



NUCLEAR MEDICINE

Undergraduate entry courses

MAY 2023

CAREERS DEPARTMENT



**Catholic
College
Wodonga**

Life in Jesus

Introduction

This document has been developed to assist domestic Year 12 students and their families in researching nuclear medicine courses in Victoria and New South Wales. Information is relevant for the 2024 intake. Please use entry requirements and indicative selection ranks listed in this document as a guide only and check university websites for up-to-date information.

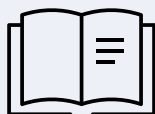
Disclaimer: Information has been taken from university websites and the Victorian Tertiary Admissions Centre (VTAC). Universities featured in this guide reserve the right to change course information, admissions, and entry requirements at any time and without notice. Note: photos in this document are stock images and aren't representative of students at the universities.

Written by Sandie McKoy, May 2023.



Selection Ranks

Please use indicative Selection Ranks as a guide as they may change for future intakes.



English prerequisite

EAL = English as an Additional Language. 'Any other English' includes English, English Language and Literature.



Undergraduate

This is usually your first course at university. For example - bachelor's degree.



Graduate

This is study you do once you have graduated from a bachelor's degree. For example - Master's degree.

Course Summary

VICTORIA

University	Course	Campus	Lowest Selection Rank - 2023
RMIT University	Bachelor of Applied Science (Medical Radiations) (Nuclear Medicine)	Bundoora	80.65

NEW SOUTH WALES

University	Course	Campus	Selection Rank
Charles Sturt University	Bachelor of Medical Radiation Science (Nuclear Medicine and Molecular Imaging)	Wagga Wagga	65.00
		Port Macquarie	65.00
University of Newcastle	Bachelor of Medical Radiation Science (Honours) (Nuclear Medicine)	Newcastle - Callaghan	71.00

This information is for courses in Victoria and New South Wales.

HOW TO BECOME A NUCLEAR MEDICINE TECHNOLOGIST

STEP 1: Secondary school studies

Study VCE/HSC subjects such as physics, biology, advanced mathematics, and chemistry. Achieve a competitive ATAR.

STEP 2: complete an accredited undergraduate or graduate entry degree at one of the following universities:

Victoria

RMIT University

New South Wales

Charles Sturt University
University of Newcastle

You will need to meet English language requirements, inherent requirements (e.g., communication skills), and academic entry requirements for course admission.

You may also be required to get or prove you have certain immunisations, have professional indemnity insurance, and get a Police Record Check and Working with Children Check.

STEP 3: Registration

Apply to register with the Medical Radiation Practice Board of Australia (MRPBA) in the Nuclear Medicine division of practice, www.medicalradiationpracticeboard.gov.au

STEP 4: Employment

Use job search websites to find employment. You can work anywhere in Australia.

STEP 5: Renew your registration each year

Renew your registration each year and ensure you meet the registration standards (i.e., continuing professional development hours, professional indemnity insurance).



WHAT IS THE ROLE OF A NUCLEAR MEDICINE TECHNOLOGIST?

Are you ready to enter the fascinating world of nuclear medicine technology? These skilled professionals are at the forefront of modern medical diagnosis and treatment, using cutting-edge equipment and radioactive materials to uncover the secrets of the human body. Nuclear medicine technologists administer these materials to patients and then capture amazing images of how they interact with organs and tissues. By doing so, they can detect and diagnose a wide range of conditions, from cancer to heart disease and beyond. With strict safety protocols and advanced imaging technology, these specialists are the superheroes of the medical world, saving lives and helping patients on a daily basis.

IS RADIATION THERAPY FOR YOU?

To succeed as a nuclear medicine technologist, you would need a unique combination of technical expertise, interpersonal skills, and personal qualities. You should have a keen eye for detail and the ability to follow strict protocols and procedures, as even a small mistake can have serious consequences in this field. You should also possess excellent communication and patient care skills, as you will be working closely with people who may be anxious or uncomfortable. Additionally, a strong sense of responsibility, a passion for learning, and a commitment to safety are essential traits for this career. If you're up for the challenge, a career as a nuclear medicine technologist can be incredibly rewarding and fulfilling.

