CAMOSUN COLLEGE	***School of Health & Human Services*** Medical Radiography Technology **Course Name:** **Radiographic Procedures 3** **Course Number:** **MRAD 241**

COURSE OUTLINE

The Approved Course Description is available on the web:
http://camosun.ca/learn/calendar/current/web/mrad.html#MRAD109

Please note:

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

Introduction:

This course is a continuation of Radiographic Procedures 1 and 2. Students will build on their core knowledge from previous courses and clinical practica. The main focus is on specialized examinations of the skeleton and joints (e.g. hips, shoulder girdle, scoliosis exams) to include cranium and contrast studies. In addition, students will study the radiographic examinations of the complete urinary system.

Students will be challenged to apply their existing knowledge and clinical experience to imaging studies of emergency/trauma and operating room procedures. Students will continue to build their skills in critiquing images for diagnostic and technical acceptability.

A requirement for this course is to develop a radiographic exposure chart for various anatomical areas. This chart will reflect requirements of normal versus atypical patient anatomy. The theory will be supported by various laboratory activities and hands on experience to prepare for their final 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.

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1. Instructor Information

(a)	Instructor:	Lynelle Yutani
(b)	Office Hours:	Monday & Thursday 1230 – 1320 or by appointment/email
(c)	Location:	WT 212D
(d)	Phone:	250-370-3995
(e)	Email:	yutaniL@camosun.ca
(f)	Website:	http://online.camosun.ca/

2. Intended Learning Outcomes/Competencies

Letters and numbers following certain learning outcomes indicate the specific competencies covered from the CAMRT Medical Radiography Competency Profile:
Upon completion of this course the student will be able to:

1. effectively use radiographic terminology in communicating with the healthcare team. (A1.1, A2.8, A3.5)

2. interpret physician requests for patient examinations. (A1.1, B2.2, H2.3)

3. apply appropriate interview questions to ascertain patient's history and identity and exam preparation. (A1.1, B2.2, B3.3, B2.4 F1.2, F34-42.3, F34-42.6 F 42.3 H1.2, H2.3, I1.2, I2.3, I2.6, I3.3, I3.5, I3.6, I3.11, I4.3, I4.5, I4.6, I4.12)

4. assess the patient physical, mental, or psychological limitations and provide for alternate methods. (A1.1, B3.1, B3.2, F1.4, F31.3, F31.6, F34-42.6, H1.4, H2.3, H2.6, I1.4, I2.3, I2.6, I3.3, I3.11, I4.3, I4.12)

5. plan the examination based on patient needs and room environment. (A1.1, B2.3, F1.3, F31.4, F31.6, F34-42.3, F34.4 F34-42.4, F34-42.6, F 42.3 F42.4,F 42.6, H2.4, H2.6, H3.7, I2.4, I2.6, I3.4, I3.11, I3.12, I4.4, I4.12)

6. describe course of action for confirmed pregnant patients. (C1.3, E1.12)

7. describe methods to familiarize the patient to the imaging environment. (B2.4)

8. describe the imaging examination to the patient in comprehensible language. (B2)

9. provide patient care prior, during, and post examination. (B3.1, B3.2, B3.5, B5.1, I3.9, I3.15, I4.10, I4.15)

10. understand the influence of age on all examinations. (E1.12)

11. work effectively in a high stress environment such as emergency department and operating room. (A1.1, A3.2, A3.5)

12. provide a radiation safe environment for all members of the department and patients. (C1, C2)

13. demonstrate the correct and efficient use of radiographic, accessory equipment and PACS. (C1, E3.1)

14. accurately select, activate and monitor radiographic exposure settings such as kV, mAs, and distance based on equipment, patient habitus, pathologies and equipment. (E1.1-4, E1.9-.13)

15. describe and practice principles of beam geometry on body anatomy. (F1.1, H1.1, I2.5, I3.10, I4.11)

16. accurately position the patient to demonstrate the required body anatomy of the:
    a. cranium (F34-41.1-6 except for .2)
    b. OR (H3.7, I3.10)
    c. contrast studies (I2-4.1, I3.10, I3.11, I4.9, I4.11)
    d. joints and special studies of the skeleton (F31 except for .2)
    e. trauma (F2-28.6, F29-30.7, F31-42.6, F42.5, G2.6, G3.8, G4.10, G5.10, G6.11, G7.9, H3.6, I2.6)
    f. respiratory system (H2.5, H2.6, H3.6, H3.7)
    g. thoracic cage. (F32.6,F33.6)

17. apply gross relational anatomy and its relationship to external surface landmarks and bodily habitus to positioning requirements. (F31.1, F34-42.1, H2.1, I2-4.1, I2.5, I3.1, I3.10, I4.1, I4.11)

