Medical Radiography Technology

Radiographic Technique 1

COURSE INFORMATION

COURSE NUMBER	**MRAD 204**
TOTAL HOURS	**125**
THEORY	**75**
PRACTICAL	**50**
PREREQUISITES	**ANPH 202 - Anatomy and Pathology 1** **MRAD 223 - Patient Care 1**
CO-REQUISITES	**None**
ACADEMIC UNIT RESPONSIBLE FOR COURSE	**Allied Health Education**

STUDENTS, PLEASE NOTE

This course contains information that may be required to substantiate learning for professional recognition. It is your responsibility to retain a copy for your own use during your program and after graduation.

COURSE DESCRIPTION

Radiographic Technique 1 presents an introduction to the positioning of patients for radiographic imaging. Through a blend of theory and hands-on experience, importance will be placed upon correct standards of positioning, the positioning nomenclature and how to develop a workflow. The hands-on component includes performing and critiquing radiographic exposures, identifying radiographic anatomy, and developing the cognitive and affective skills to correct mistakes and

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problem solve. The practical component for hands-on learning is conducted at the clinical environment.

COURSE OBJECTIVES

Following completion, the student will be able to:

1. Plan an imaging procedure of the upper limb and shoulder girdle.
   1.1. Provide a safe, clean, and comfortable environment.
   1.2. Prepare the room for a standard examination of the upper limb and shoulder.
   1.3. Verify clinical history through patient interview.
   1.4. Prepare a patient for an examination of the upper limb and shoulder girdle.
   1.5. Establish patient rapport.
   1.6. Review reports and images from related disciplines related to the upper limb and shoulder girdle.
   1.7. Determine the appropriate protocol or positioning requirements associated with the upper limb and shoulder girdle.
   1.8. Set the upper limb and shoulder girdle exposure techniques appropriate to the needs of the individual patient.
   1.9. Ensure the patient's needs are met prior to release from the technologist's care.

2. Evaluate the positioning of a patient to acquire appropriate views and projections of the upper limb and shoulder girdle.
   2.1 Explain the guidelines, terminology, positions, body movements, planes and perspectives used in radiographic technique when describing the upper limb and shoulder girdle.
   2.2 Describe the purpose of specific projections and views of the upper limb and shoulder girdle.
   2.3 Identify topographical landmark locations of the upper extremity and shoulder girdle.
   2.4 Demonstrate proper positioning techniques for the upper limb and shoulder girdle.
   2.5 Produce diagnostic radiographs of the shoulder girdle and upper limb.
   2.6 Critique radiographs of the upper limb and shoulder girdle.
   2.7 Modify positioning examinations of the upper limb and shoulder girdle that are suboptimal.

3. Recommend basic changes in procedure to address individual patient needs.
   3.1 Apply a patient's clinical information to an upper limb and shoulder girdle imaging procedure.
   3.2 Adapt the examination of the upper limb and shoulder girdle to increase patient comfort in difficult situations.
   3.3 Identify strategies that may be used when adapting an examination to facilitate different age groups when imaging the upper limb and shoulder girdle.
   3.4 Simulate care of patients with diminished mobility of the upper limb and shoulder girdle.
   3.5 State the importance of ascertaining the patient's cognitive status.
   3.6 Specify a procedure for patients with a sensory impairment.
   3.7 Protect a possible pregnant patient when imaging the upper limb or shoulder girdle.

4. Evaluate various views and projections of the upper limb and shoulder girdle.

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4.1 Define osteology and basic bone terminology associated with the upper limb and shoulder girdle.
4.2 Describe the different types of joints and joint terminology associated with the upper limb and shoulder joint.
4.3 Identify the anatomy of the upper limb and shoulder girdle on an x-ray.
4.4 Correlate the patient's position with the image of the upper limb and shoulder girdle.
4.5 Characterize an appropriately positioned image of the upper limb and shoulder girdle.
4.6 Compare and contrast different projections of the upper limb and shoulder girdle and their significance.
4.7 Assess the position of the upper limb and shoulder girdle based on anatomy seen.

5. Evaluate the quality of images of the upper limb and shoulder girdle.
   5.1 Critique images of the upper limb and shoulder girdle for positioning.
   5.2 Critique an image of the upper limb and shoulder girdle for technical deficiencies.
   5.3 Evaluate images for appropriate anatomical structures associated with the upper limb and shoulder girdle.
   5.4 Identify when corrective and supplemental images of the upper limb and shoulder girdle are required.

