School of Health Sciences

College of Health, Medicine and Wellbeing

MRSC2200: Radiation Therapy Methods IIA

Callaghan

Semester 1 - 2023

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

COURSE OUTLINE

OVERVIEW

Course Description

This course consolidates conventional radiation therapy approaches and introduces 3 dimensional and conformal approaches to radiation therapy. Patient assessment for oncology treatment is reviewed. Students will begin to develop clinical reasoning skills to manage patients/clients, and professional practice and procedures. This course is mandatory and must be passed in order to progress in the Bachelor of Medical Radiation Science (Radiation Therapy)(Honours).

This Course recognises the Professional Capabilities developed by the Medical Radiation Practice Board of Australia. The Document 'Professional Capabilities For Medical Radiation Practice' outlines via Domains the requirements for a Competent Practitioner.

Domain 1: Medical Radiation Practitioner

1C: Radiation Therapist

Domain 2: Professional and ethical practitioner

Domain 3: Communicator and collaborator

Domain 4: Evidence-informed practitioner

Domain 5: Radiation safety and risk manager

Requisites

Students must be concurrently enrolled in MRSC2220, have successfully completed MRSC1201 and MRSC1220, and be active in the Bachelor of Medical Radiation Science (Honours) (Radiation Therapy) [40010] program to enrol in this course.

Assumed Knowledge

MRSC1201 Radiation Therapy Methods IB

MRSC1220 Radiation Therapy Professional Practice 1B

Contact Hours

Callaghan

Computer Lab *

Face to Face On Campus

1 hour(s) per Term Full Term

EXAM

Laboratory *

Face to Face On Campus

4 hour(s) per Week for 2 Weeks

Lecture *

Face to Face On Campus

2 hour(s) per Week for 7 Weeks

Seminar *

Online Off Campus

www.newcastle.edu.au

CRICOS Provider 00109J

1 hour(s) per Week for 5 Weeks
Mater Oncology Lecture

Tutorial *
Face to Face On Campus
2 hour(s) per Week for 5 Weeks

* This contact type has a compulsory requirement.

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
Mrs Leah Cramp
Leah.Cramp@newcastle.edu.au
(02) 4921 6381
Consultation: Monday- Friday. Please phone or email to make an appointment.
Office Location: ICT310

Teaching Staff Other teaching staff will be advised on the course Canvas site.

School Office

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SYLLABUS

Course Content

1. Issues in Oncology
2. Review of Conventional Radiation Therapy approaches
3. Isocentric Treatment & Planning Methods and Application
4. 3-Dimensional Conformal Radiation Therapy
5. ICRU Report 50 and Report 62 - Prescribing, Reporting and Recording External Beam Therapy
6. Dosing techniques and plan evaluation, including visual assessment, statistical assessment, and dose volume histogram assessment
7. Patient assessment with regard to quality of life, living with illness, and treatment toxicity criteria
8. Radiation therapy trials and protocols
9. Radiation therapy imaging cross-sectional anatomy
10. Quality assurance and auditing in Radiation Therapy

Course Learning Outcomes

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

1. Describe the epidemiology, aetiology and natural history of oncological-related illnesses
2. Compare & contrast the mainstream treatments used in oncology
3. Describe the process of diagnosis and staging in oncology
4. Describe and apply conventional radiation therapy, including simulation data acquisition; plan design, plan evaluation and critique; dose calculation and treatment sheet development; and treatment implementation
5. Describe and apply 3-dimensional conformal radiation therapy, including simulation data acquisition; plan design, plan evaluation and critique; dose calculation and treatment sheet development; and treatment implementation
6. Develop clinical reasoning skills in patient management, patient quality of life assessment, treatment evaluation, and imaging/treatment assessment
7. Develop an understanding of the role of quality assurance and auditing and its importance in the safety of radiation therapy implementation and patient care
8. Develop skills in Radiotherapy plan evaluation. Students will better understand the complexities of individualised radiotherapy planning and recognise where improvements can be gained
9. Develop and apply knowledge in the area of anatomical imaging

COMPULSORY REQUIREMENTS

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

Contact Hour Requirements:

- Computer Lab: 100% Attendance required
- Laboratories (Sim and VERT): 100% Attendance required
- Tutorials: 80% Attendance required
- Oncology Seminars : 80% Attendance required

Tutorials and Laboratories will include practical sessions in the Planning simulation lab, and/or the VERT simulation laboratory and Positioning simulation laboratory. These sessions will assist the student to develop problem-solving skills and group work skills that are necessary for academic success and their professional life. Records of attendance will be kept.

Students not meeting these attendance and participation requirements, will not meet the compulsory course component requirements for the course and will be given a fail grade (FF) for the course. No opportunity for remediation in the tutorials will be permitted unless accompanied by the appropriate Adverse Circumstance documentation.

Course Assessment Requirements:

- Assessment 1 - In Term Test: Pass Requirement - Students must pass this assessment item to pass the course.
- Assessment 2 - In Term Test: Pass Requirement - Students must pass this assessment item to pass the course.
- Assessment 3 - Formal Examination: Pass Requirement - Students must pass this assessment item to pass the course.