18. evaluate radiographic images for technical quality and diagnostic acceptability using the ten points of critique. (A1.1, E1.14, E2.1-3, F31.7, F34-42.7, H2.7, I2.7, I2.8, I3.13, I3.14, I4.13, I4.14)

19. identify and apply corrective measures as required to resultant image. (A1.1, E 1.14, E2, F31.8, F34-42.8, H2.8)

20. perform venipuncture in a safe manner. (I3.8, K1.7)

21. describe common complications of venipuncture such as collapsed veins, interstitial, and hematomas. (I3.8)

22. select and describe contrast media use, dosage, patient care, and possible side effects for specific examinations. (I3.6, I3.7, I4.6, I4.7)

23. perform urinary catheter insertion. (I4.8)

24. demonstrate professional judgment and organizational skills. (A1.1, A7.1, D1.2, F1.3, H1.3, I1.3, I3.3-.4, I4.4, H1.3)

25. perform quality control tests for field alignment /collimation and clean and visually inspect CR imaging plates. (D1.1)

CAMRT Medical Radiography Competency Profile

3. Learning Resources

Required Textbooks:

Ballinger, P.W., & Frank, E.D. (2012). ***Merrill's Atlas of Radiographic Positions and Radiologic Procedures, Volumes 1, 2, 3 & Workbook*** (12th ed.). Mosby: Elsevier.

McQuillen/Martensen (2011). ***Radiographic Image Analysis***, (3rd ed.). Saunders: Elsevier.

Torres, L.S., Dutton, A.G., & Linn-Watson, T. (2010). ***Patient Care in Imaging Technology*** (7th or 8th ed.). Baltimore: Lippincott Williams & Wilkins.

Carlton, Greathouse, Adler. (2006) ***Delmar's Principles of Radiographic Positioning and Procedures Pocket Guide***, (2nd ed.). Delmar Cengage Learning: Nelson.

Optional Textbooks: (available for purchase or on reserve in library):

Fauber (2013). ***Radiographic Imaging and Exposure***, (4th ed.). Mosby: Elsevier.

McQuillen/Martensen (2011) ***Radiographic Image Analysis, Workbook*** (3rd ed.). Saunders: Elsevier.

Carlton, R.R. & Adler, A.M. (2005). ***Principles of Radiographic Imaging – An Art and a Science*** (4th ed.). Delmar Cengage Learning: Nelson.

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

Medical dictionary – Student's Choice

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.

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: 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	15 %
Critique	20 %
Lab	40 %
Cumulative Final	25 %
TOTAL	**100 %**

Students must achieve a minimum of 65% ***and*** you must pass the Cumulative Final Lab Competency to use this course as a prerequisite.

Assessment Details

Module Quizzes

- Quizzes are usually administered, in class following the completion of a Module or study unit and cover all procedural ***and*** critique content from that Module. Students will have a set amount of time to complete the quiz using the D2L online testing system.
- Questions on all quizzes are randomized for each student. The questions are drawn from a testbank library and are in a variety of formats including: multiple choice, fill-in-the-blank, matching, true/false, short answer, and essay.

Assignments:

- Most late assignments are subject to a ***2% penalty*** subtracted from a student's total **FINAL GRADE** in the course. E. g. Three "late" assignments over the course of the term will result in 6% subtracted from the student's ***final grade*** after all assignments, quizzes, and the final exam are calculated.
- Failing to turn in a completed assignment results in a ZERO mark for the assignment ***in addition*** to the late assignment penalty.
- Incomplete assignments are not accepted.

Exceptions to the Late Assignment Penalty Rule will be made solely at the discretion of the instructor. In mitigating circumstances evidence of acute injury, illness, or other emergency situation may be required. However, this does not guarantee that an exception will be made. When possible, it is highly recommended that students attempt to arrange an extension of an assignment **BEFORE** the due date.

Lab & Comps

Each module includes three Skill Building components:

1. **Written Lab Assignments (50 % of the Lab Component)** – students complete a written assignment describing their directed Skill Building experiences and Simulated Comps, including a self-reflection
2. **Skill Building Labs with Instructor Feedback (50 % of the Lab Component)** – practice activities designed to create simulation proficiency in the educational environment with instructor supervision and feedback

3. **Simulated Competency Evaluations & Lab Final Competency Simulation Assessment (Pass/Fail, *you must pass the Final Simulation Assessment to pass the course*)** – upon completion of the practice activities and written assignment, students will demonstrate their ongoing Simulation Competency (SimComp) through a combination of scenarios, role playing, phantom simulation & exposure, image production, and image critique

- Unless otherwise stated, all lab assignments will be submitted via D2L or Study Share.
- Written Lab Assignments are subject to the ***2% Late Assignment Penalty***.

