



# MEDI13007 *Fundamentals of Radiographic Technique*

## Term 1 - 2021

Profile information current as at 26/04/2024 02:36 am

All details in this unit profile for MEDI13007 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this unit you will apply your foundation knowledge of radiation science and human anatomy to the study of radiographic imaging. You will learn the principles of image geometry and image formation that underpin radiographic technique and apply this technique to the acquisition of standard projection radiographs of the musculoskeletal system. You will learn to position the beam, patient and image receptor to produce standard radiographic appearances. You will be able to perform basic critique of the images and discuss the anatomical structures demonstrated on the images.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisites: MEDI12008 CHIR12004 CHIR12008

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 1 - 2021

- Brisbane
- Mackay
- Sydney

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Online Quiz(zes)**

Weighting: 15%

#### 2. **On-campus Activity**

Weighting: Pass/Fail

#### 3. **Practical Assessment**

Weighting: 45%

#### 4. **Online Test**

Weighting: 40%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Unit evaluation and student emails

**Feedback**

Students enjoyed the lectures and found them engaging and easy to follow.

**Recommendation**

Maintain and update lecture presentations as required.

#### Feedback from Unit evaluation and student emails

**Feedback**

Some students would have preferred to have formative quizzes every week in addition to the scheduled tutorials.

**Recommendation**

Review the availability of formative weekly quizzes and update where necessary.

#### Feedback from Unit evaluation

**Feedback**

Students appreciated the organisation of the Moodle site.

**Recommendation**

Maintain organisation of Moodle site and ensure ease of navigation.

## Unit Learning Outcomes

**On successful completion of this unit, you will be able to:**

1. Discuss the fundamental concepts of radiographic technique
2. Apply the fundamental concepts of radiographic technique to the production of projection radiographs
3. Perform set-ups of imaging equipment and patients to produce skeletal radiographs safely and effectively at an advanced beginner level
4. Discuss the radiographic appearances of anatomical structures on standard skeletal projection radiographs
5. Critique radiographic images at an advanced beginner level.

This unit supports students in the attainment of the following Competency Standards of the Council on Chiropractic Education Australasia:

**1.1 Complies with legal and ethical requirements**

Adheres to relevant legislation, common law, codes, standards and other policy regulating chiropractic conduct and practice

**1.4 Demonstrates professional integrity**

Applies principles of risk management and quality improvement to practice

**3.3 Obtains the results of clinical, laboratory and other diagnostic procedures necessary to inform care**

Refers for or conducts imaging where clinically indicated

**3.5 Critically analyses information available to generate a clinical impression**

Demonstrates knowledge of diagnostic imaging techniques and procedures, including indications and limitations of available imaging modalities

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes



## Textbooks and Resources

### Textbooks

MEDI13007

#### Prescribed

#### Yochum and Rowe's Essentials of Skeletal Radiology

Edition: 3rd (2004)

Authors: Yochum T, Rowe L (Ed)

Lippincot, Williams and Wilkins

Philadelphia , Pa , United States of America

ISBN: 9780781739467

Binding: Hardcover

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

**All submissions for this unit must use the referencing styles below:**

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Karen Finlay** Unit Coordinator

[k.finlay@cqu.edu.au](mailto:k.finlay@cqu.edu.au)

## Schedule

### Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to radiographic technique Technical factors, the beam and anode heating	Fauber Ch 6 Exposure Technique Factors Fauber Ch 8 Exposure Technique Selection	

### Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Beam geometry	Fauber Ch 6 Exposure Technique Factors	

### Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Principles of image critique	Fauber Ch 9 Image Evaluation	

### Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiography workflow Introduction to radiographic imaging of the spine	Readings presented on Moodle site	Online quiz opens at 8am AEST on Monday 29th March and closes at 11.30pm AEST on Wednesday 31st March.

#### Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the cervical spine	Chapter 1 pages 22 - 39 & pages 48,49	

#### Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic

#### Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the lumbar spine	Chapter 1 pages 50 - 79	

#### Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the thoracic spine, chest and ribs	Chapter 1 pages 40 - 47	

#### Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the pelvis and hips	Chapter 1 pages 80 - 81 & 84 - 89	

#### Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the shoulder girdle	Chapter 1 pages 134 - 145	

#### Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the hand, wrist and elbow	Chapter 1 pages 146 - 171	

#### Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Radiographic imaging of the foot, ankle and knee	Chapter 1 pages 90 - 129	

#### Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Consolidation		

#### Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Image Portfolio and Evaluation</b> Due: Review/Exam Week Monday (7 June 2021) 5:00 pm AEST

#### Exam Week - 14 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

The unit coordinator for MEDI13007 is Karen Finlay.