6. Plan an imaging procedure of the lower limb and pelvic girdle.
   6.1 Provide a safe, clean, and comfortable environment.
   6.2 Prepare the room for a standard examination of the lower limb and pelvic girdle.
   6.3 Verify clinical history through patient interview.
   6.4 Prepare a patient for an examination of the lower limb and pelvic girdle.
   6.5 Establish patient rapport.
   6.6 Review reports and images from related disciplines that may be of use when imaging the lower limb and pelvic girdle.
   6.7 Determine the appropriate protocol or positioning requirements for the lower limb and shoulder girdle.
   6.8 Set lower limb and pelvic girdle exposure techniques appropriate to the needs of the individual patient.
   6.9 Ensure the patient's needs are met prior to release from the technologist's care.

7. Evaluate the positioning of a patient to acquire appropriate views and projections of the lower limb and pelvic girdle.
   7.1 Explain the guidelines, terminology, positions, body movements, planes and perspectives associated with the lower limb and pelvic girdle.
   7.2 Describe the purpose of specific projections and views associated with the lower limb and pelvic girdle.
   7.3 Identify topographical landmark locations of the lower limb and pelvic girdle.
   7.4 Demonstrate proper positioning techniques for the lower limb and pelvic girdle.
   7.5 Produce diagnostic radiographs of the lower limb and pelvic girdle.
   7.6 Critique radiographs of the lower limb and pelvic girdle.
   7.7 Modify positioning examinations of the lower limb and pelvic girdle that are suboptimal.

8. Recommend basic changes in procedure to address individual patient needs.
   8.1 Apply a patient's clinical information to an examination of the lower limb and pelvic girdle.

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8.2 Adapt an examination of the lower limb and pelvic girdle to increase patient comfort in difficult situations.
8.3 Identify strategies that may be used when adapting an examination of the lower limb and pelvic girdle to facilitate different age groups.
8.4 Simulate care of patients with diminished mobility of the lower limb and pelvic girdle.
8.5 State the importance of ascertaining the patient's cognitive status when imaging the lower limb and pelvic girdle.
8.6 Specify a procedure for patients with a sensory impairment.
8.7 Protect a possibly pregnant patient when imaging the lower limb and pelvic girdle.

9. Evaluate various views and projections of the lower limb and pelvic girdle.
   9.1 Describe the different types of joints and joint terminology associated with the lower limb and pelvic girdle.
   9.2 Identify the anatomy of the lower limb and pelvic girdle.
   9.3 Correlate the patient position with the image of the lower limb and pelvic girdle.
   9.4 Characterize an appropriately positioned image of the lower limb and pelvic girdle.
   9.5 Compare and contrast different projections of the lower limb and pelvic girdle and their significance.
   9.6 Assess images of the lower limb and pelvic girdle based on anatomy seen.

10. Evaluate the quality of lower limb and pelvic girdle images.
   10.1 Critique an image of the lower limb and pelvic girdle for positioning.
   10.2 Critique an image of the lower limb and pelvic girdle for technical deficiencies.
   10.3 Evaluate images for appropriate anatomical structures associated with the lower limb and pelvic girdle.
   10.4 Identify when corrective and supplemental images of the lower limb and pelvic girdle are required.

COMMON STUDENT LEARNING OUTCOMES

Upon successful completion of Edenbrook College programs, the student will:

Learn
Students will actively and independently acquire, apply, and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.

Think
Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.

Communicate
Students will exchange ideas and information with clarity and originality in multiple contexts.

Integrate
Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.

Act
Students will act purposefully, reflectively, and respectfully in diverse and complex environments.

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EVALUATION

COLLEGE GRADING SYSTEM

The student must achieve an overall minimum grade of 70% on course assessments to be successful.

Students who achieve a failing grade of less than 70% may be eligible to write a supplemental examination to gain course credit. Remedial assistance will be required prior to writing the supplemental examination. Students will not progress in the program without achieving a passing grade in the course.

COURSE EVALUATION

Lab Exams (2)	30%
Mid Term Exam	15%
Final Exam	15%
Lab Work	30%
Professionalism	10%
TOTAL	**100%**

ASSESSMENT RATIONALE/ CRITERIA

Achievement of learning outcomes will be assessed through class participation, class work, group activity, assignment, tests, project, mid-semester examination, and end of semester examination. Assessment will require students to demonstrate understanding and application of all the topics taught.

LEARNING MATERIALS

REQUIRED TEXTS

Lampignano, J. & Kendrik L. (Last Published). Textbook of Radiographic Positioning and Related Anatomy (Current ed.). St. Louis, MO: Elsevier Mosby.

Lampignano, J. & Kendrik L. (Last Published). Workbook for Radiographic Positioning and Related Anatomy (Current ed.). St. Louis, MO: Elsevier Mosby.

Lampignano, J. & Kendrik L. (Last Published). Handbook for Radiographic Positioning and Techniques (Current ed.). St. Louis, MO: Elsevier Mosby

SUGGESTED READINGS

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To be determined by the instructor.

REFERENCE TEXTS AND MATERIALS

To be determined by the instructor.

TEACHING/LEARNING STRATEGIES

Lectures on all the topics, power point presentations, video presentations, classwork, assignments, groupwork. All the students are expected to familiarise themselves with foundational knowledge prior to class. Personal study before and after classes and use of online resources are essential.

COLLEGE POLICY STATEMENTS

Refer to the Edenbrook College Student Handbook for more information on the following policies.

ACADEMIC RESPONSIBILITY – STUDENTS

1. Each student must know the due dates for assignments, tests, and examinations.
2. Each student must maintain their own academic record of work covered each Unit/term.
3. Each student must maintain paper and electronic copies of assignments for the academic year.
4. Each student must arrange academic discussion time with a faculty member to discuss progress.
5. Each student must perform self-evaluation on progress in the course.

PERSONAL CONDUCT – STUDENTS

1. Students must arrive on time for class and be prepared to work when the instructor begins.
2. Students must be courteous to faculty and classmates.
3. Eating in classrooms and clinic is not allowed.
4. Cell phones, Text messengers and other electronic devices must be turned off during class time.

ACADEMIC ADVANCEMENT

At mid-point and at the end of each academic term, the members of the Faculty Team (FT) for the Medical Radiography Technology program meet to review the progress of all students. Following these meetings each student is advised orally and in writing of their status in the program.

Students experiencing difficulty will be counseled regarding assistance available to foster academic success.

At the end of each term, the Medical Radiography Technology Program Instructor and or Director of Education will make recommendations after deliberating on all relevant information. Decisions regarding each student may include (but are not limited to) the following. S/he has:

- Successfully completed all program requirements and can graduate.
- Successfully completed all requirements and is promoted to the next academic level in the program.

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- Been granted supplemental privileges for courses not successfully completed and if successful will graduate or be promoted to the next academic level. **Supplemental privileges are not automatically granted and will be limited in number.**
- Not successfully completed all elements in the academic level but may remain in the program to repeat failed portions and continue toward program completion according to an individualized timetable.
- Experienced such difficulty that repetition of the entire academic level is required, and a space will be provided for the student in the program at the earliest opportunity if the student wants to return.
- Experienced such difficulty that the student is asked to leave the school and if s/he desires readmission must complete the admissions process in competition with other applicants.

ATTENDANCE

Attendance is mandatory – The College reserves the right to determine whether absences are excused or unexcused (may affect student funding) and to request any medical evidence that may be required. Student tardiness is unacceptable, and students are expected to demonstrate professional behaviour at all times, in class or on a clinical placement. Students are entirely responsible for catching up on their own or for missed material and demonstrations. A doctor's note may be requested for each absence.

Absence from Missed Test/Assignment Due Protocol

Upon return to school, the student is to provide a doctor's note or approved excusable absence to the instructor prior to admission to the make-up test/submission of late assignments. Failure to submit an approved excuse within 5 school Units upon return, the student will receive a zero for all missed, tests and late assignments.

Absence from Class Protocol

The College monitors attendance closely. A student who is absent from a class more than 3 times in a term, will be identified at risk and required to submit a doctor's note or approved excusable absence to their instructor(s) and the Program Instructor prior to readmission to the class.

Make-Up Procedure

All students are expected to take exams at the scheduled time. Make-up exams will be arranged only in recognized emergency cases. The instructor must be informed before or during the exam, to be eligible. Refer to the Edenbrook College Student Handbook for protocols. Quizzes are taken in class and at the time specified by the instructor. Late students will be given no extra time for the quiz. Quizzes given in the classroom cannot be made-up.

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CHEATING AND PLAGIARISM

Any evidence of cheating will result in a failure for the course. Evidence of plagiarism will result in a failure for all students involved in the plagiarism. Plagiarism is turning in the work of someone else as if it was your own. When working on assignments in a group setting, students must submit their assignments using their own words. Identically worded assignments submitted by multiple students are acts of plagiarism.

MOBILE PHONES

Mobile phones are to be turned completely OFF while class is in session. Please use laptop computers responsibly. Web browsing, messaging, emailing, and recording are otherwise prohibited during class. Students who abuse the privilege of using their laptops will be asked to put it away for the duration of the class.

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