

# GRADUATE DIPLOMA IN MEDICAL ULTRASOUND FREQUENTLY ASKED QUESTIONS

## General Questions

### What is a sonographer?

A sonographer uses ultrasound (high frequency sound waves) to produce images of body organs, tissues and blood flow to diagnose and monitor a range of health conditions. They are highly specialised imaging professionals who are required to undertake post graduate qualifications and commit to a lifetime of continuing professional development and lifelong learning.

The Australasian Sonographers Association note that:

Sonographers are highly educated and have core knowledge and skill in the following areas:

- Applied anatomy, physiology and pathophysiology
- Application and operation of ultrasound imaging systems
- Ultrasound image recognition and comprehension
- Patient assessment, care and communication
- Critical thinking skills and clinical acumen
- Highly developed specific motor skills
- Ultrasound physics
- Occupational health and safety
- Infection control
- Quality assurance

<http://www.sonographers.org/our-profession/sonography/what-is-a-sonographer/>

## What work can I do once qualified?

A sonographer with a general ultrasound qualification can undertake examinations of the abdomen, pelvis, neck, breast, vascular system, musculoskeletal system, paediatrics and obstetrics and gynaecology. Sonographers may choose to specialise in a given discipline area or work across all areas.

## What about cardiac sonography?

Cardiac ultrasound is not covered in a general sonography course and requires a separate postgraduate qualification.

## Is there a shortage of qualified sonographers?

Definitely. There are currently only 4621 Accredited Medical Sonographers (general sonography) on the ASAR Registry (November 2018). The skills shortage has been recognised by the Government since 1993. State based occupational reports for sonography are available at <https://docs.jobs.gov.au/collections/sonographer-occupational-reports>

## Why is it so hard to get a training position?

The critical shortage of ultrasound training positions has been well known within the industry for many years, with professional bodies, course providers and the Government recommending strategies to mitigate the situation, with very little success.

The sustained skills shortage of qualified sonographers and increases in demand for sonography services have resulted in many ultrasound service providers ceasing to provide training positions for student sonographers.

## Is the UC ultrasound course accredited?

Yes. The Graduate Diploma of Medical Ultrasound course is accredited by the Australian Sonographer Accreditation Registry.

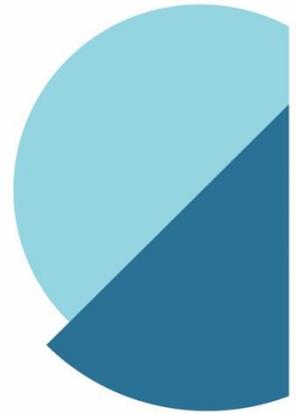
## What is the ASAR?

The ASAR maintains the register of accredited sonographers on behalf of Medicare Australia and liaises with Medicare Australia to ensure the register held by Medicare Australia is up to date.

More information can be found at <https://www.asar.com.au/about-asar/about-asar/>

## Should I apply to the ASAR for Accredited Student Status?

You only need to apply to ASAR for student sonographer accreditation if you are working in an ultrasound department and scanning patients for whom your employer claims a Medicare Australia rebate. If you are not scanning in these circumstances, there is no reason to be on the ASAR Registry.



## Entry requirements

### Is it easier to obtain a training position if I have a medical imaging background?

Probably. Employers often prefer to provide ultrasound training to current medical imaging staff. This is often an incentive offered to employees. Staff with a medical imaging background can be redeployed to other areas, such as CT or general x-ray if a need arises.

Some employers are willing to take on trainees without a medical imaging background. Sonographers come from a diverse range of backgrounds, with approximately 30% of sonographers having a non-medical imaging background.

### Why do I need two units of degree level anatomy and physiology as a pre-requisite to entry?

We assume that you have a thorough understanding of human anatomy and physiology, particularly the structures and systems relating to the abdomen, pelvis, neck, vessels and soft tissues. The course does not teach you this, but rather, builds on your prior knowledge so that you can recognise normal and abnormal imaging appearances.

### Can I undertake the pre-requisite units in anatomy and physiology concurrent with my enrolment in the course?

No. You will need to show that you have successfully completed the units prior to enrolment. If you have no medical related background you can expect to be on a very steep learning curve, as the two units will not cover everything you need to know, so you should expect that you'll need to undertake a lot of self-directed learning as well.

### What pre-requisite units are recommended?

The university of Canberra offers two units; 6529 Systemic Anatomy and Physiology and 9808 Regional Anatomy and Physiology. These units have on-campus, compulsory laboratory components and require you to attend the sessions.

