax-ribs	
Dec 4-8	Ch.3,12,13,14 Abdomen	
Dec 11-15	Final Exam and Comp	Final exam and Final Comp

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams). <https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Workbook	10
Lab <i>Positioning Sheets 11%</i> <i>Lab quizzes 11%</i>	22
Passport to Image Critique	10
Module Quizzes	27
Midterms	16
Midterm Comp	Pass/Fail
Cumulative Final Exam	15
Final Comp	Pass/Fail
TOTAL	100%

If you have a concern about a grade you have received for an evaluation, please come and see the relevant MRAD 117 instructor as soon as possible. Refer to the Grade Review and Appeals policy for more information. <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

POSITIONING

Workbook (10%)

Workbooks will be due any time before the closing time for the module quiz. A late workbook will result in no mark. The workbook chapters assigned will coincide with the chapters your quizzes are based on. This is to encourage you to use the workbook as a study tool. To obtain the mark for your workbook you will be asked to drop box images of 2 complete pages out of the assigned pages.

Lab (22%)

Lab marks will be given for lab assignments and simulation exercises.

- Positioning Sheets (11%) – full marks will be given for completed positioning tables.
- Lab quizzes (11%)

IMAGE CRITIQUE

Although Image Critique is a small percentage of the overall grade for MRAD 117, analyzing an x-ray image demands that students integrate knowledge from other courses within the Medical Radiography program. You must keep up to date with course content, studying approximately 2-3 hours a week. As the material in one week will build on content covered in previous weeks, please ask questions as they arise. Do not let struggles linger as you review material. Please see other students, the course instructor, other course instructors or other resources for support. My office hours are posted but I can usually accommodate meeting on short notice.

Textbook Readings

Material for lectures is sourced from the required Image Analysis Textbook (McQuillen). This book is aimed at those who have background knowledge of radiography. You may find reading the textbook quite heavy and technical at first. As the term progresses, you should begin to understand the context in which the textbook refers. Entire chapters are listed in the course schedule, but only read the body regions related to that week's lecture. All test questions will be based on lecture content. All lecture content can be referenced from the textbook.

Passport to Image Critique (10%)

Completion of the Passport to Image Critique booklet allows oral practice of image analysis skills, using correct terminology and technical language while identifying on a radiograph related anatomy. Practicing these skills now will prepare you for clinical practicums where critique of all body parts is required for clinical portfolio completion. Image critique also allows development of strategies to recognize patient positioning errors, and how to fix them. Lab time is given to practice and present oral image critiques to the instructor on a one-on-one basis.

BOTH POSITIONING AND IMAGE CRITIQUE

Module Quizzes (27%)

There will be quizzes following the completion of a module. They are used to assess your level of knowledge as it relates to the positioning and critique 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.

Midterms (16%)

There will be two cumulative midterms worth 8% each. They are used to assess your level of knowledge as it relates to the positioning and critique content from multiple modules. The purpose of the midterm 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.

Final Exam (15%)

The final examination is cumulative and includes material from all modules covered in the MRAD 117 course. This final examination will occur during the regularly scheduled final exam week.

COMPETENCIES

There will be a midterm competency and a final competency. Students will perform specific projections of body parts and complete them in a safe and efficient manner. This must be completed at a level outlined in the D2L course documents. If this is unsuccessful, the student will be asked to repeat the assessment and may not be allowed to continue with the program. Each student must pass the midterm and final comp to pass the course requirements.

SCHOOL OR DEPARTMENTAL INFORMATION

Health & Human Services Student Handbook: <http://camosun.ca/learn/school/health-human-services/student-info/index.html>

General Practicum Information: <http://camosun.ca/learn/school/health-human-services/student-info/practicum-info.html>

Allied Health & Technologies Department Handbooks:

- Certified Medical Laboratory Assistant: <http://camosun.ca/learn/school/health-human-services/student-info/program-info/cmla.html>
- Diagnostic Medical Sonography: <http://camosun.ca/learn/school/health-human-services/student-info/program-info/sono.html>
- Medical Radiography: <http://camosun.ca/learn/school/health-human-services/student-info/program-info/mrad.html>

Students enrolled in Allied Health & Technologies Programs must achieve a minimum of 65% or a “COM” in each of their courses in order to use their course as a pre-requisite and progress in their program.

Students enrolled in Allied Health & Technologies Programs must participate in learning activities that include intimate and direct personal contact with their classmates during supervised practice. Students are training to perform the duties of a healthcare professional. These duties usually require constant, close physical contact with patients and clients. Students may be required to simulate and perform these activities on one another during this course. Students may also be required to use special hygiene practices and protective gear to protect themselves from the transmission of communicable diseases (like COVID-19). Risks associated with learning and performing the physical duties of a healthcare profession cannot be entirely eliminated by any amount of caution or protection. Students who refuse or are incapable of participating and performing these activities due to personal or medical limitations may only continue to participate in their course work when supported by officially registered accommodations or temporary medical advisory.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit camosun.ca/services.

Support Service	Website
Academic Advising	camosun.ca/services/academic-supports/academic-advising
Accessible Learning	camosun.ca/services/academic-supports/accessible-learning
Counselling	camosun.ca/services/health-and-wellness/counselling-centre
Career Services	camosun.ca/services/co-operative-education-and-career-services
Financial Aid and Awards	camosun.ca/registration-records/financial-aid-awards
Help Centres (Math/English/Science)	camosun.ca/services/academic-supports/help-centres

Support Service	Website
Indigenous Student Support	camosun.ca/programs-courses/iecc/indigenous-student-services
International Student Support	camosun.ca/international
Learning Skills	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills
Library	camosun.ca/services/library
Office of Student Support	camosun.ca/services/office-student-support
Ombudsperson	camosun.ca/services/ombudsperson
Registration	camosun.ca/registration-records/registration
Technology Support	camosun.ca/services/its
Writing Centre	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: <https://camosun.libguides.com/academicintegrity/welcome>
Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf> for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc.). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<https://camosun.ca/services/academic-supports/accessible-learning>

Academic Progress

Please visit <https://camosun.ca/sites/default/files/2023-02/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <https://camosun.ca/registration-records/tuition-fees#deadlines>.

Grading Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <https://camosun.ca/sites/default/files/2021-07/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf> and camosun.ca/services/sexual-violence-support-and-education. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-370-3841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Looking for other policies?

The full suite of College policies and directives can be found here: <https://camosun.ca/about/camosun-college-policies-and-directives>

Changes to this Syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.