During the term I may be off campus or teaching another unit. For this reason the preferred method of initial contact is email.

E: k.finlay@cqu.edu.au

As a 6-credit unit you are expected to spend 10 to 12 hours per week on this unit. It is important to budget your time and maintain adequate contact with the unit. A suggested weekly time budget is shown below.

Pre-reading and preparation - 2 hours per week

Watching lecture presentations and making notes - 3 hours per week

Preparing for and attending tutorials - 2 hours per week

Attending imaging labs and VR practice - 4 hours per week

Studying for and completing assessment tasks - 18 hours over the course of the unit

## Assessment Tasks

### 1 Online Quiz

#### Assessment Type

Online Quiz(zes)

#### Task Description

It is important that you understand the underlying principles of radiographic imaging to enable you to image patients safely and effectively. This online test will assess your understanding prior to you applying those principles in skills labs.

You will complete an online quiz which will assess your knowledge and understanding of concepts covered in weeks 1 - 3 of term. The quiz will have a range of question formats. Question tasks will be similar to the type you will practice in tutorials and formative quizzes. Some answers may require diagrams to be labelled. Calculations may be required.

The online quiz will be time-limited, and once you open the quiz you will not be able to pause or re-start it. Once opened the quiz will remain open for 45 minutes and will then automatically close. Any unanswered or unsaved responses will receive zero marks.

The quiz must be written within the allocated time. In the absence of an approved extension there will be no opportunity for you to complete this assessment at a later time and you will receive a score of zero for this assessment task.

You must undertake this quiz as individuals and not with classmates or others. As with all other University assessments, colluding with other students on a non-group work task is considered academic misconduct and will be dealt with in accordance with the Student Academic Integrity Policy.

As an open book quiz, you may use your notes and text book, but be aware of the time-limited nature of this assessment.

#### Number of Quizzes

1

#### Frequency of Quizzes

#### Assessment Due Date

The quiz will open at 8am AEST on Monday 29th March and will close at 11pm AEST on Wednesday 31st March.

#### Return Date to Students

The results will be released two weeks after the test has closed.

#### Weighting

15%

#### Assessment Criteria

Your responses are scored on the following criteria:

- correct use of terminology
- factual correctness of presented material

- relevance of stated content to the question asked
- application of foundation concepts to the question asked
- clarity, thoroughness and completeness of explanations

The marks allocated for each question will be indicated in the question information.

### Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

Online

### Learning Outcomes Assessed

- Discuss the fundamental concepts of radiographic technique

### Graduate Attributes

- Communication

## 2 Image Portfolio and Evaluation

### Assessment Type

On-campus Activity

### Task Description

It is important that Chiropractors have the necessary skills and knowledge to safely and effectively image patients. This involves patient positioning, equipment set-up and appropriate technical factor selection. Another important aspect is the ability to evaluate resultant images for technical sufficiency.

This portfolio documents your hands-on developmental experience in radiographic technique and in your image assessment skill.

From week 5 onwards, using the Skilitics VR system, you must produce two images from those taught in lecture presentations each week. You must evaluate these images using the proforma provided on the Moodle site. The images and evaluations must be submitted via the Moodle site by the end of term. In total you must produce fourteen images and associated image evaluations. The format of the submission will be posted on the unit Moodle site.

### Assessment Due Date

Review/Exam Week Monday (7 June 2021) 5:00 pm AEST

### Return Date to Students

Feedback will be provided within 2 weeks of submission

### Weighting

Pass/Fail

### Minimum mark or grade

Pass

### Assessment Criteria

Once submitted two image evaluation proformas will be chosen randomly for assessment. You will not be informed in advance which examinations will be assessed.

This portfolio is assessed on the following aspects:

- Completeness relative to the requirements stated in the Task Description regarding the number and type of images and their evaluations
- Correctness and completeness of image evaluations
  - Of the 14 submitted image evaluations, 2 will be selected at random for detailed scoring.
  - Each scored image evaluation requires 24 information items, each of which is worth 1 mark, for a total of 48 possible marks for the two evaluations.

To attain a clear pass in this assessment task, your portfolio must:

- Be complete in content
- Score a minimum of 38 out of 48 on the two scored evaluations



If your initial submission is complete but your evaluation score is between 24 – 37, you will be afforded one further opportunity to achieve a pass grade for this assignment. You will then be required to produce two additional images (of projections not already submitted) and their evaluations. You must score at least 38/48 on this second submission.

If your initial submission is not complete in content and/or your image evaluation score is below 24/48, you will not be allowed any further submission and your score on this assessment task will be a Fail.