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 - Online – Quality Assurance and Plan Evaluation*	Thursday 23rd March 2023 (Week 5)	Individual	20%	7, 8
2	Exam - Anatomy - Imaging, Skeletal*	Tuesday 28th March 2023 (Week 6)	Individual	30%	9
3	Exam - Formal*	Formal Exam Period	Individual	50%	1, 2, 3, 4, 5, 6

* 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.

Reminder 1) Reusing one's own work, or part thereof, that has been submitted previously and counted towards another course without permission from the relevant Course Coordinator and 2) making contact or colluding with another person, contrary to instructions, during an examination, in-term test, quiz or other individual assessment item are considered forms of Academic Fraud within the Student Academic Integrity Policy. This information is located in the policy glossary under *academic fraud*, the Academic Integrity Module and/or details in HLSC1000 content on Academic Integrity.

Assessment 1 - Exam - Online - Quality Assurance and Plan Evaluation

Assessment Type In Term Test

Description COMPULSORY COURSE COMPONENT Description: This exam allows you to demonstrate your ability to interpret plans used in Radiation Therapy. To evaluate plans. This exam allows you to demonstrate your understanding of how quality Assurance is practiced in the Radiation Therapy setting. Course Objectives: This assessment item addresses objectives 7-8. This assessment item is weighted 20% of the course marks. The examination is a compulsory course component. This is a closed book examination. In order to pass the course the student must attempt this assessment item and the student must obtain a mark of 50% or over

Reminder Reusing one's own work, or part thereof, that has been submitted previously and counted towards another course without permission from the relevant Course Coordinator and 2) making contact or colluding with another person, contrary to instructions, during an examination, in-term test, quiz or other individual assessment item are considered forms of Academic Fraud within the Student Academic Integrity Policy. This information is located in the policy glossary under *academic fraud*, the Academic Integrity Module and/or details in HLSC1000 content on Academic Integrity.

Weighting 20%

Compulsory Requirements Pass Requirement - Students must pass this assessment item to pass the course.

Due Date Thursday 23rd March 2023 (Week 5)

Submission Method Online- on campus

Assessment Criteria Demonstration of understanding and interpretation of QA procedures. Demonstration of evaluation planning skills.

Return Method Not returned

Feedback Provided In class

Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment only with an approved Adverse Circumstances application

Assessment 2 - Exam - Anatomy - Imaging, Skeletal

Assessment Type	Formal Examination
Description	This exam is made up of an online on campus invigilated quiz weighted 30%. This exam allows you to demonstrate your ability to interpret multi-modality images used in Radiation Oncology and Radiation Therapy Course Objectives: This assessment item addresses objective 9. The examination is a compulsory course component. This is a closed book examination. In order to pass the course the student must attempt this assessment item and the student must obtain a mark of 50% or over
Reminder	Reusing one's own work, or part thereof, that has been submitted previously and counted towards another course without permission from the relevant Course Coordinator and 2) making contact or colluding with another person, contrary to instructions, during an examination, in-term test, quiz or other individual assessment item are considered forms of Academic Fraud within the Student Academic Integrity Policy. This information is located in the policy glossary under *academic fraud*, the Academic Integrity Module and/or details in HLSC1000 content on Academic Integrity.
Weighting	30%
Compulsory Requirements	Pass Requirement - Students must pass this assessment item to pass the course.
Due Date	Tuesday 28th March 2023 (Week 6)
Submission Method	Online/ On campus
Assessment Criteria	Demonstration of knowledge of anatomical imaging plain Radiographs and CT / MRI imaging
Return Method	Online
Feedback Provided	Online/ in class
Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment only with an approved Adverse Circumstances application

Assessment 3 - Exam - Formal

Assessment Type	Formal Examination
Description	COMPULSORY COURSE COMPONENT -during formal examination period This exam will allow you to demonstrate your clinical knowledge and understanding the content covered over the semester. Course Objectives: This assessment item addresses objectives 1-6 The examination is a compulsory course component. This is a closed book examination. In order to pass the course the student must attempt this assessment item and the student must obtain a mark of 50% or over.
Reminder	Reusing one's own work, or part thereof, that has been submitted previously and counted towards another course without permission from the relevant Course Coordinator and 2) making contact or colluding with another person, contrary to instructions, during an examination, in-term test, quiz or other individual assessment item are considered forms of Academic Fraud within the Student Academic Integrity Policy. This information is located in the policy glossary under *academic fraud*, the Academic Integrity Module and/or details in HLSC1000 content on Academic Integrity.
Weighting	50%
Compulsory Requirements	Pass Requirement - Students must pass this assessment item to pass the course.
Due Date	Formal Examination period
Submission Method	Formal Exam
Assessment Criteria	
Return Method	Not returned
Feedback Provided	Online/ In class
Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment only with an approved Adverse Circumstances application

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:
- CANVAS Course Site: Students will receive communications via the posting of content or announcements on the CANVAS course site.
- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face-to-face meetings or supervision

WHS Requirements

Students must attend all Simulation and VERT Laboratories in placement uniform including shoes. Students must complete SIM LAB and VERT Lab induction at the commencement of the week 2 Simulation Lab.

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.

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/no-room-for/policies-and-procedures that support a safe and respectful environment at the University.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.