



School of Health & Human Services
Medical Radiography Technology

Course Name: Clinical Applications in CT
Course Number: MRAD 129

COURSE OUTLINE

The Approved Course Description is available on the web:

<http://camosun.ca/learn/calendar/current/web/mrad.html#MRAD127>

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:

This online course will provide the students with the basic skill set to perform common and specialized Computed Tomography (CT) scan examinations. Emphasis will be placed on practical application and theoretical concepts of CT imaging. Students will cover the patient care requirements and image acceptability criteria. Class discussions/blogs will bring relevance of theory to examinations currently performed in the clinical environment.

The students will focus on basic CT scan protocols for the head, neck, chest, abdomen and pelvis, spine and extremities. Commonly occurring pathologies will be described and identified with supporting images and referenced to normal presentations. The required patient care for prior, during and post examination will be emphasized. Anatomical considerations in axial, sagittal and coronal planes on CT images will be assessed.

There will be an overview of the CT Scanning equipment with a main focus on accessory equipment (injector pumps, patient restraints and supports), emergency support equipment and contrast media (selection, dosage, adverse reactions and patient care).

***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.***

Prerequisites: A minimum of "C+" in MRAD 105, MRAD 115; and "COM" in MRAD 120

Co-requisite: MRAD 125

1. Instructor Information

(a)	Instructor:	Brenda Watson
(b)	Office Hours:	Email response w/in 24 hours during business days (Monday-Friday) Course monitored Monday-Friday 9:00am to 5:00 pm. Virtual hours: Scheduled as needed or upon request (Collaborate web conferencing software)
(c)	Location:	Lansdowne Campus, 212D
(d)	Phone:	250-370-3996
(e)	Email:	watsonb@camosun.ca
(f)	Website:	http://online.camosun.ca/

2. Intended Learning Outcomes/Competencies

The objectives of this course are linked with the CAMRT competencies which are indicated in brackets at the end of each statement.

Upon successful completion, the student will be able to:

1. Apply CT terminology and anatomical landmarks for the following body regions: head, spine, chest/cardiac and abdomen. (K1.1)
2. Describe patient preparation for the CT examination (history taking, urinary function, allergies, existing condition/pathology) to best plan for imaging procedure. (K1.4, K1.5)
3. Interpret and demonstrate an understanding of related medical/imaging disciplines by reviewing reports and/or images of previous studies. (K1.2, K1.3)
4. Provide a non-threatening environment through patient communication of exam to be performed and procedural care (prior, during, and post), use of contrast media, and staff involvement. (K1.18, B1.1, B2.1)
5. Select and prepare the appropriate contrast media. (K1.6)
6. Assess the patient for allergic or contraindication to contrast media use. (K1.5)
7. Describe venipuncture procedure and describe and administer contrast media with or without the use of automatic injection devices as required. (K1.7, K1.9, K1.10)
8. Counsel patients with respect to post procedural care. (K1.18)
9. Perform required patient positioning and provide solutions for patient limitations due to physical and/or psychological needs. (K1.12, K1.13)
10. Select appropriate technical exposure parameters based on examination and patient needs. (K1.12)
11. Process and evaluate sectional images in axial, coronal, and sagittal planes for diagnostic acceptability and anatomical inclusion, and provide solutions as required. (K1.14, K1.15)
12. Assess CT images of various anatomical areas for adequate exposure and analysis in the axial, coronal, and sagittal planes and obtain additional images as required. (K1.17)
13. Identify common pathologies demonstrated by CT for each anatomical area. (K1.1, K1.2, K1.16)
14. Evaluate resultant radiation exposure readings in keeping with current safety standards. (C2.1)
15. Identify and provide solutions for equipment malfunctions. (D2.3)
16. Use all accessory imaging equipment. (K1.12, K1.13)
17. Assist with administration of drug therapy as directed by a physician (K1.8, K1.18)

[CAMRT Medical Radiography Competency Profile](#)

3. Learning Resources

Required Textbooks:

Romans, Lois (2009). *Computed Tomography for Technologists*. Wolters Kluwer – Lippincott Williams & Wilkins

Comprehensive Anatomy and Physiology reference textbooks

Lecture notes

Desire-to-Learn (D2L) Learning Management System

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.

