School of Health Sciences

MRSC3205: Radiation Therapy Methods 111A

Callaghan

Semester 1 - 2024

COURSE OUTLINE

www.newcastle.edu.au

CRICOS Provider 00109J

OVERVIEW

Course Description

This course explores modern clinical approaches in radiation therapy. The oncology assessment and radiation therapy of major disease sites is covered so that students develop clinical reasoning skills to manage patients/clients, and professional practice and procedures.

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 of a Competent Practitioner:

Domain 1: Medical radiation practitioner, 1C: Radiation Therapist
Domain 2: Professional and ethical practice
Domain 3: Communication and collaboration
Domain 4: Evidence-informed practice
Domain 5: Radiation safety & risk management

This course is a Compulsory Program Component and must be passed in order to progress for students enrolled in the Bachelor of Medical Radiation Science (Honours) (Radiation Therapy) program.

In addition to meeting the University's overall requirements for academic progression, students enrolled in this program must satisfactorily complete this course in order to progress in their program.

Requisites

Students must be active in the B Medical Radiation Science (Honours) (Radiation Therapy) (40010) program.

Pre-requisite: successful completion of HUBS1401, HUBS2103, MRSC2250 & MRSC2270.

Co-requisite: concurrently enrolled in MRSC3220.

Assumed Knowledge

MRSC2250, MRSC2270

Contact Hours

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Computer Lab
Face to Face on Campus
1 hour(s) per week(s) for 1 week(s)
In class exam

Lecture
Face to Face on Campus
2 hour(s) per week(s) for 8 week(s)

Seminar *
Face to Face off Campus
1 hour(s) per week(s) for 7 week(s)
Mater Oncology Lecture

Tutorial *
Face to Face on Campus
2 hour(s) per week(s) for 8 week(s)

* 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
Ms Laura Feighan
Laura.Feighan@newcastle.edu.au
Office: ICT310, HERB (ICT), Callaghan
Consultation: Please email or call to arrange an appointment.

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

School Office

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SYLLABUS

Course Content

The following topics are covered:

1. Epidemiology, aetiology and natural history of oncological-related illnesses
2. Process of patient management, diagnosis and decision making in oncology
3. Comparison of 3D-CRT, IMRT & VMAT approaches to radiation therapy including immobilisation, simulation, planning and treatment.
4. Specific methodological focus on radiation therapy and oncology of the thorax and the abdomen
5. Dosing techniques and plan evaluation, including visual, statistical and dose-volume histogram assessments.
6. Patient assessment with regard to quality of life, living with illness and treatment toxicity criteria.
7. Application of clinical reasoning and reflective practice in patient management, with emphasis on ethical considerations, is also required.

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 different modalities of oncology treatment for specific tumours

3. Describe the process of patient management, diagnosis and decision-making in oncology

4. Compare and contrast, and describe and apply, 3D conformal radiation therapy (3DCRT) and Intensity Modulated Radiation Therapy (IMRT) and Volumetric Arc Therapy (VMAT) approaches to radiation therapy

5. Develop clinical reasoning and reflective thinking skills with regard to safe, ethical and effective patient management; patient quality of life assessment; technology assessment and implementation

6. Communicate their understanding of professional practice issues both in written & oral form

7. Critically appraise research literature using a structured critical appraisal approach to gather evidence to inform decision-making and practice

8. Collaborate with others to inform their learning and development and reflect on and evaluate personal & peer contributions to the learning process.

COMPULSORY REQUIREMENTS

To pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements

- Seminar: There is a compulsory attendance requirement in this course.
    - Calvary Mater Oncology Lecture - live via ZOOM.
    - Students must attend a minimum number of these sessions. 80% attendance required.
- Tutorial: There is a compulsory attendance requirement in this course.
    - 80% attendance required.

Tutorials - COMPULSORY COURSE COMPONENT

Tutorials 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. The laboratories require 100% attendance. Records of attendance will be kept. The tutorials are a compulsory course component for this course, ie you must attend 80% of tutorials. 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.

Submission of all assessments and attendance at examinations (please see Assessments Section Below for details).

Course Assessment Requirements

- Assessment 1 - Formal Examination: Pass Requirement - Students must pass this assessment item to pass the course. The examination is a compulsory course component. To pass this course, the student must attempt this assessment item and must obtain a mark of 50% or greater.

- Assessment 2 - In Term Test: Pass Requirement - Students must pass this assessment item to pass the course. Each examination is a compulsory course component. To pass this course, the student must attempt this assessment item and must obtain a combined mark of over 50% in Part A & B of the assessment.

- Assessment 3 – Evidence & Experience Based Portfolio: Pass Requirement - Students must pass this assessment item to pass the course. This submission is a compulsory course component. To pass this course, the student must attempt this assessment item. To pass this course the student must obtain a mark of over 50%.

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	Formal Examination*	**Radiation Therapy & Radiation Oncology** This exam will allow you to demonstrate your clinical knowledge and understanding the content covered over the semester. The examination is a compulsory course component. To pass the course, the student must attempt this assessment item and obtain a mark of 50% or over. **Due Date**: Formal Exam Period	Individual	30%	1, 2, 3, 4, 5
2	Examination - online*	**Anatomy & Image Matching** These exams allow you to demonstrate your ability to interpret multi-modality images used in Radiation Oncology, and radiation therapy fundamentals Assessment weightings are below. The examinations are a compulsory course component. To pass this course, the student must attempt all components of this assessment item and must obtain a mark of 50% for both assessments combined. **Due Dates**: Part A: Online Tuesday 28th May (Week 12) (15%) Part B: Viva Monday 3rd June (Week 13) (15%)	Individual	30%	2, 4
3	Evidenced and Experience Based Portfolio (2 parts)	**Evidence & Experience Based Portfolio** Students will develop an evidence-based portfolio based on a clinical disease scenario. This report presents evidence and experiential based learning across this course (and the program more broadly). Information about the portfolio will be provided in a separate handout. **Due Dates***: *1. Project Proposal:* Friday 8th March 2024 (Week 2) *2. Abstract & Literature Review:* Friday 24th May 2024 (Week 11) **All submissions due at 11:59pm on the due date*.	Group	40%	1, 2, 3, 4, 5, 6, 7

* 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.

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

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/respect-at-uni/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.