School of Health Sciences

MRSC1010: Medical Radiation Science 1A
Callaghan
Semester 1 - 2024

OVERVIEW

Course Description

This course provides Medical Radiation Science (MRS) students with a global perspective of 21st century MRS clinical practice issues. The course will explore the practice and science of MRS and its role in modern health care; its use in the diagnosis, staging, treatment and monitoring of acute and chronic illness and injury; the physical, radiobiological and radiation safety principles underlying imaging and therapy; and an introduction to the interpretation of medical images used in MRS.

Academic Progress Requirements

Nil

Requisites

This course is only available to students active in the Bachelor of Medical Radiation Science (Honours) programs [40002], [40010] or [40011].

Contact Hours

Callaghan
Lecture
Face to Face On Campus
4 hour(s) per week(s) for 13 week(s) starting Week 1

Tutorial
Face to Face On Campus
1 hour(s) per week(s) for 13 week(s) starting Week 1

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

CONTACTS

Course Coordinator	**Callaghan** Mr John Tessier John.Tessier@newcastle.edu.au (02) 4921 6718 Consultation: Please email for an appointment
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	**School of Health Sciences** Room 302, ICT Building Callaghan SchoolHealthSciences@newcastle.edu.au +61 2 4921 7053

SYLLABUS

Course Content

1. Describing the professions, national registration, mandatory responsibilities and notifications, professional memberships.
2. Imaging modalities, therapy applications and clinical methods (plain film, CT, MRI, Ultrasound, PET, hybrid imaging, therapy applications).
3. Medical terminology, anatomical positioning and image interpretation.
4. Patient advocacy, safe and ethical use of radiation and patient information and management systems.
5. Radiation, nuclear structure and radioactivity. Interactions with matter and the production of radioactivity.

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Discuss the impact and use of medical radiation science in a wide range of medicine and health applications, including patient advocacy.

2. Compare and contrast the differences between different imaging modalities, and their use in the care of patients.

3. Develop the ability to read and understand medical terms and abbreviations used in patient records, referrals and in verbal communication.

4. Identify and describe normal anatomical positions and movements related to medical radiation science.

5. Describe the different types of patient information and management systems used in health care settings.

6. Recognise the dangers associates with medical radiations, and describe the safe and ethical use of medical imaging and therapy interventions.

7. Identify the different types of radiation and radioactive decay as well as their interactions with matter.

8. Discuss the different methods of radiation production.

9. Recognise the role that MRS staff have in modern health care, and the requirements for national registration and the ongoing maintenance of registration.

Course Materials

All course materials will be available on the MRSC1010 Canvas site

COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements:
- A minimum of 80% attendance is required for MRSC1010 tutorials.

Course Assessment Requirements:
- Assessment 3 - Formal Exam: Pass requirement 50% - Must obtain 50% in this assessment item to pass the course.

Compulsory Placement and WHS Requirements:
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SCHEDULE

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Exam 1	Friday April 12 by 5pm	Individual	30%	1,2, 3, 4, 5, 6,9
2	Exam 2	Friday May 24 by 5pm	Individual	30%	1, 2, 3, 4, 5, 6, 7, 8, 9
3	Formal Exam*	As timetabled in the formal exam period	Individual	40%	1, 2, 3, 4, 5, 6, 7, 8, 9

* This assessment has a compulsory requirement.

Late Submissions   The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Exam 1
Assessment Type   In Term Test
Description   Multiple choice, multiple answer and short answer questions covering content from weeks 1-6 inclusive
Weighting   30%
Due Date   Exam must be completed before 5pm on April 12
Submission Method   Online via Canvas. The exam will be available from Tuesday April 9
Assessment Criteria See MRSC1010 Canvas site
Return Method   Online
Feedback Provided   In class and online
Opportunity to Reattempt   Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 2 - Exam 2
Assessment Type   In Term Test
Description   Multiple choice, multiple answer and short answer questions covering content from weeks 1-10 inclusive
Weighting   30%
Due Date   Exam must be completed before 5pm on May 24

Submission Method	Online via Canvas. The exam will be available from Tuesday May 21
Assessment Criteria	See MRSC1010 Canvas site
Return Method	Online
Feedback Provided	In class and online
Opportunity to Reattempt	Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 3 - Formal Exam

Assessment Type	Formal Examination- invigilated exam, single A4 memory aid allowed
Description	Multiple choice, multiple answer and short answer questions covering entire MRSC1010 content
Weighting	40%
Compulsory Requirements	Pass requirement 50% - Must obtain 50% in this assessment item to pass the course..
Due Date	Formal Examination Period. The timetable for this exam is set by the University and will be available later in the semester
Submission Method	Online via Canvas
Assessment Criteria	See MRSC1010 Canvas site
Return Method	Online
Opportunity to Reattempt	Students WILL NOT be given the opportunity to reattempt this assessment.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods	Communication methods used in this course include:
Course Evaluation	Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)	As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.
Academic Misconduct	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35.

The use of live-response ("homework helper") websites or applications during assessment items may be considered to be academic misconduct, and will be referred to the Student Academic Conduct Officer (SACO) under the University's Student Conduct Rule.
The submission of generative AI chatbot (e.g. ChatGPT) products or materials, in whole or in part, and represented as a student's own original work, could be considered "dishonest or reckless conduct by a student to gain an advantage'. This may be considered Academic Misconduct under the University's Student Conduct Rule.
The use of websites or applications during assessment items ("Tabbing" or "Alt-Tabbing") may be considered to be academic misconduct, and will be referred to the Student Academic Conduct Officer (SACO) under the University's Student Conduct Rule. In all cases, unless your Course Co-ordinator has explicitly allowed a resource, then you must assume that a resource (text, website and/or application) is not to be used during an assessment item. Academic Misconduct has the potential for serious consequences, including failing the course, or being suspended or excluded from the University.

Adverse Circumstances	The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.
Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:
https://policies.newcastle.edu.au/document/view-current.php?id=236

Important Policy Information	The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures that support a safe and respectful environment at the University.