IMPORTANT THINGS TO CONSIDER

Like any profession, being a nuclear medicine technologist has its challenges and downsides. Here are some potential downsides to consider:

Exposure to radiation: Working with radioactive materials on a daily basis can pose health risks, and technologists must take strict safety precautions to minimize exposure. This can include wearing protective clothing and monitoring radiation levels.

Physically demanding: Technologists may need to stand or sit for long periods of time, which can be physically exhausting. They may also need to help move or position patients, which can be physically challenging.

Emotionally taxing: Working with patients who are seriously ill or in pain can take a toll on a technologist's emotional well-being. Additionally, witnessing the impact of serious diseases or conditions can be emotionally difficult to handle.

Despite these challenges, many nuclear medicine technologists find the rewards of helping patients and contributing to medical advancements to be well worth it.

Bachelor of Applied Science (Medical Radiations) (Nuclear Medicine)

RMIT is the only Victorian university offering a multidisciplinary approach to medical radiations, with the option to study all medical radiations disciplines at degree level.

Medical radiations is a rapidly advancing healthcare discipline involving the application of ionising and non-ionising radiation for the diagnosis and treatment of injury and disease. Nuclear medicine uses very small amounts of radioactive materials (radiopharmaceuticals) to diagnose changes in the body and treat disease.

Radiopharmaceuticals are detected using special cameras (gamma camera technology and positron emission tomography) that work with computers to provide images. During treatment, the radiopharmaceuticals go directly to the organ being treated.

Nuclear medicine technologists work closely with patients and other health professionals in the treatment of disease. They carry out tests, which may include cardiac stress tests to analyse heart function, bone scans for orthopaedic injuries and lung scans for blood clots.

Clinical practice

Clinical practice is a major focus of this degree. You'll undertake work placement in each year of the degree, spending a total of 49 weeks over the 3.5 years in supervised clinical practice, making you work-ready upon graduation.

You'll gain experience in a range of clinical settings including large public teaching hospitals, small private practices, as well as metropolitan and rural centres. You'll study in facilities with the latest medical radiations and IT equipment.

Professional accreditation

This program has been accredited with conditions by the Medical Radiation Practice Accreditation Committee (MRPAC). From 2023, graduates of the program are eligible to apply for general registration as a medical radiation practitioner with the Medical Radiations Practice Board of Australia www.medicalradiationpracticeboard.gov.au

Selection Rank Adjustments

Depending on Study Score results, applicants may achieve selection rank adjustments through completion of any of these Units 3+4 subjects:

Any Science
Information Technology
Mathematical Methods
Specialist Mathematics.

First year subjects

The following are the first-year subjects for the 2023 intake and may change for future intakes:

Semester 1

Medical Radiations Physics 1
Foundations of Professional Practice
Introduction to Human Biosciences
Nuclear Medicine 1

Semester 2

Medical Radiations Physics 2
Systems Physiology
Nuclear Medicine 2
Research in Health Science

Early entry program

Schools Network Access Program (SNAP). This program is only available to selected schools, <https://bit.ly/2QULUKP>

Application

Apply via the Victorian Tertiary Admissions Centre (VTAC) from Monday 31 July 2023 for the 2024 intake, www.vtac.edu.au

Course	Prerequisites	Campus	Lowest ATAR - 2023 intake	Lowest Selection Rank - 2023 intake
Bachelor of Applied Science (Medical Radiations) (Nuclear Medicine)	Units 3+4: minimum study score of 30 in English (EAL) or 25 in any other English.	Bundoora	60.10	79.80
3.5-years (FT or PT equivalent)	Units 3+4: minimum study score of 20 in Mathematical Methods or Specialist Mathematics.			
	Satisfactory completion of Units 1+2 or Units 3+4 Biology or Chemistry.			

**Bachelor of Medical Radiation Science
(Nuclear Medicine and Molecular Imaging)**

A career in nuclear medicine and molecular imaging is a fascinating intersection of radiation physics, radiopharmaceutical sciences, radiochemistry, human biology, pathophysiology, biomedical engineering, computer science, data analytics (radiomics and artificial intelligence), communication and patient care and high-tech life-saving healthcare.

Equipment used by medical radiation scientists has become increasingly sophisticated over the past decade and a detailed knowledge of equipment function, operation and computer interfacing is required.

The training undertaken in this course involves biological tracers (radiopharmaceuticals) used for the diagnosis and treatment of various diseases.

This specialisation details the administration and imaging of these radiopharmaceuticals within the patient to detect physiological abnormalities and deliver appropriate treatment.

This specialisation requires formal training and education in clinical, instrumentation and computing aspects of single photon emission computed tomography (SPECT), PET, CT, MRI, ultrasound and newer hybrid systems (SPECT/CT and PET/CT).

Clinical experience

Students will undertake practical experience in clinical departments in country and metropolitan areas, including a fourth-year residency.

Professional accreditation

This course is accredited with conditions with the Medical Radiation Practice Board of Australia.

Admission programs

Includes information on and pathway programs such as Charles Sturt Pathways Course and the Diploma of General Studies, <https://bit.ly/2UoUIAb>

Early entry programs

Charles Sturt Advantage
Schools Recommendation Scheme
<https://bit.ly/2UoUIAb>

First Year Subjects

The following are the first-year subjects for the 2023 intake and may change for future intakes:

Semester 1

Professional Fundamentals
Indigenous Health
General Physics
Human Bioscience 1

Semester 2

Introductory Medical Radiation Science
Health Psychology
Physics for Medical Radiation Science
Human Bioscience 2

Application

Option 1: apply direct to the University via the Charles Sturt Advantage program.

Option 2: apply via the Universities Admissions Centre (UAC), www.uac.edu.au

Course	Assumed knowledge	Campus	Indicative ATAR
Bachelor of Medical Radiation Science (Nuclear Medicine and Molecular Imaging)	Advanced Mathematics	Wagga Wagga	65.0
	Physics.	Port Macquarie	65.0

UNIVERSITY OF NEWCASTLE

www.newcastle.edu.au

Bachelor of Medical Radiation Science (Honours) (Nuclear Medicine)

Nuclear medicine graduates from the University of Newcastle are sought after worldwide. In this rewarding and challenging degree, you'll learn to diagnose, treat, and prevent diseases such as cancer using radioactive substances – giving patients the best chance of living a full and healthy life.

Learn how to conduct nuclear medicine scans of a person's body using radioactive material. Under the supervision of leading medical staff, you'll be using specialised equipment to track radio pharmaceuticals as they move through the body. Techniques such as this help identify disease or injury at a very early stage.

You'll have access to the latest technologies through placement opportunities and on campus in our world-class, purpose-built, medical sciences precinct.

This includes a radio-pharmacy laboratory, CT laboratory, and nuclear medicine image processing software. You'll graduate with the confidence and competence to undertake professional practice as a nuclear medical technologist.

Clinical experience

All nuclear medicine students complete 42+ weeks of professional practice during their degree. During your placement, you are mentored and supervised by qualified nuclear medicine professionals. You may undertake placements in public and private hospitals and practices located in the Hunter Region, NSW, interstate or overseas.

Professional accreditation

This course is accredited with conditions with the Medical Radiation Practice Board of Australia.

Career opportunities

Nuclear Medicine is a highly specialised degree. Our graduates are very employable and highly regarded. Many of our graduates have advanced rapidly in their careers and are now in management roles in Australia and overseas.

As a graduate you will be qualified to register and work as nuclear medical technologists. You'll work closely with patients and allied health professionals to diagnose life-threatening diseases such as cancer and help monitor a patient's health.

Early entry programs

Schools Recommendation Scheme. Plus, there is a new Early Entry program – information will be released soon.

Application

Apply via the Universities Admissions Centre (UAC), www.uac.edu.au

Course	Assumed knowledge	Campus	Indicative ATAR
Bachelor of Medical Radiation Science (Honours) (Nuclear Medicine)	Advanced Mathematics Physics	Newcastle - Callaghan	71.00