### **Referencing Style**

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### **Submission**

Online

### **Learning Outcomes Assessed**

- Perform set-ups of imaging equipment and patients to produce skeletal radiographs safely and effectively at an advanced beginner level

### **Graduate Attributes**

- Communication
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

## **3 Practical Assessment**

### **Assessment Type**

Practical Assessment

### **Task Description**

In this unit you are developing the knowledge and psychomotor skills required for correct radiographic positioning and use of radiographic equipment. This skills are prerequisites to your clinical practice in your Masters study, during which you will perform radiographic examinations on clinic patients.

In this assessment, you will perform two high fidelity simulations of radiographic imaging, one for the spine and the other for an extremity. This assessment may be performed on simulation x-ray equipment or using the full immersion virtual reality (VR) system, according to the availability of equipment at your campus.

For your assessment, you will be presented with an imaging referral for two specific projections selected at random from the set of projections studied during the term. You will have 10 minutes to complete the simulated radiographic examination. This includes the following tasks:

- Interpretation of the referral
- Set-up of the equipment
- Positioning of the patient
- Selection of technical parameters at the control panel
- Generating the 'exposure' after suitably instructing your patient

Please note:

- This is a timed assessment. You will have 10 minutes to complete the practical tasks. If you have not completed the tasks within 10 minutes, the assessment will be stopped and you will be marked based on your performance to that point.
- This assessment task will be recorded using a video camera to enable moderation.
- You must complete the tasks without reference to any guidance resources such as notes, texts or electronic devices.
- If on your first attempt you do not achieve the minimum score you will be given one additional opportunity to perform this assessment task to the required level
- A detailed marking rubric demonstrating the requirements of the practical aspects of the assessment are posted on the unit Moodle site.

### **Assessment Due Date**

The assessment will be scheduled during week 13

## Return Date to Students

within 2 weeks of the final assessment being completed

### Weighting

45%

### Minimum mark or grade

50%

### Assessment Criteria

You will be marked on the following criteria:

- Correct position of the person or limb relative to the required projection
- Correct position and centring of the x-ray tube relative to the required projection
- Accurate and safe use of the equipment

### Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

Offline

### Learning Outcomes Assessed

- Apply the fundamental concepts of radiographic technique to the production of projection radiographs
- Perform set-ups of imaging equipment and patients to produce skeletal radiographs safely and effectively at an advanced beginner level
- Critique radiographic images at an advanced beginner level.

### Graduate Attributes

- Communication
- Problem Solving

## 4 Online Test

### Assessment Type

Online Test

### Task Description

You will complete a 2-hour online test during the university examination period, at a time scheduled by the School of Health, Medical and Applied Science. The purpose of this test is for you to demonstrate your understanding and ability to apply the concepts and correct use of the terminology from all weeks of the unit content.

You will be given a series of radiographic images and/or photographs with associated questions. The questions may include naming anatomy on the image, critiquing the image in terms of technical sufficiency, suggesting ways to improve the technical sufficiency of the image, critiquing the patient position relative to a stated projection, or explaining the science underpinning why a stated projection is completed as it is. The number of marks available for each question will be indicated on the test.

The quiz must be written within the allocated time. In the absence of an approved extension there will be no opportunity for you to complete this assessment at a later time and you will receive a score of zero for this assessment task.

You must undertake this quiz as individuals and not with classmates or others. As with all other University assessments, colluding with other students on a non-group work task is considered academic misconduct and will be dealt with in accordance with the Student Academic Integrity Policy.

As an open book quiz, you may use your notes and text book, but be aware of the time-limited nature of this assessment.

### Assessment Due Date

The final online test will be administered during the University's Exam period at a date/time set by the School of Health, Medical and Applied Science. All students will be required to sit the test during the same 120 minute period

**Return Date to Students**

Scores will be released after certification of grades

**Weighting**

40%

**Minimum mark or grade**

50%

**Assessment Criteria**

You will be marked on the following criteria:

- correct use of terminology
- factual correctness of presented material
- relevance of stated content to the question asked
- application of foundation concepts to the question asked
- clarity, thoroughness and completeness of explanations

The marks allocated for each question will be indicated in the question information.

**Referencing Style**

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Discuss the fundamental concepts of radiographic technique
- Apply the fundamental concepts of radiographic technique to the production of projection radiographs
- Discuss the radiographic appearances of anatomical structures on standard skeletal projection radiographs
- Critique radiographic images at an advanced beginner level.

**Graduate Attributes**

- Communication
- Problem Solving

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem