



# MEDI12008 *Fundamentals of Radiographic Imaging*

## Term 2 - 2019

Profile information current as at 24/04/2024 09:00 pm

All details in this unit profile for MEDI12008 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

The unit will provide you with the foundational knowledge needed for interpretation of radiographic image appearances and safe and effective use of digital radiographic imaging systems. You will learn the theoretical concepts of radiation production and control, radiation interactions in matter, image acquisition and digital image processing. You will apply these core concepts in relating acquisition and processing parameters to patient dose and image quality. You will learn how and why to limit radiation exposure through the study of radiation bioeffects and best practice in radiation protection.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisite: MEDI11002 Physics for Health Sciences Antirequisite: MEDI12002 Science & Instrumentation 1

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 2 - 2019

- Brisbane
- Mackay
- Melbourne
- 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. **On-campus Activity**

Weighting: Pass/Fail

#### 2. **Report**

Weighting: 30%

#### 3. **In-class Test(s)**

Weighting: 20%

#### 4. **Examination**

Weighting: 50%

### 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 coordinator reflections and student feedback.

**Feedback**

As the lab equipment was quite different across the three campuses and there was some variation in how the instructions were interpreted, the resultant images varied in appearance and quality across the groups. While this did not affect assignment scores, it did impact how the images could be used for the assignment.

**Recommendation**

Modify the instructions as needed to accommodate the differences in available equipment at each campus, and clarify with lab supervisors the process and expected outcomes for each lab segment.

#### Feedback from Student correspondence with unit coordinator

**Feedback**

The lab activities were intended to include the students obtaining their lab image files directly after their labs. At one campus, some lab groups did not receive all of their images even after extensive delays.

**Recommendation**

Ensure that all lab supervisors are able to retrieve lab images from the imaging system and that all students are aware of their need to obtain their images during the sessions.

#### Feedback from Student feedback, unit coordinator observations.

**Feedback**

A key term in the assignment instructions was not clearly understood by students. The report template was useful but students required further guidance in how to complete it.

**Recommendation**

Provide a more detailed guidance sheet to accompany the report template and offer a clarification session earlier in the term relative to the assignment due date.

#### Feedback from Student informal comments during the term, instructional team feedback

**Feedback**

Student attendance at on-campus tutorials continues to be low (about 30% on average). The inclusion of a weekly videoconferenced (Zoom) tutorial is useful, particularly with the recording.

**Recommendation**

Continue to offer weekly tutorials, particularly in online format.

## Unit Learning Outcomes

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

1. Outline the construction, operation and clinical use of digital radiographic image acquisition and processing systems.
2. Discuss the underlying physical principles and the controls involved in x-ray beam production, emission, interactions in matter and capture at the image receptor.
3. Apply the concepts of beam control, differential attenuation, image geometry and scatter control to the production of a projection radiograph.
4. Relate parameters of image acquisition and digital processing to visibility of information on digital radiographic images.
5. Present reasoned adjustments to image acquisition parameters to modify patient dose and image quality.
6. Outline core concepts of bioeffects of low-level ionising radiation and current scientific theories of radiation risk.
7. Discuss safe practices and radiation protection standards applicable to clinical diagnostic radiography.

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

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
<b>1 - On-campus Activity - 0%</b>			•				
<b>2 - Report - 30%</b>		•	•	•			
<b>3 - In-class Test(s) - 20%</b>	•	•		•			
<b>4 - Examination - 50%</b>	•				•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Communication	•	•	•	•	•	•	•
2 - Problem Solving			•	•	•		•
3 - Critical Thinking							
4 - Information Literacy	•	•		•		•	•
5 - Team Work							
6 - Information Technology Competence	•			•			
7 - Cross Cultural Competence							
8 - Ethical practice							•
9 - Social Innovation							
10 - Aboriginal and Torres Strait Islander Cultures							

### Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - On-campus Activity - 0%				•		•				
2 - Report - 30%	•			•						
3 - In-class Test(s) - 20%	•	•								
4 - Examination - 50%	•	•						•		

## Textbooks and Resources

### Textbooks

MEDI12008

#### Prescribed

#### Radiographic Imaging and Exposure

Edition: 5th (2017)

Authors: Terri L Fauber

Elsevier

St. Louis , Missouri , United States

ISBN: 9780323356244

Binding: Paperback

#### Additional Textbook Information

Students may purchase the hard copy textbook from the University Bookshop. The e-version is not available from the publisher for distribution in Australia. However, the e-book may be purchased through Amazon's Kindle store.

[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 style: [American Psychological Association 6th Edition \(APA 6th edition\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Caroline Falconi** Unit Coordinator

[c.falconi@cqu.edu.au](mailto:c.falconi@cqu.edu.au)

## Schedule

### Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to radiography <ul style="list-style-type: none"><li>• The radiograph as an attenuation map</li><li>• introduction to radiographic terminology</li><li>• overview of the imaging process</li><li>• introduction to attributes of a radiographic image</li><li>• viewing radiographic images</li></ul>		Tutorial on using learning goals and writing definitions

### Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
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X-ray beam production and control

- x-ray tube basic construction and operation
- controls of the emitted beam's quantity and quality
- introduction to technical factor settings

Fauber Chapter 2

Tutorial on Week 1 content

### Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
X-ray interactions in matter <ul style="list-style-type: none"> <li>• attenuation</li> <li>• attenuation processes</li> <li>• factors affecting quantity of attenuation</li> <li>• fractional attenuation and transmission</li> <li>• differential attenuation</li> </ul>	Fauber Chapter 3 Additional readings as posted on unit Moodle site	Tutorial on Week 2 content Timetabled practical laboratory session as allocated

### Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Control of spatial information <ul style="list-style-type: none"> <li>• image geometry and projections through ray paths</li> <li>• distortions of spatial information (magnification, shape distortion, position distortion)</li> <li>• spatial resolution</li> <li>• unsharpness</li> <li>• control of geometric unsharpness</li> </ul>	Fauber Chapter 3 Additional readings as posted on unit Moodle site	Tutorial on Week 3 content Timetabled practical laboratory session as allocated

### Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Control of contrast information <ul style="list-style-type: none"> <li>• subject contrast</li> <li>• use of beam energy to control subject contrast</li> <li>• quantum mottle</li> <li>• use of beam quantity to control mottle</li> <li>• scatter behaviour</li> <li>• impact of scatter on contrast resolution</li> </ul>	Fauber Chapters 3, 6 & 7 Additional readings as posted on unit Moodle site	Tutorial on Week 4 content

### Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
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### Week 6 - 26 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Control of scatter <ul style="list-style-type: none"> <li>• factors affecting the magnitude of scatter produced</li> <li>• collimation</li> <li>• grids</li> <li>• air gap technique</li> </ul>	Fauber Chapter 7 Additional readings as posted on unit Moodle site	Tutorial on Week 5 content In-class test during Monday morning timetabled practical class as allocated

### Week 7 - 02 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
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Principles of clinical radiographic imaging <ul style="list-style-type: none"> <li>• standardisation of projections and positioning</li> <li>• technical factors and technique charts</li> <li>• equipment limitations</li> <li>• image evaluation</li> </ul>	Fauber Chapters 6, 8 & 9	Tutorial on Week 6 content
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### Week 8 - 09 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Digital image fundamentals <ul style="list-style-type: none"> <li>• digital image and image file properties</li> <li>• overview of the imaging process</li> <li>• image processing</li> <li>• control of spatial and contrast resolution of digital images</li> </ul>	Fauber Chapter 4 Additional readings as posted on unit Moodle site	Tutorial on Week 7 content  <b>Radiographic Fundamentals Report</b> Due: Week 8 Thursday (12 Sept 2019) 4:00 pm AEST

### Week 9 - 16 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Digital imaging technology <ul style="list-style-type: none"> <li>• image receptor systems</li> <li>• image display and viewing</li> <li>• display adjustments (windowing, zoom)</li> <li>• image optimisation using processing</li> <li>• dose optimisation using digital radiograph</li> <li>• exposure index</li> </ul>	Fauber Chapter 4 Additional readings as posted on unit Moodle site	Tutorial on Week 8 content

### Week 10 - 23 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Radiation biology <ul style="list-style-type: none"> <li>• dose metrics (exposure, absorbed dose and effective dose)</li> <li>• Bioeffects of ionising radiation (deterministic and stochastic effects)</li> <li>• Dose response theories</li> </ul>	Additional readings as posted on unit Moodle site	Tutorial on Week 9 content

### Week 11 - 30 Sep 2019

Module/Topic	Chapter	Events and Submissions/Topic
Radiation protection <ul style="list-style-type: none"> <li>• ALARA principle</li> <li>• legislation and professional responsibilities</li> <li>• justification, limitation and optimisation</li> <li>• best practices in dose management</li> <li>• considerations for paediatric and pregnant patients</li> <li>• radiation occupational health and safety</li> </ul>	Fauber Chapter 1 & Appendix C Additional readings as posted on unit Moodle site	Tutorial on Week 10 content

### Week 12 - 07 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic
• Revision and consolidation		Tutorial on Week 11 content

### Review/Exam Week - 14 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic

### Exam Week - 21 Oct 2019

Module/Topic	Chapter	Events and Submissions/Topic



## Term Specific Information

I'm Caroline Falconi, your unit coordinator as well as Head of Course for Medical Imaging. I can be reached by email at [c.falconi@cqu.edu.au](mailto:c.falconi@cqu.edu.au) or by phone at 07 4940 7447. Email is usually the best way to connect as I'm often out of my office. I'm also the tutor at Mackay campus for this unit. Your tutor at Brisbane campus is Dr Ken Reckelhoff and your tutor at Sydney campus is Dave Floro.

This unit is delivered as an internal unit across three campuses by a cross-disciplinary team to provide expertise from both the radiographic and chiropractic perspectives. You are provided with a set of learning goals for each week's topics to communicate the breadth and depth of the knowledge and skills you are required to demonstrate in the unit assessments. Lectures are provided as pre-recorded videos via the unit Moodle site. You will have weekly face-to-face tutorials timetabled at each campus. Tutorials are interactive sessions where your participation enables you to check your understanding of and your ability to apply the week's concepts and for you to build your skills in responding to test questions. Your regular participation strongly supports your success in the unit. While online tutorials will be recorded, these recordings are not intended to replace your active participation in live sessions.

**Note that all students must attend 4 hours of practical lab activity that are timetabled into Weeks 3 - 4.**

These are hands-on sessions intended both to help you connect fundamental concepts to practice and also for you to acquire the set of radiographic images you will need to complete your written report which is Assessment 2. You must attend the timetabled session and participate in the acquisition of the images in order to use them in your assessment. These practical sessions take place in the x-ray suite affiliated with your campus (Mackay Ooralea Medical Imaging clinical simulation laboratories, Brisbane Chiropractic clinic and Sydney Chiropractic clinic). See Assessment Task 1: Image Production Practical for further details.

Students are expected to spend on average 10 - 12 hours of time each week in their study activities for this unit. A suggested time budget for your weekly study is:

- 2 - 2½ hours for watching recorded lectures and taking notes
- 1 - 1½ hours for completing assigned reading
- ½ - 1 hour for completing other posted learning activities
- 2 - 2 ½ hours for creating study notes to meet weekly learning goals using lectures and readings
- ½ hour for adding week-specific content to your exam 'cheat sheet'
- 1 hours for applying weekly content using posted end-of-chapter questions
- ½ - 1 hour for working on posted tutorial questions in preparation for tutorial
- 1 hour for participation in tutorial
- 1 - 2 hours for assignment preparation and/or revision for final examination

For the final examination, you will be allowed to take the following materials into the examination room:

- non-programmable calculator
- a single A4 sheet of paper of notes of content that is of your choosing. This may be computer-generated and/or hand-written, and may include (but is not limited to) text, photos, drawings and/or figures. Any colours of ink may be used. Both sides of the page may be used.

## Assessment Tasks

### 1 Image Production Practical

#### Assessment Type

On-campus Activity

#### Task Description

Performing radiography is part of the chiropractor's scope of practice. This unit is providing foundation knowledge and skill that support your ability to perform radiography safely and effectively. This hands-on activity enables you to apply key theory concepts to producing radiographs so that you can see cause and effect.

**You will attend 4 hours of timetabled practical activity in the x-ray suite at your campus.** During the practical, you will work with your classmates under the direct supervision of your instructor to carry out the specific instructions for a series of lab exercises, with the outcome of producing the set of digital radiographic images you will use for your written report in Assessment 2.

You must use the Student Allocator system to sign up for your specific practical session at your campus. Each session has space for up to 8 students, so if you do not allocate promptly, you will limit the date/time options available to you.

All student attendance and participation will be documented by the supervising instructor.

You will follow radiation safety principles and practices, adhering to the requirements of the facility's Radiation Safety Protection Plan. As the practical takes place in a patient care environment, you will be required to follow the facility-specific dress code (including professional attire and flat shoes with closed toe and heel).

Attendance and participation notes will be taken by your lab instructor at each session. Your instructors will monitor your compliance with occupational health and safety practice. If your lab action or behaviour puts you or others at risk of harm, you may be removed from the lab activity. This may result in you being unable to complete the assessment.

**This is a pass/fail assessment item that must be completed by the specified due date.** If you have extenuating circumstances that cause you to be unable to attend your practical at your timetabled date and time, you must apply for an assessment extension. See Section 5 of the University's Assessment Policy and Procedure for details regarding assessment management, specifically around assessment extension. If your request for an extension is approved, you will be assigned a new practical date/time which will be set according to the availability of the imaging facilities and supervising staff. It is your responsibility to ensure that you can attend at that new assigned date/time. In the absence of an approved extension, you will not be able to complete this task at a later date and would thus receive a Fail grade for the assessment task, which would result in a Fail grade for the unit.

#### **Assessment Due Date**

Must be completed during the allocated timetabled practical session.

#### **Return Date to Students**

Week 6 Monday (26 Aug 2019)

#### **Weighting**

Pass/Fail

#### **Minimum mark or grade**

Pass

#### **Assessment Criteria**

To attain a pass in this assessment, you must:

- attend the 4 hours of practical lab,
- adhere to the posted dress code as needed for access to the clinical facility,
- comply with occupational health and safety requirements of the facility and
- participate in the completion of tasks associated with the set of laboratory exercises.

#### **Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)

#### **Submission**

No submission method provided.

#### **Submission Instructions**

Your lab session instructor will document your compliance with the assessment criteria.

#### **Learning Outcomes Assessed**

- Apply the concepts of beam control, differential attenuation, image geometry and scatter control to the production of a projection radiograph.

#### **Graduate Attributes**

- Information Literacy
- Information Technology Competence

## 2 Radiographic Fundamentals Report

#### **Assessment Type**

Report

#### **Task Description**

As future chiropractors, you will need to be able to make reasoned judgment in performing radiographic examinations to optimise image quality and patient dose as appropriate to the individual patient and presentation. To do that, you need a solid understanding of the foundation principles of radiography and how they control image appearances.

**You will create an electronic report that is an illustrated discussion of fundamental radiographic concepts.**

These are concepts related to beam control, differential attenuation, image geometry and scatter control.

In your timetabled practical session (Assessment 1), you will work with your classmates to carry out a set of structured experiments. These experiments enable you to apply fundamental concepts of radiographic imaging in a controlled manner. In doing so, you will produce a set of digital radiographs that can be used to illustrate these concepts. (These images MUST be included in the report.)

You will then use the Word template that will be provided on the unit Moodle site to structure and complete your report. Your report will include one section for each core concept. In each section, you are to include:

- a discussion of the underlying principles that relate to this concept
- one or more digital radiographs from your practical session that illustrate the concept
- a description of the radiographic image acquisition (e.g. what object was imaged, the imaging set-up parameters, technical factors used)
- an identification and explanation of the specific aspects of the selected radiograph's image appearances that illustrate the concept
- a statement of how the visibility and accuracy of representation of imaged structures is impacted by the concept

You may provide diagrams and/or photographs to illustrate your explanations and discussions. Your report will also include a glossary of all key technical terms that you have used in your discussions and explanations.

In addressing the required areas of discussion, you are expected to use resources to support your responses. These may include your text, resources that are provided on the unit Moodle site and/or others that you may find. (Note that lecture slides are visual accompaniment to a spoken presentation, so the slides are not appropriate to use as a standalone resource for this assessment). Academic integrity standards require that you do not plagiarise, so you are required to acknowledge the ideas and words of others using correct referencing technique. Your report must be submitted as a Word or pdf document that can be analysed by Turnitin. Any incidents of plagiarism will be dealt with in accordance with the University's Academic Misconduct Procedure.

Note that although you will be working with your classmates to acquire the images for this assessment, this report is to be completed individually. As for all assessments, colluding with other students on a non-group work task is considered academic misconduct and will be dealt with in accordance with the Academic Misconduct Procedure.

