Welcome

Medical Imaging at the University of Auckland

In New Zealand, the University of Auckland is the highest ranked University in the main world university ranking systems. We are proud to have our first batch of Medical Imaging graduates, including PGCertHSc Mammography in 2013 and PGDipHSc MRI and PGDipHSc Ultrasound students in 2014. While we are a newly established discipline within the Faculty of Medical and Health Sciences, our programmes offer the following distinctive features:

- We offer the only postgraduate Medical Imaging registrable programmes in New Zealand that are accredited by the Medical Radiation Technologists Board of New Zealand;
- We promote a safe and conducive learning environment to encourage students to push the knowledge frontier;
- We adopt a holistic approach to student learning, encouraging reflective and critical thinking which are key attributes of effective healthcare practitioners;
- Our postgraduate programmes further enhance clinical practice and challenge you to better your patient care delivery.

The Medical Imaging team will continue to strive to provide our students with a learning experience that is not only enjoyable, but also one that challenges you to excel.

You will find in this Programme handbook all the information you need to get started.

Best wishes.

Associate Professor Jenny Sim PhD
Programme Director Medical Imaging

“Millions saw the apple fall, but Newton asked why.”
— Bernard Baruch

“I have no special talents. I am only passionately curious.”
— Albert Einstein

Although every reasonable effort is made to ensure accuracy at time of print (February 2016), the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the current Calendar of the University of Auckland, to ensure that they are aware of and comply with all regulations, requirements and policies.

We advise that the University of Auckland is not involved in the employment of completing health professional students and can make no guarantee of post-qualification registration or employment in New Zealand or any other country.

Contents

What is Medical Imaging? 1

Medical Imaging at the University of Auckland 2

About the Department of Anatomy and Medical Imaging 2

The Medical Imaging Team 2

Our postgraduate programmes 3

Specialisations 4

Medical Imaging 4
Mammography 5
Medical Imaging (Nuclear Medicine pathway) 6
Magnetic Resonance Imaging (MRI) 7
Ultrasound 9

Course descriptions 11

Course schedule 2016 14

Eligibility for entry, timeframes and regulations 15

Postgraduate Certificate in Health Sciences 15
Postgraduate Diploma in Health Sciences 16
The Degree of Master of Health Sciences 17

Admission, enrolment and fees 19

New students 19
How to apply and enrol online 19
Fees and funding 11
Changing programmes 11
Changing course enrolment 12

Graduation 22

The University of Auckland resources and facilities 23

Support for postgraduate study 25
Supporting websites 26
Degree planner 27

Important dates 28
Medical Imaging Technologists (MITs) can work in a variety of roles within Medical imaging including general xray, CT scanning, mammography, ultrasound, MRI and nuclear medicine.

The study of Medical Imaging involves knowledge of human anatomy, physiology and pathology, positioning and imaging techniques, physics and radiation physics, as well as how to use x-ray equipment alongside the safety issues related to the use of radiation equipment and radioactive materials.

Medical imaging is patient focussed profession. The role involves working closely with patients, doctors and multidisciplinary teams. Technologists are required to prepare patients and equipment for examinations, perform and recognise high quality diagnostic imaging, perform quality assurance testing on equipment and ensure the holistic care of the patient.

The role of the Medical Imaging Technologist (MIT) is ever changing with the introduction of more complex technologies, increased demand on clinical imaging and educational opportunities.

Medical Imaging postgraduate study is available for those working professionally in Medical imaging departments, and also for other interested professionals who wish to broaden their knowledge base of Medical imaging. Further to this, postgraduate qualifications are required for professional registration purposes in the imaging technology sub-specialties of Magnetic Resonance Imaging (MRI), Ultrasound and Nuclear Medicine.

**Medical Imaging**

Medical imaging is the practice of obtaining diagnostic images and providing imaging guidance in interventional procedures, using a range of technologies. It is performed by Medical Imaging Technologists, historically known as radiographers. These health practitioners are required to combine scientific skills and knowledge with patient care into their working practice.

In New Zealand, these practitioners are required to be registered with the Medical Radiation Technologists Board (MRTB) to be eligible to practice. In New Zealand, these practitioners are required to be registered with the Medical Radiation Technologists Board (MRTB) to be eligible to practice. In New Zealand, these practitioners are required to be registered with the Medical Radiation Technologists Board (MRTB) to be eligible to practice.

**New Zealand Graduates**

The New Zealand qualification required for registration as a Medical Imaging Technologist is a Bachelor of Applied Science (Medical Imaging) or Bachelor of Medical Imaging. This undergraduate qualification is not available at the University of Auckland.

**Mammography**

Mammographers are qualified nurses specialising in diagnostic and/or Breastscreen Aotearoa (BSA) breast imaging services. This career pathway is also suitable for radiotherapists wishing to enter diagnostic imaging and work within BSA. Mammography is a challenging but rewarding clinical environment to participate in and is highly patient focussed. Mammographers require a sound understanding of the technical aspects of imaging breast anatomy and pathology, whilst addressing the emotional requirements of client care and communication.

**Magnetic Resonance Imaging (MRI)**

Magnetic Resonance Imaging (MRI) Technologists use very high-field strength magnets to obtain diagnostic images of the human body. These images provide information to assist doctors in diagnosing a wide range of neurological, musculoskeletal and body pathologies. MRI Technologists must first obtain an undergraduate degree in Medical imaging before completing specialist postgraduate study and training in MRI. They should have an interest in physics as well as anatomy and pathology to ensure images of optimal quality are obtained, in addition to good people skills as they have responsibility for the safety and care of patients in the MRI environment. These technologists work primarily in mid-large sized hospitals and private radiology departments.

**Nuclear Medicine**

A career in Nuclear Medicine is people orientated and provides exposure to health sciences and computer technology. Compared to other modalities, Nuclear Medicine is unique in that it uses radioactive tracers to provide both structure and physiological information on almost any organ of the body to assist with the diagnosis and treatment of disease.

**Ultrasound**

Sonographers are health professionals who utilise their knowledge of human anatomy, pathophysiology, technology and physics in order to obtain diagnostic images, which assist in the diagnosis of disease and treat abnormalities. Sonographers are employed in hospitals, universities and private clinics. They may also run their own business. Sonography is a highly sought after career, with New Zealand trained sonographers in demand around the world. A career in ultrasound requires highly developed people skills, and a commitment to lifelong learning.

**Medical Imaging at the University of Auckland**

**About the Department of Anatomy and Medical Imaging**

The Department of Anatomy and Medical Imaging makes a major contribution to general courses in biomedical science teaching and offers specialist courses in the anatomical and imaging sciences. It comprises the disciplines of Anatomy and Medical Imaging and forms part of the School of Medical Sciences of the Faculty of Medical and Health Sciences.

The department also delivers the only postgraduate programmes in New Zealand for the Medical Imaging profession.

The research activities of staff are similarly wide-ranging and multidisciplinary, extending from the molecular level through biological structure to studies on the whole body. The department is widely recognised for several outstanding developments, including the initiation of a state-of-the-art Biomedical Imaging Research Unit, an internationally recognised human brain bank for neuroscience research, a fully integrated facility that underpins anatomy, radiology and pathology teaching on the human body, Auckland Medical Research Foundation (AMRF), Medical Sciences Learning Centre - Whakaaro Pai and a broad range of high quality histology techniques.

**Address**

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Faculty of Medical and Health Sciences
University of Auckland
85 Park Road, Grafton
Auckland 1142, New Zealand

**Medical Imaging Website**

www.fmhsc.auckland.ac.nz/medical-imaging

**The Medical Imaging Team**

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Our postgraduate programmes

Postgraduate Certificate in Health Sciences (Medical Imaging)

All of these programmes are predominantly comprised of courses selected from Medical Imaging (MEDIMAGE) and/or Clinical Imaging (CLINIMAG). These courses present the state of the art in each discipline, are research-led and supported by the cutting-edge clinical and educational facilities offered in the faculty. All MEDIMAGE and CLINIMAG courses are worth 15 points, and are available only by distance learning (with the exception of the on-campus ultrasound course CLINIMAG 709). All of these courses are fully online and delivered via the University’s learning management system ‘CANVAS’. They incorporate a range of learning approaches including videos, webpages, and digital resources from the Phelon library.

A Medical Imaging Orientation workshop is offered at the beginning of each semester for those students new to the university and an annual Medical Imaging Symposium is held in Semester 1. These are on-campus events and while not compulsory, attendance is highly recommended.

Specialisations

- CT pathway
- Image Evaluation pathway
- Nuclear Medicine pathway
- Image Evaluation pathway

Postgraduate Diploma in Health Sciences (Mammography)

Graduates of the Postgraduate Diploma in Health Sciences (MEDIMAGE) in Medical Imaging will have the core attributes and skills of all certificate graduates and, in addition, will be able to:

- Apply a scientific body of knowledge relevant to a chosen medical imaging pathway
- Critically evaluate their own practice using an evidence-based approach
- Solve problems through systematic enquiry and critical reflection
- Adapt to a rapidly changing health care environment
- Integrate personal capabilities with professional practice

Graduate profile

PGCertHSc (Medical Imaging) programme

The Postgraduate Certificate in Health Sciences (PGCertHSc) in Medical Imaging is designed for Medical Imaging Technologists (MITs) seeking to extend their understanding of Medical Imaging and contribute to the improvement of clinical health services by implementing their knowledge and expertise within Medical Imaging services. Upon completion of the PGCertHSc, Medical Imaging students can progress to the PGDipHSc in Medical Imaging.

Course Code Course Name $1 $2
MEDIMAGE 701 Imaging Anatomy and Pathology ▪ ▪
MEDIMAGE 702 Professional Issues in Medical Imaging ▪ ▪
MEDIMAGE 710 CT Imaging Technology ▪ ▪
CLINIMAG 717 CT Clinical Applications OR CLINIMAG 707 CT Clinical Practice* ▪ ▪
*This course includes assessment of clinical competency in CT

Postgraduate Certificate in Health Sciences in Medical Imaging (Image Evaluation pathway)

Course Code Course Name $1 $2
MEDIMAGE 701 Imaging Anatomy and Pathology ▪ ▪
MEDIMAGE 702 Professional Issues in Medical Imaging ▪ ▪
MEDIMAGE 711* MSK Trauma Image Evaluation ▪ ▪ ▪
MEDIMAGE 712* MSK Pathology Image Evaluation ▪ ▪ ▪
MEDIMAGE 718* Acute Chest Image Evaluation ▪ ▪ ▪
MEDIMAGE 719* Paediatric Image Evaluation ▪ ▪ ▪
*Students choose any two of these courses to complete the PGCertHSc (Medical Imaging) - Image Evaluation pathway

Postgraduate Diploma in Health Sciences (Mammography)

Graduates of the Postgraduate Diploma in Health Sciences (MEDIMAGE) in Medical Imaging will have the core attributes and skills of all diploma graduates and graduates of the Postgraduate Certificate in Health Sciences in Medical Imaging. In addition, they will be able to:

- Contribute to the development of advanced practice in medical imaging
- Develop ideas and lead strategies to improve medical imaging practice
- Accept professional responsibilities related to leadership, supervision and management

Graduate profile

Medical Imaging

Schedule of courses

Graduates of the Postgraduate Diploma in Health Sciences (PGDipHSc) in Medical Imaging are designed for Medical Imaging Technologists (MITs) seeking to extend their understanding of Medical Imaging and contribute to the improvement of clinical health services by implementing their knowledge and expertise within Medical Imaging services. Graduates of the PGDipHSc in Medical Imaging will be prepared to contribute to the improvement of clinical health services offered to the New Zealand public by implementing their knowledge and expertise within Medical Imaging. Graduates will also be able to advance to Masters level study and contribute to the development of Medical Imaging services through research.

For more information:

www.auckland.ac.nz/medical-imaging
**Mammography**

**PGCertHSc (Mammography) programme**

The Postgraduate Certificate in Health Sciences (Mammography) provides a combination of academic and clinical elements ensuring graduates from this programme meet the mammography competencies as defined by the New Zealand Medical Radiation Technologists Board (MRITS). Graduates of the Postgraduate Certificate in Health Sciences in Mammography will be able to provide high level expertise in breast imaging and may contribute to national breast screening programmes. They will also be able to progress to further study in Medical Imaging.

For admission to this programme, the student must satisfy the Programme Director that they are employed in an appropriate clinical training position. It is the responsibility of the student to obtain this position. Appropriate supervision of the student must also be provided by a qualified and experienced member of staff who is registered in the Medical Imaging Scope of Practice and holds a current Annual Practising Certificate (APC).

**Workplace clinical requirements**

In order to develop the necessary technical, clinical, and diagnostic skills, students must be exposed to a large number and wide range of mammographic examinations. Completion of the training period will demand that the student has experienced a minimum of 300 clinical hours. Additionally, the minimum total number of mammographic examinations to be recorded is 300, of which no fewer than 100 must be performed without assistance.

Assessment of clinical competency will also occur in the student’s workplace throughout the duration of their enrolment within this programme until the completion of CLINIMAG 708 (Mammographic Clinical Practice). Students will not be able to compensate an inadequate clinical assessment with excellent academic work.

**Graduate profile**

**PGCertHSc in Mammography**

Graduates of the Postgraduate Certificate in Health Sciences in Mammography will have the core attributes and skills of all certificate graduates and, in addition, will be able to:

- Solve problems through systematic enquiry and critical reflection,
- Critically evaluate their own practice using an evidence-based approach,
- Apply a scientific body of knowledge in the field of mammography,
- Contribute to the development of advanced practice in Nuclear Medicine,
- Accept professional responsibilities related to leadership, supervision, and management.

**Schedule of courses**

**Postgraduate Certificate in Health Sciences in Mammography**

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Dependent on student choice

For more information: www.fmhs.auckland.ac.nz/mammography

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**Medical Imaging**

**PGDipHSc (Medical Imaging) – Nuclear Medicine pathway**

The Postgraduate Diploma in Health Sciences (Medical Imaging: Nuclear Medicine Pathway) provides a combination of academic and clinical elements ensuring graduates from this programme will be eligible for registration with the regulatory body, the New Zealand Medical Radiation Technologists Board (MRITS).

Graduates of the PGDipHSc in Medical Imaging (Nuclear Medicine pathway) will be prepared to contribute to the improvement of clinical health services offered to the New Zealand public by implementing their knowledge and expertise within Medical Imaging and, specifically within Nuclear Medicine. Graduates will also be able to advance to Masters level study and contribute to the development of medical imaging services through research.

For admission to this programme, the student must satisfy the Programme Director that they are employed in an appropriate clinical training position. It is the responsibility of the student to obtain this position. Appropriate supervision of the student must also be provided by a qualified and experienced member of staff who is registered in the relevant specialisation, with ‘…’ who is registered in the Nuclear Medicine Scope of Practice and holds a current Annual Practising Certificate (APC).

**Workplace clinical requirements**

In order to develop the necessary technical, clinical, and diagnostic skills, trainees must be exposed to a large number and wide range of Nuclear Medicine examinations. By completion of the training period the requirement is that the student has experienced a minimum of 3000 clinical hours.

Additionally, the minimum total number of Nuclear Medicine examinations to be recorded is 1000, of which no fewer than 500 must be performed without assistance. Within the Nuclear Medicine pathway, there is also a requirement for familiarisation and competency of processes and procedures additional to imaging. These are predominantly laboratory based and include a significant focus on quality assurance and radiation safety.

Assessment of clinical competency will also occur in the student’s workplace throughout the duration of their enrolment within this programme. Students will not be able to compensate an inadequate clinical assessment with excellent academic work.

A final clinical competency assessment, Structured Observation and Assessment of Practice (SOAP), must be performed at the student’s workplace and passed. Successful completion of this qualification will enable registration with the MRITS in the Nuclear Medicine Scope of Practice.

**Graduate Profile**

**PGDipHSc in Medical Imaging (Nuclear Medicine pathway)**

Graduates of the Nuclear Medicine pathway in the Postgraduate Diploma in Health Sciences (Medical Imaging) will have the core attributes and skills of all diploma graduates and, in addition, will be able to:

- Solve problems through systematic enquiry and critical reflection,
- Adapt to a rapidly changing health care environment,
- Integrate personal capabilities with professional practice,
- Develop ideas and lead strategies to improve Nuclear Medicine practice,
- Accept professional responsibilities related to leadership, supervision, and management.

**Schedule of courses**

**Postgraduate Diploma in Health Sciences in Medical Imaging (Nuclear Medicine pathway)**

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<td>MEDIMAGE 720</td>
<td>Fundamentals of Clinical Nuclear Medicine</td>
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<td>MEDIMAGE 708</td>
<td>Nuclear Medicine Technology*</td>
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<td>CLINIMAG 705</td>
<td>Nuclear Medicine Clinical Applications*</td>
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Availability dependent on student numbers

For more information: www.fmhs.auckland.ac.nz/nuclear-medicine
Magnetic Resonance Imaging (MRI)

PGDipHSc (MRI) programme

The Postgraduate Diploma in Health Sciences (MRI) provides a combination of academic and clinical elements ensuring graduates from this programme will be eligible for registration with the regulatory body, the New Zealand Medical Radiation Technologists Board (MRTB).

Graduates of the PGDipHSc in Magnetic Resonance Imaging will be prepared to contribute to the improvement of clinical health services offered to the New Zealand public by implementing their knowledge and expertise within Medical Imaging, and specifically within MRI. Graduates will also be able to advance to Masters level study and contribute to the development of Medical imaging services through research.

For admission to this programme, the student must satisfy the Programme Director that they are employed in an appropriate clinical training position. It is the responsibility of the student to obtain this position. Appropriate supervision of the student must also be provided by a qualified and experienced member of staff who is registered in the Magnetic Resonance Imaging Scope of Practice and holds a current Annual Practising Certificate (APC).

Workplace clinical requirements

In order to develop the necessary technical, clinical and diagnostic skills, trainees must be exposed to a large number and wide range of MRI examinations. By completion of the training period the requirement is that the student has experienced a minimum of 2000 clinical hours.

Additionally, the minimum total number of MRI examinations to be recorded is 1000, of which no fewer than 500 must be performed without assistance.

Assessment of clinical competency will also occur in the student’s workplace throughout the duration of their enrolment within this programme. Students will not be able to compensate an inadequate clinical assessment with excellent academic work.

A final clinical competency assessment, Structured Observation and Assessment of Practice (SOAP), must be performed at the student’s workplace and passed. Successful completion of this qualification will enable registration with the MRTB in the Magnetic Resonance Imaging Scope of Practice.

Graduate profile

Graduates of the Postgraduate Diploma in Health Sciences in Magnetic Resonance Imaging will have the core attributes and skills of all diploma graduates and, in addition, will be able to:

- Apply a scientific body of knowledge in the field of medical resonance imaging
- Contribute to the development of advanced practice in MRI
- Critically evaluate their own practice using an evidence-based approach
- Solve problems through systematic enquiry and critical reflection
- Adapt to a rapidly changing health care environment
- Integrate personal capabilities with professional practice
- Develop ideas and lead strategies to improve medical imaging practice
- Accept professional responsibilities related to leadership, supervision and management
- Solve problems through systematic enquiry and critical reflection

...continue...

PGDipHSc (MRI) programme

For more information

www.fmhs.auckland.ac.nz/MRI

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For more information

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For more information

www.fmhs.auckland.ac.nz/MRI

Schedule of courses

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<th>Course Code</th>
<th>Course Name</th>
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<td>MEDIMAGE 702</td>
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Graduate profile: Donna Reeve

Postgraduate Diploma in Health Sciences (Magnetic Resonance Imaging) graduate Donna Reeve works at Ascot Radiology in Auckland where she trained as an MRI Technologist. Graduating at the end of 2014 as a member of the inaugural student cohort in this programme, Donna was student representative on the Medical Imaging Board of Studies in 2013-2014.

I wanted to become an MRI Technologist to further my education, skills and knowledge. I really enjoy now having the skills to work in many imaging modalities in radiology as it gave me a greater appreciation and understanding of the imaging pathway our patients experience. I chose the University of Auckland for my post graduate diploma as I believe they have a strong reputation for providing high levels of education.

“The theoretical work directly complemented my clinical role and gave me a deeper understanding of how to make beautiful MR images. While the majority of this programme is delivered online, the lecturers put a lot of effort into laying out weekly tasks in an easy to follow, interactive format. It also allowed ‘classroom style’ communication with other students in this programme so you didn’t feel like you were learning alone. Having said that, on-campus events were my favourite part of this programme. I really enjoyed being able to meet my lectures and classmates and listen to some incredible lectures given by guest speakers. I was always impressed with the passion of teaching and support from the lecturers.

I am now regarded as an MRI Technologist and the learning from this qualification has enabled me to help patients receive the best possible outcomes by providing MR imaging of a high quality. I find it very rewarding helping patients to the best of my ability during a potentially stressful part of their life.”
Specialisations

Ultrasound

PGDipHSc (Ultrasound) programme

The Postgraduate Diploma in Health Sciences (Ultrasound) provides a combination of academic and clinical elements ensuring graduates from this programme will be eligible for registration with the regulatory body. The New Zealand Medical Radiation Technologists Board (MRTB). Graduates of the PGDipHSc in Ultrasound will be prepared to contribute to the improvement of clinical health services offered to the New Zealand public by implementing their knowledge and expertise within Medical Imaging, and specifically within ultrasound. Graduates will also be able to advance to Masters level study and contribute to the development of Medical Imaging services through research.

For admission to this programme, the student must satisfy the Programme Director that they are employed in an appropriate clinical training position. It is the responsibility of the student to obtain this position. Appropriate supervision of the student must also be provided by a qualified and experienced member of staff who is registered in the Ultrasound Scope of Practice and holds a current Annual Practising Certificate (APC).

The ultrasound programme is designed to be completed part-time and by distance learning, with the exception of CLINIMAG 709 (Principles of Clinical Ultrasound) which requires on-campus attendance.

For those interested in pursuing a career in ultrasound and who are NOT Medical Imaging Technologists, please refer to the University of Auckland website for more information: www.fmhs.auckland.ac.nz/ultrasound

Workplace clinical requirements

In order to develop the necessary technical, clinical and diagnostic skills, trainees must be exposed to a large number and wide range of ultrasound examinations. By completion of the training period the requirement is that the student has experienced a minimum of 3000 clinical hours. Additionally, the minimum total number of Ultrasound examinations to be recorded is 2000, of which no fewer than 1000 must be performed without assistance.

Assessment of clinical competency will also occur in the student’s workplace throughout the duration of their entitlement within this programme. Students will not be able to compensate an inadequate clinical assessment with excellent academic work.

A final clinical competency assessment, Structured Observation and Clinical Assessment with excellent academic work, is required prior to graduation. The student must also be employed in an appropriate clinical training position.

It is the responsibility of the student to obtain this position. Appropriate supervision of the student must also be provided by a qualified and experienced member of staff who is registered in the Ultrasound Scope of Practice and holds a current Annual Practising Certificate (APC). This qualification will open a new chapter of my life, giving me the opportunity to gain deeper knowledge in support of my career.


Postgraduate Diploma in Health Sciences in Ultrasound

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<td>CLINIMAG 709</td>
<td>Principles of Clinical Ultrasound</td>
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<td>MEDIMAGE 717</td>
<td>Ultrasound Imaging Technology</td>
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<td>CLINIMAG 713</td>
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<td>Elective course</td>
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*At least one of these courses is a pre-requisite for all of the other ultrasound-specific courses. It is expected that students complete this in the first semester 1 of their programme of study.

For more information

www.fmhs.auckland.ac.nz/ultrasound

Student profile: Kevin Huo

Kevin Huo is a trainee sonographer at Middlemore Hospital and is enrolled in the Postgraduate Diploma in Health Sciences (Ultrasound) programme.

“I was always intrigued by ultrasound images. I was intruiged by ultrasound images when I studied radiography. Knowing how to interpret these images seems to be a special power as they make little sense to the untrained eyes, even for radiographers.

“I was attracted to the University of Auckland programme because the quality of education delivered by the university is well-proven. Also, the ultrasound programme provided by the university is a postgraduate diploma which not only emphasises the clinical practice aspects, but also the academic knowledge of the profession. It is very important to have both aspects to perform examinations confidently in daily clinical practice.

“When the on-campus intensive course at the beginning of my programme, staff from the faculty were very friendly and helpful. I genuinely enjoy the lovely atmosphere around the Medical Imaging department. The structure of the intensive course is well-targeted for the beginner trainee sonographer with a good portion of physics, anatomy & pathology and clinical management skills included. It made a huge difference to my workflow in my clinical department after I finished the intensive course.

“The autonomy in my job is a main attraction for me. During the examination, it is the sonographer’s responsibility to locate, identify and analyse the pathologies. The best representative images are then captured and documented. Each case involves significant amounts of clinical decision making. It is challenging but absolutely satisfying! The coursework in the ultrasound programme is relevant with most of the topics covered, frequently seen in my daily clinical practise.

“This qualification will open a new chapter of my life, giving me the opportunity to gain deeper knowledge in support of my career.”
Course descriptions

MEDIMAGE 701 Imaging Anatomy and Pathology
Students will develop an integrated understanding of anatomy and pathology as it applies to medical imaging in the clinical context. The course introduces the principles of medical science at whole body, organ, tissue, cellular and subcellular levels and includes the fundamentals of anatomy, physiology and pathophysiology of the major systems of the human body in relation to specific regions and pathologies.

MEDIMAGE 702 Professional Issues in Medical Imaging
Students will investigate the concept of professional practice leading to an exploration of current professional issues relevant to medical imaging including role development and advanced practice. The course will provide students with the knowledge to interact with individuals from a variety of backgrounds both ethically and with respect for their beliefs and values. The course also addresses medical legal issues, decision-making and effective communication within the clinical setting.

MEDIMAGE 704 MRI Technology II
Addresses more advanced scientific principles of the modality including advanced pulse sequences, gating, contrast agents, parallel imaging methods, high field imaging, equipment developments and new and evolving techniques
Prerequisite: MEDIMAGE 703
Restriction: MEDIMAGE 714

MEDIMAGE 707 Mammographic Technology
Provides students with an in-depth understanding of mammographic technology and its application. The course addresses the scientific principles of the modality including image formation, technical parameters, radiation safety specific to mammography, image quality, artifacts, and quality assurance. Equipment developments and new and evolving techniques will be examined.

MEDIMAGE 708 Nuclear Medicine Technology
Provides students with an in-depth understanding of Nuclear Medicine technology and its application. The course addresses scientific principles of the modality relating to standard clinical practice including image quality and quality assurance, Single Photon Emission Computed Tomography (SPECT), SPECT/CT, Positron Emission Tomography (PET) and PET/CT.
Prerequisite course: MEDIMAGE 710

MEDIMAGE 710 CT Imaging Technology
Provides students with an in-depth understanding of CT technology and its application. The course addresses the scientific principles of the modality including image formation and reconstruction, technical parameters, radiation safety and dose reduction, image quality, artifacts, quality assurance and contrast agents. Equipment developments and new and evolving techniques will be examined.

MEDIMAGE 711 Musculoskeletal Trauma Image Evaluation
Provides students with the knowledge to evaluate radiographs of common musculoskeletal traumas in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common musculoskeletal trauma radiographs.

MEDIMAGE 712 Musculoskeletal Pathology Image Evaluation
Provides students with the knowledge to evaluate radiographs of common musculoskeletal pathologies in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common musculoskeletal pathology radiographs.

MEDIMAGE 714 Fundamentals of Clinical MRI
Provides a fundamental understanding of MRI technology and applications and addresses scientific principles of the modality including resonance and relaxation, image contrast, spatial encoding and digital image formation. Students will examine components of the clinical environment including MRI equipment, contrast agents, bio-effects and safety. In addition, students will analyze standard imaging protocols of the lumbar spine, knee and brain and normal and abnormal MRI imaging appearances of these areas.

MEDIMAGE 715 MRI Technology
Provides an in-depth understanding of MRI technology and its applications and addresses scientific principles of the modality relating to standard clinical practice including pulse sequences, image quality and quality assurance, technical parameters and trade-offs, image optimisation, artifacts, parallel imaging, scanning at 3T, diffusion and MR angiography.
Prerequisite: MEDIMAGE 714
Restriction: MEDIMAGE 703, MEDIMAGE 704

MEDIMAGE 716 Fundamentals of Clinical Ultrasound
Provides a fundamental understanding of ultrasound technology and applications. Students will examine components of the clinical environment including ultrasound technology, quality assurance, bio-effects and safety. In addition, students will analyse standard imaging techniques and normal and abnormal imaging appearances of the abdomen, pelvis and lower leg. wars.

MEDIMAGE 717 Ultrasound Imaging Technology
Provides students with the advanced scientific principles of ultrasound and their application. The course addresses Doppler principles, artifacts and instrumentation, electronic array technology, contrast agents, three dimensional and 4-D scanning, equipment developments and new and evolving techniques

MEDIMAGE 718 Acute Chest Image Evaluation
Provides students with the knowledge to evaluate acute chest radiographs in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common acute chest radiographs.

MEDIMAGE 719 Paediatric Image Evaluation
Provides students with the knowledge to evaluate radiographs of common paediatric trauma and pathologies in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common paediatric radiographs.

MEDIMAGE 720 Fundamentals of Clinical Nuclear Medicine
Provides a fundamental understanding of Nuclear Medicine technology and applications and addresses scientific principles of the modality relating to standard clinical practice including image formation and reconstruction, technical parameters and trade-offs, image optimisation, artifacts, parallel imaging, scanning at 3T, diffusion and MR angiography.
Prerequisite: MEDIMAGE 714

MEDIMAGE 721 Nuclear Medicine Technology
Provides students with an in-depth understanding of Nuclear Medicine technology and its application. The course addresses scientific principles of the modality relating to standard clinical practice including image quality and quality assurance, Single Photon Emission Computed Tomography (SPECT), SPECT/CT, Positron Emission Tomography (PET) and PET/CT.
Prerequisite course: MEDIMAGE 710

MEDIMAGE 722 CT Clinical Practice
Addresses normal and abnormal computed tomography (CT) imaging appearances, technique evaluation and adaptation, and includes reflection on clinical practice relating to CT. The course will ensure students develop the knowledge, competencies, skills and attitudes needed to demonstrate mastery in academic and professional CT practice.
Prerequisite: MEDIMAGE 703, MEDIMAGE 704 and CLINIMAG 701
Restriction: MEDIMAGE 714

MEDIMAGE 723 CLINIMAGE 702 Nuclear Medicine Clinical Applications II
Addresses normal and abnormal radiopharmaceutical biodistribution imaging appearances and protocol selection relating to clinical practice of the cardiovascular, hepatobiliary, central nervous and endocrine systems. Students will develop knowledge and reflect on competencies, skills and attitudes required for mastery in academic and professional Nuclear Medicine practice.
Prerequisite: MEDIMAGE 709 and CLINIMAG 701

MEDIMAGE 724 CT Imaging Technology
Provides students with an in-depth understanding of CT technology and its application. The course addresses the scientific principles of the modality including image formation and reconstruction, technical parameters, radiation safety and dose reduction, image quality, artifacts, quality assurance and contrast agents. Equipment developments and new and evolving techniques will be examined.

MEDIMAGE 725 MRI Technology II
Addresses more advanced scientific principles of the modality including advanced pulse sequences, gating, contrast agents, parallel imaging methods, high field imaging, equipment developments and new and evolving techniques
Prerequisite: MEDIMAGE 703
Restriction: MEDIMAGE 714

MEDIMAGE 726 Nuclear Medicine Technology
Provides students with an in-depth understanding of Nuclear Medicine technology and its application. The course addresses scientific principles of the modality relating to standard clinical practice including image quality and quality assurance, Single Photon Emission Computed Tomography (SPECT), SPECT/CT, Positron Emission Tomography (PET) and PET/CT.
Prerequisite course: MEDIMAGE 710

MEDIMAGE 727 Ultrasound Imaging Technology
Provides students with the advanced scientific principles of ultrasound and their application. The course addresses Doppler principles, artifacts and instrumentation, electronic array technology, contrast agents, three dimensional and 4-D scanning, equipment developments and new and evolving techniques

MEDIMAGE 728 Acute Chest Image Evaluation
Provides students with the knowledge to evaluate acute chest radiographs in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common acute chest radiographs.

MEDIMAGE 729 Paediatric Image Evaluation
Provides students with the knowledge to evaluate radiographs of common paediatric trauma and pathologies in the clinical setting. Using a systematic method of image interrogation and a critical approach, students will develop the ability to provide a preliminary clinical image evaluation of common paediatric radiographs.

CLINIMAGE 707 CT Clinical Practice
Addresses normal and abnormal computed tomography (CT) imaging appearances, technique evaluation and adaptation, and includes reflection on clinical practice relating to CT. The course will ensure students develop the knowledge, competencies, skills and attitudes needed to demonstrate mastery in academic and professional CT practice.
Prerequisite: MEDIMAGE 710
Restriction: CLINIMAG 717

CLINIMAGE 708 Mammographic Clinical Practice
Addresses normal and abnormal mammographic imaging appearances, technique evaluation and adaptation, and includes reflection on clinical practice relating to mammography. The course will ensure students develop the knowledge, competencies, skills and attitudes needed to demonstrate mastery in academic and professional mammographic practice.
Prerequisite: MEDIMAGE 707 Mammographic Technology

Offering of courses in each semester is dependent on sufficient student enrolment numbers and are therefore subject to change by the School of Medical Sciences.

Enrolment information explained

Prerequisite
A course that you must pass before you can start to study in this course.

Restriction
A course which is restricted against another course because the learning objectives, content, and/or assessment are so similar to the other course that you cannot gain credit for both courses towards a certificate, diploma, or degree.

Corequisite
A course that should be taken in the same semester as another unless it has previously been satisfactorily completed.

Department consent required
Before you can enrol in this course you must obtain permission to do so from the department. Visit your faculty student centre if you need help or advice. Refer to page 22 for further details.
CLINIMAG 709
Principles of Clinical Ultrasound
Provides a fundamental understanding of ultrasound technology and applications. Students will examine components of the clinical environment including transducer technology, quality assurance, bio-effects and safety, and apply these to clinical practice. In addition, students will analyse standard imaging techniques, normal and abnormal imaging appearances of the abdomen, pelvis and lower legs and perform examinations of these areas.
Restriction: MEDIMAGE 716

CLINIMAGE 710
MRI Clinical Applications
Addresses normal and abnormal imaging appearances, protocol selection and development, and applications associated with standard neuroradiology, musculoskeletal and body MR examinations.
Prerequisite: MEDIMAGE 714
Restriction: CLINIMAG 701, CLINIMAG 702

CLINIMAG 711
MRI Specialised Clinical Applications
Addresses complex scientific principles of MRI relevant to a range of specialised applications. Students will examine advanced pulse sequences, and specialised procedures including breast MR, obstetrics, MR angiography functional MRI and cardiac MRI. Techniques such as perfusion, spectroscopy, diffusion tensor imaging (DTI) and tractography will be investigated in addition to new and evolving techniques.
Prerequisite: MEDIMAGE 714
Restriction: CLINIMAG 701

CLINIMAGE 712
MRI Clinical Practice
Develops the knowledge, competencies, skills and attitudes needed to demonstrate mastery in both academic and professional capability in MRI practice.
Prerequisite: 90 points and departmental approval required

CLINIMAGE 713
Ultrasound Clinical Applications in Obstetrics & Gynaecology
Addresses normal and abnormal ultrasound imaging appearances, in addition to adaptation of scanning techniques relating to gynaecology and obstetrics ultrasound imaging.
Prerequisite: 90 points and departmental approval required

CLINIMAGE 715
Ultrasound Clinical Practice
Develops the knowledge, competencies, skills and attitudes needed to demonstrate mastery in both academic and professional capability in ultrasound practice.
Prerequisite: 90 points and departmental approval required

CLINIMAGE 716
Nuclear Medicine Clinical Practice
Develops the knowledge, competencies, skills and attitudes needed to demonstrate mastery in both academic and professional capability in Nuclear Medicine practice.
Prerequisite: 90 points and departmental approval required

CLINIMAGE 717
CT Clinical Applications
Addresses normal and abnormal Computed Tomography (CT) imaging appearances, protocol selection and modification, and application to clinical practice.
MEDIMAGE 710 is recommended as a prerequisite course, although not required.
Restriction: CLINIMAG 707

Course Code | Course Name | S1 | S2 | Course Coordinator
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MEDIMAGE 701 | Imaging Anatomy and Pathology | ✔ | ✔ | Adrienne Young
MEDIMAGE 702 | Professional Issues in Medical Imaging | ✔ | | Jenny Sim
MEDIMAGE 704 | Magnetic Resonance Imaging Technology II | ✔ | | Adrienne Young
MEDIMAGE 707 | Mammographic Technology | ✔ | | Rhonda-Joy Sweeney
MEDIMAGE 710 | CT Imaging Technology | ✔ | | Catherine Lyman
MEDIMAGE 712 | Special Studies | ✔ | | Jenny Sim
MEDIMAGE 714 | Fundamentals of Clinical MRI | ✔ | | Adrienne Young
MEDIMAGE 715 | MRI Technology | ✔ | | Adrienne Young
MEDIMAGE 716 | Fundamentals of Clinical Ultrasound | ✔ | | Sangeeta Kumar
MEDIMAGE 717 | Ultrasound Imaging Technology | ✔ | | Beau Ponté
MEDIMAGE 718 | Acute Chest Image Evaluation | ✔ | | Heather Gunn
MEDIMAGE 719 | Paediatric Image Evaluation | ✔ | | Heather Gunn
MEDIMAGE 719 | Fundamentals of Clinical Nuclear Medicine | ✔ | | Adrienne Young
CLINIMAGE 702 | MRI Clinical Practice II | ✔ | | Shelley Park
CLINIMAGE 704 | Ultrasound Clinical Practice II | ✔ | | Martin Necas
CLINIMAGE 706 | Nuclear Medicine Clinical Applications II | ✔ | | Catherine Lyman
CLINIMAGE 707 | CT Clinical Practice | ✔ | | Catherine Lyman
CLINIMAGE 708 | Mammographic Clinical Practice | ✔ | | Rhonda-Joy Sweeney
CLINIMAGE 709 | Principles of Clinical Ultrasound | ✔ | | Karen Wallis
CLINIMAGE 710 | MRI Clinical Applications | ✔ | | Shelley Park
CLINIMAGE 711 | MRI Specialised Clinical Applications | ✔ | | Shelley Park
CLINIMAGE 712 | MRI Clinical Practice | ✔ | | Shelley Park
CLINIMAGE 713 | Ultrasound Clinical Applications in Obstetrics and Gynaecology | ✔ | | Sangeeta Kumar
CLINIMAGE 714 | Ultrasound Clinical Applications | ✔ | | Martin Necas
CLINIMAGE 715 | Ultrasonic Clinical Practice | ✔ | | Karen Wallis
CLINIMAGE 716 | Nuclear Medicine Clinical Practice | ✔ | | Shelley Park
CLINIMAGE 717 | CT Clinical Applications | ✔ | | Catherine Lyman

This course schedule lists all courses that will be offered in 2016 (subject to sufficient student numbers).
Eligibility for entry, timeframes and regulations

Postgraduate Certificate in Health Sciences

Postgraduate certificates (PGCertHSc) can be used to give students a postgraduate qualification in an area of interest or in which they have some professional involvement. The PGCertHSc (Medical Imaging) and PGCertHSc (Mammography) programmes offer courses suitable for registered Medical Imaging Technologists who wish to advance their career and/or professional development. Within the Medical Imaging specialisation, students can choose their own combination of courses to suit their professional needs or follow prescribed pathways in CT or image evaluation. Often students begin with this qualification if they have been out of study for some time or they just want to see what postgraduate study is all about. It is also the recommended initial qualification for non-university and overseas graduates.

Any course offered by the faculty can also be taken as a Certificate of Proficiency (COP). Students sometimes enrol in a course as a COP if they wish to take only one or two courses and know that they definitely will not be returning to the University to take any further study in that particular area. COP courses cannot be reassigned into research masters degrees, and there are point limits and time limits for reassigning COPs into other postgraduate programmes. If you are considering enrolling in a course as a COP then you are advised to seek advice from either the department that offers the course or the faculty’s Student Centre (see page 23).

Eligibility
To gain admission to the Mammography or Medical Imaging specialisations a student needs to have completed an undergraduate degree in Medical Imaging or an equivalent qualification, and hold current registration with the New Zealand Medical Radiation Technologists Board or as a Medical Radiation Technologist in their country of domicile. In addition, for the PGCertHSc (Mammography), the student must have adequate access to clinical work to undertake the programme in circumstances approved by the University of Auckland. Entry to the PGCertHSc (Mammography) programme is restricted to students who have already obtained a relevant clinical training position in a University of Auckland approved Radiology/Medical Imaging/BreastScreen Aotearoa department.

Duration and points value
Postgraduate certificates consist of 60 points of taught courses (usually four courses). Students in full-time work or with family responsibilities are advised to consider completing the programme over two years.

| Points required: | 60 |
| Time to complete: | Within one semester if enrolled full-time, within two years if enrolled part-time |
| Start semester: | One or Two |

This programme has a total enrolment clause of 90 points. This is the maximum number of points you can enrol in (including failed or withdrawn courses) towards this programme.

End of study extension
If further time is required to complete the programme of study, an end of study extension may be requested under specific circumstances. Please seek advice from medicalimaging@auckland.ac.nz regarding the application process for withdrawals, late deletions and suspensions of study.

Regulations
Detailed information on admission criteria, programme structure and content, and the schedule of courses can be found in the Calendar Regulations for the Postgraduate Certificate in Health Sciences. www.auckland.ac.nz/pgcerthsc-regulations

Transfer Credits and Reassignments
Transfer credits (credit from another tertiary institution) may be awarded for a Postgraduate Certificate. With the approval of the Head of Department, courses may be reassigned to a Postgraduate Certificate. Up to two COPs may be reassigned provided that the enrolment in the postgraduate qualification is no later than three semesters from the initial enrolment in the course(s) reassigned from a COP. This must be applied for at the time of admission to the postgraduate certificate programme. Please note that all regulations should be read in conjunction with the General Regulations – Postgraduate Certificates.

Postgraduate Diploma in Health Sciences

Eligibility
To gain admission to the Magnetic Resonance Imaging, Ultrasound or Medical Imaging specialisations a student needs to have completed an undergraduate degree in Medical Imaging or an equivalent qualification, and hold current registration with the New Zealand Medical Radiation Technologists Board or as a Medical Radiation Technologist in their country of domicile. In addition, the student must have adequate access to clinical work to undertake the programme in circumstances approved by the University of Auckland.

Entry to the PGDipHSc (MRI), PGDipHSc (Ultrasound) and PGDipHSc (Medical Imaging – Nuclear Medicine pathway) programmes provide a route to registration for Magnetic Resonance Technologists, Sonographers and Nuclear Medicine Technologists in New Zealand. These programmes have been accredited by the New Zealand Medical Radiation Technologists Board (MRTB).

Eligibility
To gain admission to the Magnetic Resonance Imaging, Ultrasound or Medical Imaging specialisations a student needs to have completed an undergraduate degree in Medical Imaging or an equivalent qualification, and hold current registration with the New Zealand Medical Radiation Technologists Board or as a Medical Radiation Technologist in their country of domicile. In the case of a student who has completed a University of Auckland approved Radiology/Medical Imaging/BreastScreen Aotearoa department.

Duration and points value
Postgraduate diplomas (PGDipHSc) can be used to give students a postgraduate qualification in an area of interest, or in which they have some professional involvement. The PGDipHSc (MRI), PGDipHSc (Ultrasound) and PGDipHSc (Medical Imaging) programmes offer courses suitable for registered Medical Imaging Technologists who wish to advance their career and/or professional development. Within the Medical Imaging specialisation, students can choose their own combination of courses to suit their professional needs or follow prescribed pathways in Nuclear Medicine or Image Evaluation.

The PGDipHSc (MRI), PGDipHSc (Ultrasound) and PGDipHSc (Medical Imaging – Nuclear Medicine pathway) programmes provide a route to registration for Magnetic Resonance Technologists, Sonographers and Nuclear Medicine Technologists in New Zealand. These programmes have been accredited by the New Zealand Medical Radiation Technologists Board (MRTB).

Eligibility
To gain admission to the Magnetic Resonance Imaging, Ultrasound or Medical Imaging specialisations a student needs to have completed an undergraduate degree in Medical Imaging or an equivalent qualification, and hold current registration with the New Zealand Medical Radiation Technologists Board (MRTB).

Eligibility
To gain admission to the Magnetic Resonance Imaging, Ultrasound or Medical Imaging specialisations a student needs to have completed an undergraduate degree in Medical Imaging or an equivalent qualification, and hold current registration with the New Zealand Medical Radiation Technologists Board (MRTB).

Regulations
Detailed information on admission criteria, programme structure and content, and the schedule of courses can be found in the Calendar Regulations for the Postgraduate Diploma in Health Sciences. www.auckland.ac.nz/pgdiphsc-regulations

Transfer Credits, Cross-credits and Reassignments
Transfer credits (credit from another tertiary institution) may be awarded for a maximum of 30 points provided that the enrolment in the postgraduate qualification at the University of Auckland is no later than three semesters from the initial enrolment in the course(s) for which credit is to be given. This must be applied for at the time of admission to the postgraduate diploma programme. Transfer credit will not be given for courses from completed qualifications.

Credit from a postgraduate certificate
In the case of a student who has completed a Postgraduate Certificate for which credit is granted to a Postgraduate Diploma, admission to the Postgraduate Diploma must take place within two years of completion of the Postgraduate Certificate.

In addition, the requirements for the postgraduate diploma must be completed within five years of enrolment.
The Degree of Master of Health Sciences – MHSc

The regulations for this degree are to be read in conjunction with all other relevant statutes and regulations including the Academic Statutes and Regulations.

Admission
In order to be admitted to this programme, a student needs to have completed the requirements for the Postgraduate Diploma in Health Sciences, or it's equivalent with an average grade of 8 or higher and not exceed 160 points for the total enrolment for this degree.

A 120 point thesis or research portfolio may be started on 1 March, 15 July or 1 December and must be completed within 2 years if enrolled part time.

Research Masters
120 points: HLTHSCI 796 Thesis
OR
120 points: HLTHSCI 797 Research Portfolio
OR
90 points: HLTHSCI 793 Research Portfolio
AND
30 points from courses listed in the Master of Health Sciences Schedule

Taught Masters
60 points: HLTHSCI 790 Dissertation
AND
60 points from the courses listed in the Master of Health Sciences Schedule

Postgraduate Diploma
60 points: POPUHLT 755 Applied Research Project
AND
60 points from the courses listed in the Master of Health Sciences Schedule

Contact
Medical Imaging Masters Advisor
Associate Professor Jenny Sim
Email: j.sim@auckland.ac.nz

Thesis, dissertation or research portfolio?
This is usually decided in consultation with an academic supervisor/adviser as part of the discussion on a suitable topic and research question.

The aim of the research, whether a thesis, dissertation or research portfolio, is to give you the opportunity to research a health issue and the following skills will be learned in the context of your specific project:

- Identifying and accessing the resources necessary to undertake the research
- Reviewing and analysing relevant literature
- Choosing a research methodology appropriate to the problem and scope of the study (depending on whether the project is a dissertation, thesis or portfolio) and rigorously applying that methodology whether it be qualitative, quantitative or conceptual.
- Reporting the project by covering purpose, background, method, findings, conclusions, and recommendations.
- Interpreting the findings and identifying the wider implications of the project especially for healthcare in New Zealand.
- Identifying and addressing ethical issues.

Scope of a thesis
A thesis constitutes 90 points (audiology) or 120 points (all others) and is a formal body of academic research which should display the following:

- It should constitute an investigation designed to analyse a proposition, problem area, or concept.
- It should display a critical approach to the topic.
- Relevant research literature will be reviewed, and will make clear the parameters used for including literature and the search strategy.
- Implications of the study and recommendations for theory and/or practice and for future research will be specified.
- The final document will meet standards of technical accuracy in writing and presentation, readability, debate and analytical thinking.
- Its length may vary but is expected to be about 40,000 - 50,000 words, including tables, figures and references, appendices can be additional.

The thesis should meet standards of technical accuracy in writing and presentation, readability, debate and analytical thinking.

Scope of a dissertation
A dissertation, at 60 points, may also be a formal academic research work, though with lesser workload and expectation than a thesis. It may also be a critical review or a comprehensive proposal for a research that may involve a pilot study, or analysis of data that has already been collected. On completion of a dissertation students should have demonstrated that they understand, can interpret, and critique research.

The topic of a dissertation is preferably uncomplicated by requirements such as ethics approval or sample recruitment.

The expectations of a dissertation are:
- The dissertation should comprise a coherent and competency organised document.
- The rationale for the study should be clear, with a soundly constructed research question and objectives identified clearly.
- Relevant research literature will be reviewed, and will make clear the parameters used for including literature and the search strategy.
- Implications of the study and recommendations for theory and/or practice and for future research will be specified.
- The final document will meet standards of technical accuracy in writing and presentation, readability, debate and analytical thinking.
- Its length may vary but is expected to be about 20,000 words in length, including tables, figures and references, appendices are additional.

Postgraduate Diploma in Health Sciences (Medical Imaging) student Zoe Campton works for Auckland District Health Board as a Medical Imaging Technologist.

“I love learning new things and doing my postgraduate diploma has given me a way to enhance my interests in image evaluation and clinical supervision. I started out by enrolling in a Postgraduate Certificate, and because I enjoyed it so much, this soon became a Diploma; and now I’m enrolling in a Masters!

“I’m currently working in a general x-ray department at a major trauma/teaching hospital so all of my courses have been relevant to what I do at work. I particularly like the image evaluation aspect of my programme, and the fact that the tests and assignments continue to challenge me and keep me on my toes. I also enjoy being able to help the students at my workplace with their learning – if I feel like I can answer most of their questions without having to refer to a textbook now! The on-campus events are a great way to meet other Medical Imaging students, and a great way to put a face to the names you read online. The lecturers are fantastic and are always around to answer questions, and the other students I have been studying with are now good friends of mine which is a great support network as we can bounce ideas off each other.

‘Postgraduate study is challenging, but it is so rewarding. Finding that work/life/study balance has been hard, but the knowledge I have gained has been worth the extra work. I feel more confident in clinical decision making is a huge benefit of my studies and the knowledge I have gained has been worth the extra work. I feel like I understand why we need to take certain images for individual pathologies now, and I can appreciate the reasoning behind protocols. It is also really satisfying to recognise something on an image and then follow up and realise you got it right!’

Eligibility for entry, timeframes and regulations

Student profile: Zoe Campton
New students

Admission
For information regarding application for admission in 2016, students should visit The University of Auckland website: www.auckland.ac.nz/admission-and-enrolment
All students need to provide the documents listed below with their application. These should be a photocopy of the original endorsed with the statement Original sighted. Certified true copy signed by a person authorised to sign a Statutory Declaration, such as a JP, Solicitor or a duly authorised member of staff of The University of Auckland.
- Verification of legal name, date of birth and citizenship status: passport, birth certificate or certificate of citizenship. If names have been changed, for example through marriage, such documentation must be provided.
- Verification of admission qualifications: your highest qualification, eg, hospital training certificate, polytechnic diploma, polytechnic degree, or university degree.
- If you hold a Polytechnic diploma or University or Polytechnic degree you must send in an official academic transcript.
- For Mammography, MRI, Nuclear Medicine and Ultrasonography students, a completed clinical training position agreement form is required.

Admission without an undergraduate degree
The University of Auckland allows MRTs to enrol in a postgraduate certificate without an undergraduate degree. If they have a health professional qualification in a radiation therapy discipline and at least two years practice. Upon successful completion of a postgraduate certificate students may credit their certificate courses to a postgraduate diploma. Achievement of a grade point average of 8 or higher in the postgraduate diploma allows students to proceed to the MRT.

Admission with a postgraduate diploma
Students with a postgraduate diploma having achieved a grade point average of 8 or higher may apply for the Master of Health Science.

What’s the difference between admission and enrolment?
They are two separate processes. First you must be admitted to the University (through the admission process), and then you can enrol in the individual courses you want to take.
New students – do this first:
1. Sign into Student Services Online (SSO).
2. From the home page quick link menu, click 'Enrol in your chosen courses via the online Student Services Online system':
3. Accept an Offer of Place
4. Enrol in the course
5. If the option to apply for a concession (prerequisite) is not available for this course.
6. Click the ‘Concessions button under the error message. The ‘Apply for a concession page’ will appear, showing the courses you selected from your enrolment cart.
7. Select a course (Subject/Catalogue) for which you want to apply for an enrolment concession.
8. Enter a clear description of why you think you should be allowed to enrol in this course.
9. Click the Submit button. The ‘Concessions’ confirmation page will appear.

Enrolment
Once you have gained admission to the programmes of your choice, you should enrol for your courses online for future semesters: www.studentservices.auckland.ac.nz/oa/

Help and guidance on the enrolment process can be found on:
www.auckland.ac.nz/enrolment

Applying for an enrolment concession
For some courses you may be asked to apply for an enrolment concession. Please follow these step-by-step instructions:
1. Sign into Student Services Online.
2. Begin enrolling in the course.
3. Ignore validation error messages about the reason you need to apply for an enrolment concession.
4. Continue enrolling online until the final stage, which is after you have accepted the terms and conditions of enrolment. The enrolment error message will appear.
5. If the option to apply for a concession is available for the enrolment you want to complete, a Concessions button will show below the error message table. If the button’s not there, it means concessions for that enrolment error (such as a missing prerequisite) are not available for this course.

Apply for a place in a programme(s)
Go to www.auckland.ac.nz
Click on the red ‘Apply now’ button.
Complete the online application for a place in your programme of choice before the closing date.
For assistance please phone the student helpdesk on: 0800 61 62 65
You will receive an acknowledgement of your application asking you to provide specific verified documentation before your application can be assessed. It will also tell you how to access the University’s Student Services Online system to complete the next steps.

Offer
Your application will be assessed and if successful, you will receive an ‘Offer of a place in a programme’. To accept the offer and view your application status online go to: www.studentservices.auckland.ac.nz/oa/

Accept
Accept or decline your offer of a place in a programme online.
Enrol in your chosen courses via the online Student Services Online system:
www.studentservices.auckland.ac.nz/oa/soo-enrol-in-course

Congratulations! You are now a student at the University of Auckland

How to apply and enrol online

Returning students
Returning students wishing to progress to another qualification should apply online. For example, students who have completed a postgraduate certificate wishing to progress to a postgraduate diploma.

Change of address
It is important that students notify the University of any change of address as soon as possible. Please update your personal details through Student Services Online (Update My Details): www.studentservices.auckland.ac.nz/oa/

Postgraduate office contact details
For general enquiries and information on postgraduate study matters contact:
Faculty Student Centre
Faculty of Medical and Health Sciences
The University of Auckland
Private Bag 90109, Auckland 1142, New Zealand
Phone: +64 9 923 9760
Fax: +64 9 308 2380
Email: fmhs@auckland.ac.nz
Website: www.fmhs.auckland.ac.nz/postgrad

Physical address:
Building 503, Ground floor,
Faculty of Medical and Health Sciences
85 Park Road, Grafton, Auckland
Admission, enrolment and fees

Fees
Information about fees is listed in The University of Auckland Calendar 2016 and is available at: www.auckland.ac.nz/uoa/fp-tuition-fees.

Under government-to-government reciprocal agreements students from Australia and resident in New Zealand enrolled in a graduate programme pay the same fees as New Zealand students. For other international students the fees vary between faculties. Contact The University of Auckland International Office for further details.

Tuition fees 2016

<table>
<thead>
<tr>
<th></th>
<th>Domestic students</th>
<th>International students</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIMAGE courses</td>
<td>$1,092.30</td>
<td>$5,079.15</td>
</tr>
<tr>
<td>CLINIMAG courses</td>
<td>$1,092.30</td>
<td>$8,863.80</td>
</tr>
</tbody>
</table>

University awards, scholarships and grants
The University of Auckland offers postgraduate students a wide range of awards, scholarships, and research grants. For more information on funding: www.auckland.ac.nz/uoa/cr-postgraduate-research-funding.

For information on internal scholarship opportunities, see the University of Auckland Scholarships and Awards website: www.auckland.ac.nz/uoa/scholarships or email: scholarships@auckland.ac.nz.

For information on a range of external awards, see the Universities NZ website: www.universitiesnz.ac.nz.

For a list of upcoming Scholarships closing soon, see “Scholarship closing dates”: www.auckland.ac.nz/scholarships-closing.

University of Auckland Masters, Honours and PGDip Scholarships
The University of Auckland Masters, Honours and PGDip Scholarships are highly competitive and are awarded to the very highest achieving students. In the recent past the GPA of successful recipients has been around 7.50 or above (assessed by the Scholarships GPA over the last two years of full-time graded study, or equivalent.). Māori and Pacific Island students are encouraged to also apply for the University of Auckland Māori and Pacific Graduate Scholarships.

Changing programmes

Students enrol in the programme specific to their clinical specialisation. If for any reason a change of programme is required, students must first contact the Medical Imaging Programme Coordinator by email at medicalimaging@auckland.ac.nz.

When a decision to change programmes has been approved, then the student needs to apply to do so, on Student Services Online (SSO) at the following link: www.studentservices.auckland.ac.nz.

Apply to change your programme

To change your programme at The University of Auckland, you simply apply for the new one online. This applies to students who are changing from a postgraduate certificate to postgraduate diploma programme when a clinical training position is secured.

If you receive and accept an offer of place for the new programme, you should withdraw from your current programme by contacting the Faculty student centre.

Website: www.auckland.ac.nz/uoa/cr-sf-faculty-student-centres

Apply to change your plan

If you want to change your plan (major, minor or specialisation) but not your programme (degree, diploma or certificate), please contact your Faculty student centre. This applies to students who are enrolled in the Postgraduate Diploma (Medical Imaging) or a generic postgraduate diploma in Health Sciences and need to change specialisation when securing a clinical training position.

Faculty Student Centre
Ground floor, Building 503, Faculty of Medical and Health Sciences, 85 Park Road, Grafton, Auckland
Phone: +64 9 308 2380
Fax: +64 9 308 2380
Email: fmhs@auckland.ac.nz

Changing course enrolment

Deletions
If you drop (delete) a course by the deadline, we’ll refund your fees for the course and it will not appear on your academic record.

Deadline for Deletions
Semester One courses: second Friday of semester
Semester Two courses: second Friday of semester

Withdrawals
A withdrawal is when you drop a course after the deadline.

If you are considering withdrawing from a course, think this decision through carefully and seek help and advice before proceeding.

If you withdraw from a course, please be aware that:
- You will not receive a refund of fees for the course(s) you withdraw from.
- The course will remain on your academic record as a Withdrawal (W), which is counted as a 0 (zero) when your GPA is calculated.
- The course you withdraw from is counted as a failed course for purposes such as student allowance applications and satisfactory progress regulations.

Deadlines for Withdrawals
Semester courses: 3 weeks before the end of lectures

Late Deletion
Late Deletion is available to students who are unable to continue with their study because of exceptional circumstances such as illness, injury or events beyond their control. Applications must include independent evidence to verify the circumstances.

Circumstances that would not normally qualify for late deletion are situations that were known at the point of enrolling, were due to personal choice (eg financial circumstances, accepting a job offer) or Grade Point Average concerns.

Please contact the Medical Imaging Programme Coordinator by email at medicalimaging@auckland.ac.nz so that they can explain how this process may impact on your programme and progression - you will not be required to explain your circumstances.

Graduation
When you have successfully completed the requirements for a postgraduate diploma or masters programme, you are invited to apply to graduate online. There are two graduations each year, one in autumn in early May, and one in spring towards the end of September. More information: www.auckland.ac.nz/graduation.

Certificate completion
Students do not attend a graduation ceremony on completion of a postgraduate certificate - the certificate needs to be requested from Student Records, City Campus, by emailing: records@auckland.ac.nz with your student ID number and current address.
The University of Auckland
resources and facilities

Libraries and Learning Services
Libraries and Learning Services provide resources, workshops and advice to support staff and students in their teaching, learning and research activities. The Philson Library, Grafton Information Commons, Medical Imaging Subject Librarian and Student Learning Advisors all offer resources and advice to help you succeed in your postgraduate study.

Philson Library
Medical and Health Sciences
The Philson Library is located on the first floor, Building 523 on the Grafton Campus. The collection of print and electronic resources supports student learning and research, staff will assist you to find the information you need. There are computers, borrowable laptops, and printer/photocopiers available in the library along with group and individual study spaces.

For full contact details and opening hours go to: www.library.auckland.ac.nz/about-us/libraries/philson

To borrow or access resources from the Philson Library students need a current University ID card. For more information see: www.auckland.ac.nz/uoa/campus-id-cards

Libraries and Learning Services website
www.library.auckland.ac.nz

The Libraries and Learning Services website provides access to various online resources and guides including information about referencing. For specific resources in the Medical & Health Sciences including Medical Imaging go to the Libraries and Learning Services website, select: Subject Guides — Medical & Health Sciences

Flexible Service – distance students
A flexible service is available to students of the Faculty of Medical & Health Sciences. You may request books or journal articles to be sent to you, whether or not they are held in a University of Auckland Library. For more information: www.library.auckland.ac.nz/flexible-service

Intercampus requests
The intercampus service allows you to obtain books or photocopies of articles held in other libraries within The University of Auckland, e.g. Tamaki Library, General Library. Search the Catalogue for the item you require, click on the ‘Request’ tab and fill in the appropriate details. Flexible students should select ‘Flexible – Medical’ as the pickup location (after registration, see Flexible Service above).

Interloan requests
To obtain books or journal articles not held in a University of Auckland Library, fill in the online form. www.library.auckland.ac.nz/interloans

Note: Electronic delivery of articles to students by email can only be made to their University of Auckland email address.

Subject Librarian: Fran Clements

Fran Clements
Subject Librarian. School of Medical Sciences
Philson Library/Te Whare Hauora
The University of Auckland
Private Bag 92019
Auckland Mail Centre
Auckland 1149
New Zealand

Direct Dial: (09) 933 9111
Internal: ext. 89110
Fax: (09) 373 7491
Email: f.clements@auckland.ac.nz

Copy and print service
Photocopying and printing services are available in the Philson Library and the Grafton Information Commons. Your University ID card is your photocopying/printing card. An ePOS machine for loading money onto an ID card is located in the Grafton Information Commons. The cost is 20 cents per A4 copy, or 20 cents per A4 colour copy.

Grafton Information Commons
Offers more than 80 computers which provide access to a wide range of software and internet resources. In addition there are scanners, printer/photocopiers, a HelpDesk Service, and a range of casual seating.

After hours
Students and staff will need to carry their university ID and access cards at all times to allow entry and internal movement around the Grafton Campus buildings and facilities. However, public access to the CIH and library will continue to remain available during normal opening hours.

The atrium main entrance is open Monday to Friday at 7am and its closure depends on the library hours. During weekends it is open according to the library.

Students may be in the building when the library or Information Commons is open if they have scheduled teaching or tests. Postgraduates may have access outside of these times if permission is obtained from a supervisor; however nobody may be here alone at any time.

University of Auckland Systems

Username and password
All students have a username and password, in addition to your University ID number. Your username and password allow you to:

• Log into computers in the library, Information Commons and computer labs.
• Access Library electronic resources off campus, i.e. databases, e-journals and course readings.
• Access the internet on campus.
• Use the Copy and Print Service (CAPS) on campus.
• Access Student email.
• Access Canvas and Student Services Online (SSO).

Student email
Each student is allocated an email address. Your address is your username then the electronic campus email address. E.g. jbon007@aucklanduni.ac.nz

To access your email from The University of Auckland website, use the Quick Links dropdown menu and select Student email.

www.auckland.ac.nz

AMRF Medical Sciences Learning Centre
AMRF Medical Sciences Learning Centre - Whakaaro Pai

Student Services Online
Student Services Online is the University’s academic management system, which students access online.

Student Services Online allows you to apply for admission to the University, enrol in classes, update your details and much more.

Website: www.studentservices.auckland.ac.nz
Phone: 0800 61 62 83
Email: studentinfo@auckland.ac.nz

Use Student Services Online to:
• Find out about courses available.
• View your programme requirements.
• Enrol in and delete courses.
• Keep contact details updated.
• View your academic records.
• Apply for graduation.
• Change your programmes.

Student Services Online has video tutorials and an online Help function, to guide you through using the various features.

AMRF Medical Sciences Learning Centre - Whakaaro Pai

Student Advice Hub
We’re here to help!
Unfortunately, life and studies sometimes don’t run as smoothly as you hope. The Student Advice Hub is where you can access AUSAs advocacy, welfare and representation services when things go wrong. We offer free and confidential support to all students, and are independent from the University. Our staff can help you with:

• Academic complaints and study problems
• Debt or funding issues
• Housing and tenancy queries
• Employment issues and much more!

Visit us at the Student Advice Hub in Old Choral Hall rooms G15 or G09. You can also contact us or make an appointment at:

Email: cityhub@ausa.org.nz
Phone: 09 933 7399 or ext. 87994

...continued
Support for postgraduate study

English Language Enrichment (ELE)

ELE provides opportunities for any student enrolled at the University of Auckland to improve their academic English. At ELE on the City Campus you can use English language resources, get advice about your English, and join language learning groups. Visit whenever you like and for as long as you like.

Language Exchange (LEX) enables you to find others who can help you improve your spoken English, and ELE Online provides language learning materials, including vocabulary, grammar and pronunciation tools to help improve your academic English.

You can access these resources anytime, anywhere with your University username and password.

Email: sls.ele@auckland.ac.nz
Website: www.library.auckland.ac.nz/lexk/

Orientation to study for new Medical Imaging students

Each semester the Medical Imaging team in conjunction with the Libraries and Learning Services runs an on-campus orientation workshop for new students. All students who are new to study at the University of Auckland are strongly advised to attend. There is no charge associated with the orientation days.

The Medical Imaging Team sessions include:
- Logistics for getting started
- Online learning tools
- Clinical competency requirements
- ePortfolios

The Student Learning Services sessions include topics such as:
- Managing your postgraduate studies
- Achieving your academic potential
- Understanding expectations for postgraduate writing
- Reviewing the literature
- Academic integrity

The Library sessions include:
- Accessing library resources
- Using the library catalogue
- Finding electronic articles
- Searching databases to find information for your assignments
- Referencing

Academic integrity course

As a student of the University of Auckland, you are a member of a distinguished academic community. The University is committed to providing all the support you need to understand what working to a high level of academic integrity means for you. University-level work requires that you acknowledge all sources according to the referencing requirements of your subject.

The University of Auckland offers an Academic Integrity course to help you understand the high level of academic integrity expected of you. All students new to the University are required to complete the course.

For more information, visit www.auckland.ac.nz/academic-integrity

Supporting websites

The University home page

Access to a computer is essential for all postgraduate students. So is knowing your way around the University’s website. Take some time to familiarise yourself with it at:

www.auckland.ac.nz

Quicklinks:

To access the Faculty's Quicklinks, go to the top right-hand corner dropdown list. There you will find the following quick links:
- A to Z directory
- Accommodation
- Canvas (access your course information here)
- Student Services Online (access your personal information here)
- University calendar
- Student email (access your University email account here)
- Password change (to get a new or reset password)

Current students

If you click on Current Students in the left side bar menu you can access most of the generic information you will need.

Our Faculty of Medical and Health Sciences website

www.fmhs.auckland.ac.nz

Clicking on Future Postgraduates on the left side bar menu takes you to information about a range of supporting facilities and services for postgraduate students.

Under postgraduate study options, you can find details of our programmes and view individual MEDIMAGE and CLINIMAG course pages which have a downloadable Course Outline.pdf with details of the course including learning outcomes, assessment overview and required textbooks where applicable.

Quicklinks:

To access the Faculty’s Quicklinks, go to the top right-hand corner dropdown list. There you will find the following quick links:
- Canvas
- Change password
- Student email
- Student Services Online
- Libraries and Learning Services
- University Calendar

The Medical Imaging discipline website

www.auckland.ac.nz/medical-imaging

Go to our website for more information about our programmes, the Medical Imaging team, our vision and mission, and to access our Insight newsletter for the Medical Imaging professional community.
Important dates

Closing date for applications 2016*
Semester One admission 15th January 2016
Semester Two admission 6th June 2016
*Late applications will be accepted on a case by case basis

Academic Year

Semester One – 2016
Semester One begins Monday 29 February
Medical Imaging Orientation Monday 29 February and Tuesday 1 March
Easter break Friday 25 March - Tuesday 29 March
Medical Imaging Symposium Monday 11 April - Wednesday 13 April
Mid-semester break Monday 18 April - Saturday 23 April
ANZAC Day Monday 25 April
Graduation Monday 2, Wednesday 4, Friday 6 May
Lectures end Friday 3 June
Study break Saturday 4 June - Wednesday 8 June
Queen’s Birthday Monday 6 June
Semester One ends Monday 27 June
Inter-semester break Tuesday 28 June - Saturday 16 July

Semester Two – 2016
Semester Two begins Monday 18 July
Medical Imaging Orientation Monday 18 July and Tuesday 19 July
Mid-semester break Monday 29 August - Saturday 10 September
Graduation Tuesday 27 September
Lectures end Friday 31 October
Study break Saturday 31 October - Wednesday 16 November
Labour Day Monday 24 October
Semester Two ends Monday 14 November

Semester One – 2017
Semester One begins Monday 6 March 2017

It is the student’s responsibility to check that the final programme complies with University Regulations. The Faculty of Medical & Health Sciences Student Centre is the final authority on all programme regulations.

Medical Imaging Degree Planner

(2017 regulations)

See the Faculty of Medical & Health Sciences Student Centre for degree planning advice.

A postgraduate pathway for:

Pathway endorsed by:

Postgraduate Certificate in Health Sciences (PGCertHSc)
60pts – 2 years part time

Postgraduate Diploma in Health Sciences (PGDipHSc)
120pts – 4 years part time

Master of Health Sciences (MHSc)120pts + PGDipHSc*
Combine to make 60 points
15pts
Combine to make 120 points
15pts

Option 1
Research Masters
Thesis (120 pts)
or
Research Portfolio (120 pts)

Option 2
Research Masters
Research Portfolio (90 pts)
and
30 pts of courses

Option 360 pts of courses
and
Dissertation (60 pts)

* B Grade average (GPA5) required to progress to Masters

If completing a Master of Health Sciences with a Thesis or Research Portfolio, then a research course is a prerequisite.

For more information about courses and course dates, see our website: www.fmhs.auckland.ac.nz/medical-imaging

For more information about enrolment contact the Faculty Student Centre: fmhs@auckland.ac.nz
Medical Imaging contacts

For academic or general Medical Imaging programme enquiries contact:
medicalimaging@auckland.ac.nz

For Medical Imaging clinical programme enquiries contact:
MIclinical@auckland.ac.nz

Faculty of Medical and Health Sciences Student Centre
Ground floor, Building 503
Faculty of Medical and Health Sciences
85 Park Road, Grafton
Auckland
Phone: +64 923 2760
Fax: 0800 61 62 64
Email: fmhs@auckland.ac.nz
Open: 8.30am-4.30pm, Monday to Friday,
all year round (except public holidays,
Christmas Eve, and the day after Easter
Monday)

Postal Address
The University of Auckland
Private Bag 92019
Auckland 1142, New Zealand