Other units may be undertaken from other universities. Ideally you should find units that cover the structure and physiology of the following body systems; cardiovascular, endocrine, respiratory, gastrointestinal, renal, reproductive, musculoskeletal and nervous systems. You will need to understand how these systems function and interact with each other and the rest of the body to maintain homeostasis.

### Do I need any other special entry requirements?

Depending on your clinical training site, it is likely you will need to undertake additional requirements such as a Working with Children check, Criminal Record check, immunisations, First Aid certificate, Manual Handling, etc.



## Course requirements

### What would my enrolment pattern look like?

Semester 1 commencement (361JA)

Year	Semester 1	Semester 2
Year 1	10159 Ultrasound Physics and Instrumentation 10160 Introduction to Ultrasound	10161 Abdominal Ultrasound 10164 Paediatric and Superficial Parts Ultrasound
Year 2	10162 Obstetric Ultrasound 10163 Vascular and Postoperative Ultrasound	10165 Musculoskeletal Ultrasound 10166 Sonographic Practice Capstone

Semester 2 commencement (361JA)

Year	Semester 1	Semester 2
Year 1		10160 Introduction to Ultrasound 10161 Abdominal Ultrasound
Year 2	10159 Ultrasound Physics and Instrumentation 10164 Paediatric and Superficial Parts Ultrasound	10165 Musculoskeletal Ultrasound 10163 Vascular and Postoperative Ultrasound
	10162 Obstetric Ultrasound 10166 Sonographic Practice Capstone	

### How do the two pathways work?

There is a 'traditional' pathway for students who have obtained a training position. These students work in an ultrasound department a minimum of three days per week and study the course online.

The 'supported' pathway is for students who do not have a training position. These students can undertake the first two units, Introduction to Ultrasound and Ultrasound Physics and Instrumentation online. The next two units, Abdominal Ultrasound and Paediatrics and Superficial Parts Ultrasound are offered on campus. Sonographer academics will teach you scanning techniques in the ultrasound laboratory to the level of advanced beginner. It is hoped that this will make you more employable as sites would then have a new trainee already familiar with the equipment and able to do basic scanning, bypassing the early training burden. Students on this pathway cannot progress to complete the course without a training position.

### **What facilities does the university have to develop clinical skills?**

Students enrolled in the two clinical based units on the supported pathway have access to clinical and academic sonographers. The UC laboratory is equipped with four state of the art ultrasound machines for live scanning. In addition, there are two simulation systems, a male abdomen phantom, and a female obstetric phantom, along with pelvic and breast phantoms.

Students will be offered a weekly tutorial in each unit and are provided with 24/7 swipe card access to the UC ultrasound laboratory to practice their skills. Students can develop their hands-on, clinical skills by scanning student peers and volunteers.



### **Why can't UC provide the all necessary clinical training?**

To meet the graduation requirements, all students must demonstrate competence in a range of examinations. To develop competence, you need to develop skills on a range of patients with a diverse range of pathological conditions. We cannot replicate the workplace in the laboratory.

## Is it safe to scan or be scanned by other students?

Ultrasound imaging has no known adverse effects. Students will be asked to volunteer to be scanned by staff and other students. This will involve exposing parts of your body, such as your neck and upper abdomen. More intimate examinations will be undertaken on simulation phantoms.

## What if I'm on the supported pathway and I can't make it to the on-campus workshops, laboratory sessions or classes?

Workshops are optional in the Introduction to Ultrasound and Ultrasound Physics and Instrumentation units. The next two units, Abdominal Ultrasound and Paediatrics and Superficial Parts Ultrasound you will need to attend the campus to develop the necessary clinical skills. If you cannot attend the campus, you should not enroll in these units unless you have a training position.

## There are practical sessions/days scheduled for some of the course units (e.g. Abdominal Ultrasound). Can those practical days be done in an intensive one-week or two-week block on UC campus (instead of travelling to the Canberra campus every week for two days)?

No. Ultrasound clinical skill development requires regular hands-on practise in conjunction with theory. Students need to develop their skills beyond the time provided in classes to meet the minimum required level of advanced beginner in each of the clinical units.

## In what practical ways are distance students supported during their studies?

The course can be studied entirely online provided you have obtained a training position. For students on the supported pathway the on-campus laboratory sessions and tutorial classes will allow you to develop the necessary clinical skills required to pass the unit.

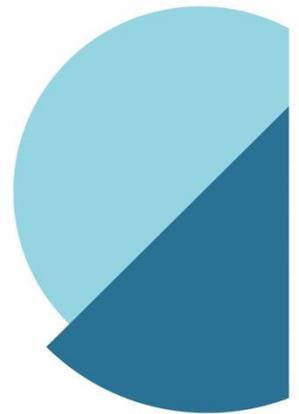
Units have varying support resources, from live online tutorial/lectures to face to face workshops. Resources are provided including recorded lectures, links to external websites and study notes.

Each unit has an online discussion board and students are strongly encouraged to communicate with other students and staff via this resource.

The UC library can assist with provision of ebooks, articles and texts. The staff also offer assistance with a range of support services and resources.

Most assessments are submitted online. Examinations can be taken on-campus, or you can nominate an invigilator and sit them in your home town.

All members of UC are mindful of their need to respond to the professional, educational, health, social, economic and cultural /spiritual needs of students. The range of Student Support services and strategies includes, but is not limited to:



- The University Student Centre provides counselling support and study skills support.
- The Ngunawal Centre assists and supports students who identify as Indigenous Australians.
- Careers UC assists students with information regarding career options and positions that are available to graduates.
- Students with a disability or medical condition that does not impact on their ability to function as a sonography student but who may require additional support are encouraged to contact the Inclusion and Welfare team. Strategies are in place to ensure that appropriate supports are put in place.
- Students who are from a culturally and linguistically diverse background are encouraged to be in contact with the English Language Centre at UC. This service offers culturally sensitive advice to students as well as support and assistance for any student experiencing difficulties with written and/or spoken English at a level required to ensure their academic and practice confidence.
- UC has a Multi-Faith Centre to offer pastoral care for all students and staff.



### **What does a typical study load look like?**

We recommend that you complete the course part time, over four semesters (two years). You may extend this by studying one unit per semester. To meet the clinical requirements students should work a minimum of three days per week in an ultrasound department, under sonographer supervision. The study load, combined with the clinical requirements are intense, and most student feedback recommended no more than two units of study per semester.

This is a course with no short cuts. You cannot graduate without demonstrating clinical competency in the examinations recommended by the ASAR accrediting body. To develop these competencies takes time and significant effort.

### **I applied for on campus study, but my circumstances require me to study via distance. Do I need to re-apply for the distance course or can my study mode be changed on my existing offer?**

As this course is offered flexibly, the on-campus, face to face activities in flexibly delivered units are optional. This means that there is a virtual/online option as well as on-campus option for these units. The remaining units are all delivered online and therefore you will not need to have your offer changed.

### **I've got a strong background in mathematics but limited experience or skills in physics. Do you find someone with strong maths skills is able to get up to speed with the physics components of ultrasound?**

The ultrasound physics and instrumentation unit is certainly challenging, particularly if it's been a while since you've last studied physics or maths. It assumes a HSC level knowledge of physics, however students without any physics background have successfully passed the unit. Strong maths skills are an advantage, however the unit is non-calculus based.



The unit is delivered online, however there are study notes provided as well as recorded lectures/tutorials. Students must try to keep up with the suggested study schedule to stay on top of the materials. Optional on-campus workshops are provided to provide an opportunity to put theory into practice using the ultrasound equipment in the UC ultrasound laboratory.

## **I loved studying human physiology in my undergraduate course. How much content in ultrasound touches on concepts and material from human physiology?**

Knowledge of human anatomy and physiology underpins a sonographer's clinical practice. Students are required to understand normal anatomy and physiology in order to recognise abnormal conditions and image appearances.

## **How much study will be self-directed?**

This is a post-graduate course and will require a large amount of self-directed learning. Some units, such as Ultrasound Physics and Instrumentation are content driven, and you will be guided through the learning materials.

The Introduction to Ultrasound unit is largely self-directed. Students will enrol in this unit with varying levels of anatomy and physiology knowledge. Some will need to undertake additional self-directed study to increase their knowledge. It also has content related to contemporary professional issues. Students will be expected to undertake research to find information to develop informed opinions about the issues.

Students are expected to develop a reflective portfolio throughout the course to chart ongoing skills development and learning experiences. They are expected to actively engage with the profession.

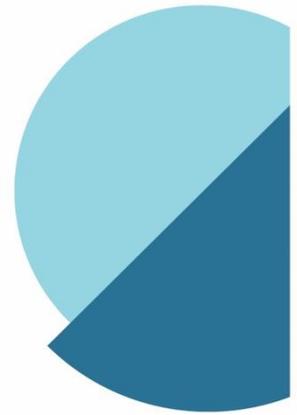
## **Clinical skills development**

### **What does the process of finding a placement usually look like for a student?**

The traditional pathway for UC ultrasound students is that they are in paid employment as a trainee sonographer in a medical imaging practice or hospital and complete the course online.

Obtaining clinical training in ultrasound is extremely difficult. Training positions do occasionally come up in hospitals and private practices, so I would suggest contacting the local hospital medical imaging departments and head sonographers in the radiology practices in your area.

It may take some time to obtain a training position, or you may not find one in the town you would prefer, so some flexibility is a good thing when considering your options. To get a training position you basically have to start knocking on doors.



Most employers seem to prefer students to have successfully completed at least the first two units (anatomy and physics) before they are willing to take them on as trainee sonographers, as it demonstrates student capability and commitment. We are hoping that by further providing you with beginning competencies in a range of exams (through on campus tutorials and lab practice), that employers will be more welcoming. If you wait until you have something to offer skills wise, they may be more receptive.

An increasing number of employers are offering unpaid clinical training.

### **Why 2200 hours?**

ASAR Accreditation guidelines recommend that students are employed in an ultrasound department, under appropriate supervision a minimum of three days per week for the duration of the course. The 2200 hours is roughly equivalent to working three days per week for the duration of the course, as per the ASAR recommendation.

Ultrasound is a very 'hands on' intensive career and you will need to demonstrate competence in a range of examinations, patient types and pathologies prior to graduation. To develop these competencies, you will need consistent application of theory and skills development to become clinically competent.

### **Where can I obtain a training position?**

You can obtain a training position at any ultrasound site provided you have access to appropriate supervision, that is, an Accredited Medical Sonographer

### **What will UC do to help me obtain a training position?**

Please note that the University does not find clinical placements or training positions, but we do our best to help students find appropriate clinical training. UC can work with employers who are willing to provide supernumerary employment or clinical placements through work integrated learning opportunities.

### **Who covers my public liability and professional indemnity insurances?**

Ultrasound students are typically in paid employment, so it is the responsibility of their employer to cover Worker's Compensation cover, etc. Students in supernumerary positions have their Public Liability and Professional Indemnity insurance covered by UC as their clinical experience is a required component of their university enrolment.

### **Can I do my clinical overseas?**

Provided your clinical training is at the Australian standard and you have appropriate supervision, it is possible to complete some of your training overseas. Upon graduation, if you completed more than 40% of your clinical training offshore you may need your qualifications assessed by the Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) Overseas Qualification Assessment Panel. If you successfully obtain a Certificate of Recognition in Ultrasound from ASMIRT you would then be eligible to join the Australian Sonographer Accreditation Registry as an Accredited Medical Sonographer.



## **I've been offered some training, but not three days per week?**

ASAR Accreditation guidelines recommend that students are employed in an ultrasound department, under appropriate supervision a minimum of three days per week for the duration of the course. If you are offered two days per week, you should take the offer. It may take longer for you to develop the clinical competence required for graduation.

## **How far through the course progression are students required to have a clinical placement organised?**

Students can complete the first four units of the Graduate Diploma without a training position.

## **What happens if I can't find a training position?**

You can join the course on the supported pathway, however you will need a clinical training position to be able to complete the final four academic units and the range of clinical experience required to achieve graduation standards.

## **I've heard sonographers suffer a lot of workplace injuries?**

It is true that a large percentage of sonographer's report workplace injuries. Safe ergonomic practice is encouraged to prevent career ending injuries. If you have pre-existing injuries or health conditions, you should seek medical advice before enrolment in the course.

[http://www.sonographers.org/public/12/files/Our\\_Profession/WHS\\_Survey\\_Results\\_2014.pdf](http://www.sonographers.org/public/12/files/Our_Profession/WHS_Survey_Results_2014.pdf)

## **What are the inherent requirements of the course?**

Please see the advice at: [https://www.canberra.edu.au/current-students/canberra-students/student-support/inclusion-engagement/inherent-requirements/health-and-sport/Health\\_IR-Statement\\_Med-Ultrasound\\_.pdf](https://www.canberra.edu.au/current-students/canberra-students/student-support/inclusion-engagement/inherent-requirements/health-and-sport/Health_IR-Statement_Med-Ultrasound_.pdf)

## **Who can I talk to if I have more questions or need advice specific to my situation?**

Please feel free to contact Karen Pollard on 0403 025 129 or [Karen.Pollard@canberra.edu.au](mailto:Karen.Pollard@canberra.edu.au) if you would like to chat further about the complexities of clinical training, or anything else course related.