Further details on specific aspects of each core concept you must address as well as the format and presentation of your electronic report will be posted on the unit Moodle site.

**Assessment Due Date**

Week 8 Thursday (12 Sept 2019) 4:00 pm AEST

**Return Date to Students**

Week 10 Friday (27 Sept 2019)

**Weighting**

30%

**Assessment Criteria**

Your report will be assessed on the following criteria:

- completeness of each section of the report template relative to the content requirements listed in the Task Description
- clarity and completeness of explanations and discussions
- factual correctness of explanations and discussions
- relevance of written content to core concepts
- correctness of definitions and use of terminology
- inclusion of radiographic images that you were involved in producing during your practical session
- relevance of images used to illustrate each concept.

**Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Discuss the underlying physical principles and the controls involved in x-ray beam production, emission,

interactions in matter and capture at the image receptor.

- Apply the concepts of beam control, differential attenuation, image geometry and scatter control to the production of a projection radiograph.
- Relate parameters of image acquisition and digital processing to visibility of information on digital radiographic images.

### Graduate Attributes

- Communication
- Information Literacy

## 3 In-class test

### Assessment Type

In-class Test(s)

### Task Description

As you are students in a course that is accredited by your professional body, we must provide evidence that you have core knowledge and skill that underpins your ability to meet the Competency Standards of your profession. This includes knowledge of the underlying science of radiography and its application to safe and effective practice.

**You will write an in-class test to demonstrate your ability to apply the concepts and use the terminology from Weeks 1 - 4 of the unit. All questions will be based on the posted weekly learning goals for those weeks.** Question tasks will be of the same types that you will practice in tutorials. These question tasks may include analysis of diagrams, creation of line diagrams to illustrate concepts, explanations of concepts, application of concepts to specific scenarios, definitions and discussions.

The Week 1 tutorial provides instruction and practice on how to use learning goals, define terms and analyse test questions. The weekly tutorials from Week 2 onward will provide you practice in analysing questions, formulating responses and assessing the quality of your responses.

**This test is a closed-book assessment of 60 minutes (1 hour) duration.** You will have a five minute settling in period and 5 minute perusal time prior to the allotted writing time. You will write the test under supervision. You are responsible for conducting yourself as you would in a formal examination as detailed in the Assessment Procedures. You will hand in your test paper and rough paper at the end of the test period.

**This test must be written at the timetabled date and time.** There is no provision for a late submission and no late penalty can be applied. In the absence of an approved extension, you cannot complete this assessment at a later time, and you will receive a mark of zero for the assessment if you have not completed it by the scheduled date and time. If you have an approved extension, you will be assigned a new test date and time as soon as possible after the original test date, according to availability of a test supervisor and an appropriate room. It is your responsibility to ensure that you can attend at that new assigned date/time. Please see Section 5 of the the University's Assessment Policy and Procedure for details regarding Assessment Management, specifically around assessment extension.

### Assessment Due Date

This test must be written in the timetabled Practical class during Week 6.

### Return Date to Students

Global feedback and test scores will be provided by Friday of Week 8.

### Weighting

20%

### Assessment Criteria

Questions responses will be scored on the following criteria:

- correct use and defining of terminology
- correct selection and application of theoretical concepts to the specific question situation
- logic of reasoning in explanations
- clarity, correctness, relevance and completeness of the response in addressing the question that was asked.

Marks for each question are allocated based on the number of key points expected in the response to address the question sufficiently, and will be indicated on the test paper. Students should use the indicated marks as a measure of the depth and breadth of response expected.

## Referencing Style

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)

## Submission

Offline

## Learning Outcomes Assessed

- Outline the construction, operation and clinical use of digital radiographic image acquisition and processing systems.
- Discuss the underlying physical principles and the controls involved in x-ray beam production, emission, interactions in matter and capture at the image receptor.
- Relate parameters of image acquisition and digital processing to visibility of information on digital radiographic images.

## Graduate Attributes

- Communication
- Problem Solving

## Examination

### Outline

Complete an invigilated examination.

### Date

During the examination period at a CQUniversity examination centre.

### Weighting

50%

### Length

180 minutes

### Minimum mark or grade

50%

### Exam Conditions

Restricted.

### Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Calculator - non-programmable, no text retrieval, silent only

## 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