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 from various sources. Additionally, not all details can be covered in the online content, 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: online notes, PowerPoint slides, Textbook Companion Workbooks, and hyperlinks. You may prefer to download online notes ahead of time (when available) and then write your notes directly onto copies of the slides/content. The course content will not be available to you after completion of the term.

4. Student Assessment

Module quizzes (4)	15%
Assignment	20%
Midterm	30%
Cumulative Final	35%
TOTAL	100%

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

Assessment Details

Assignments:

Unless otherwise stated, all assignments will be submitted via D2L and are due midnight of the class due date. If assignments are handed in late, students will incur a 5%day late penalty. It is mandatory that all assignments be submitted for class completion.

Exceptions to this penalty are 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. In such situations, it is highly recommended that students attempt to arrange an extension of an assignment BEFORE the due date, if possible.

Quizzes and Exams:

- There are a total of four quizzes graded at equal weight for a total of 15% of the quiz total mark. Quizzes are administered online via D2L and may be accessed from any computer with internet access *during the window of availability*. **The student IS NOT required to take quizzes for this course in a proctored environment.**
- There is one Midterm exam worth 30% of total grade
- There is one cumulative Final exam worth 35% of total grade` `
- *Missed examinations cannot be made-up except in the case of documented illness (doctor's note).*

In emergency circumstances, a student may write a quiz 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 family crises require the approval of the instructor. When possible, it is preferable that the student makes arrangements in advance. 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:

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

MRAD 129 SCHEDULE 2013				
WEEK	WEEKLY MODULE	GUIDE	Content	Quizzes/Exams/Activities
1	June 10-14		Explore the course and read Introduction to CT and Historical Overview	
2	June 17-21	MODULE 1 MODULE 2	Intro to CT; Historical Overview; Basic Physical Principles and Instrumentation Recent Technical Developments Advantages & Contraindications of CT	<i>Quiz #1 Fri-Sun Module 1</i>
3	June 24-28	MODULE 3 MODULE 4	CT Terminology and CT numbers Techniques, Concepts and Programs	<i>Quiz #2 Fri-Sun Modules 2 & 3</i>
4	July 1-5 (STAT Monday, July 1st)	MODULE 5	Clinical Considerations for the CT Technologist Patient Care Considerations	<i>Quiz #3 Fri-Sun Modules 4 & 5</i>
5	July 8-12	MODULE 6 MODULE 7	CT Image Artefacts Radiation Dose to the patient Skull Anatomy Primer CT Brain	<i>MIDTERM July 11th (Modules 1-5) Time: TBD (Location: Camosun 212C or off-campus)</i>
6	July 15-19	MODULE 7	CT Brain	<i>Quiz #4 Fri-Sun Module 6</i>
7	July 22-26	MODULE 8	CT Sella, CT of the Circle of Willis, CT Temporal Bone, CT of Orbits, CT Sinuses, CT Facial Bones	<i>Self Test #1 Module 7</i>
8	July 29-31, Aug 1-2	MODULE 9	CT Chest and Neck	<i>Assignment #1 Group 1- due Monday July 29th at midnight Self Test #2 Module 8</i>
9	Aug 5-9 (STAT Monday, Aug 5th)	MODULE 10	CT Abdomen and Pelvis	<i>Assignment #1 Group 2- due Tuesday Aug 6 at midnight Self Test #3 Module 10</i>
10	August 12-16	MODULE 11 & 12	CT Spine and Extremities CT Guided Interventional Techniques	<i>Self Test #4 Modules 11 & 12</i>
11	August 19-23		FINAL EXAM August 22, 2012 Time TBD Location: Camosun, 212C or off-campus	

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 death in the family.
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 course

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, worksite, or field placement.
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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

Camosun.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

Suggested Study Time/Study Habits

- Successful students will probably spend at least 4 hours outside of class per week studying the content for this course to achieve full marks. This is in addition to the time it takes to navigate the online content.
- The instructor will be available during “virtual office” hours and by appointment for students needing additional support mastering the course content.
- Map out a homework schedule; include time for reading and discussion.
- Study groups are a highly effective way of learning for many students.

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>



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