Assignments will be accessible from within D2L and are posted no later than the first day of the module. Lab assignments will be due following the last competency evaluation for the module by 11:59 PM.

While lab attendance is ***not*** mandatory, students receive marks for completing activities with a lab partner. When an unexplained/unsanctioned lab absence compromises a lab partner's ability to complete a lab assignment, the absent student shall incur a ***2% penalty*** subtracted from a student's total **FINAL GRADE** in the course. In addition, a student missing lab experiences may not achieve full marks for the lab. Consider this carefully when choosing to opt out ***or*** failing to notify your partner, instructor, and/or the program assistant of an unavoidable absence.

Cumulative Final Competency Simulation

- The cumulative final competency evaluates the student's mastery of all the course learning outcomes through a consolidated practical assessment encompassing best practices in patient care, anatomical knowledge, exposure selection, equipment use, documentation, and resultant image critique within the ***simulation*** environment.
- Students randomly choose a Request for Consult to interpret and execute demonstrating the application of learned theory into simulation practice drawn from a cumulative assay of all ten Modules.
- Following the final competency, students receive written and verbal feedback from the evaluating instructor.
- The final competency will be scheduled during the final exam week as determined by the registrar.
- ***Students must successfully pass the cumulative final competency simulation in order to pass the course.***
- Students who are unsuccessful on the cumulative final competency receive an "F" (failing grade) for the entire course and no credit is awarded regardless of their academic marks.

In emergency circumstances, a student may arrange to perform a final competency 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
http://camosun.ca/learn/calendar/current/pdf/academic-policies.pdf)

There is NO written midterm exam for this course.

Course Content and Schedule:

Lecture Days/Times & Room Number:
Rotates between: MRT212 A, B, & C

Procedures: Monday 10:30 AM – 12:20 PM & Thursday 10:30 AM – 11:20 AM
Critique: Tuesday 3:30 PM – 5:20 PM

Lab Days/Times & Room Number:
X-RAY LABS (MRT212 A & B)

Procedures: Wednesdays 9:30 AM – 12:20 PM ***or*** Wednesdays 2:30 PM – 5:20 PM

Students are broken up into four different lab sections or sets and will rotate lab partners each module or unit.

Weekly Course Schedule

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

Week	Dates	Module/Assignments
1	Jan 6-10	Introduction, PACS & Study Share Training
2	Jan 13-17	Introduction to Skull Radiography Readings & PACS/Study Share Critique Project
3	Jan 20-24	Skull Radiography Module
4	Jan 27-31	
5	Feb 3-7	
6	Feb 10-14	Feb 10 STAT
7	Feb 17-21	
8	Feb 24-28	Skeletal Radiography Module – Special Views/Critique Review
9	Mar 3-7	
10	Mar 10-14	
11	Mar 17-21	Urinary Procedures Module
12	Mar 24-28	
13	Mar 31-Apr 4	Venipuncture Module
14	Apr 7-11	
15	Apr 14-18	OR Procedures Module
16	Apr 21-25	Apr 18 STAT & Apr 21 STAT
17	Apr 28-May 2	Trauma/Non-Accidental Trauma Module
18	May 5-9	
19	May 12-16	Review – Begin Final Comps & Exams
20	May 20-23	Complete Final Comps & Exams - May 19 STAT

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:

[X] 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	*Incomplete*: 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	*In progress*: 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 3rd course attempt or at the point of*

CW	*Compulsory Withdrawal:* 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 insomuch 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/_documents/handbook.pdf

8. GENERAL INFORMATION

Suggested Study Time/Study Habits

- Successful students will probably spend 6 – 14 hours outside of class per week studying the content for this course to achieve full marks.
- The instructor and instructional assistant will be available during the scheduled "open lab" hour for students needing additional support mastering the course content.
- Map out a homework schedule; include time for reading and workbooks.
- It is valuable to review your notes within 24 hours following each class to help retain the information.
- Study groups are a highly effective way of learning for many students.

Attendance

- Each student is required to read the X-ray Laboratory Safety Manual and sign an X-ray Laboratory Safety Contract and give it to the instructor or instructional assistant prior to commencing laboratory work in the course.
- Students are expected to be **on time;** tardiness disrupts the class. When students are more than 5 minutes late (and/or the classroom door is shut), they cannot enter the classroom until the class break period.
- If you choose not to ***or*** are unable to attend lecture it is your responsibility to acquire ***all*** information given during a class missed, incl. 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).

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