Master of Applied Science (Medical Ultrasound) (PH80)

Year offered: 2011
Admissions: Yes
CRICOS code: 043548G
Course duration (part-time): 6 semesters (3 years)
Domestic Fees (indicative): 2011: CSP $3,878 per semester (indicative)
International Fees (indicative): 2011: $11,250 (indicative) per semester
Domestic Entry: February
Total credit points: 144
Standard credit points per full-time semester: 48
Standard credit points per part-time semester: 24
Course coordinator: Chandeep Bakshi
Discipline coordinator: Mr. Chandeep Bakshi
Campus: Gardens Point

Other Majors
See also the separate entry for the following major in this course: Master of Applied Science (Medical Physics).

Career Outcomes
This course is particularly designed for graduates and practitioners in medical ultrasound fields, such as radiographers, and medical imaging and nuclear medicine technologists, who wish to upgrade their qualifications and depth of knowledge in this rapidly developing area.

Course Design
Stage 1— Graduate Diploma (PH71) takes four semesters of part-time study to complete. Students must show that they have access to suitable clinical experience for the duration of Stage 1 before commencing the degree. Lectures are conducted in intensive four- to five-week blocks in each semester. Students undertake clinical experience throughout the semester.

Stage 2— Master of Applied Science (PH80) involves completion of a research project and submission of a thesis. Students can undertake this project externally under QUT staff supervision on appointment of a suitable external supervisor. This stage takes two semesters part-time to complete after successful completion of Stage 1.

Professional Recognition
This course is accredited with the Australasian Sonographer Accreditation Registry.

International Student Entry
These courses are not available to international students.

Limits on grades of 3

A new policy concerning grades of 3 came into effect from 1 January 2009 (QUT MOPP C/5.2). With effect from this date grades of 3 are no longer considered a conceded or low pass but are classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. Further information is available on the Student Services website.

Contact Details
For further information about this course, please contact:

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Email: enquiry.scitech@qut.edu.au

Course structure - First Semester Entry - Part-time Course

STAGE 1: Students must complete the units listed below, totalling 96 credit points:

Year 1, Semester 1
- PCN159 Ultrasonic Examination 1
- PCN162 Principles of Medical Ultrasound
- PCN197-1 Clinical Attachment 1

Year 1, Semester 2
- PCN197-2 Clinical Attachment 1
- PCN356 Ultrasonic Examination 2

Year 2, Semester 1
- PCN297-1 Clinical Attachment 2
- PCN355 Vascular Ultrasound
- PCN357 Advanced Ultrasound Topics

Year 2, Semester 2
- PCN218 Research Methodology and Professional Studies
- PCN297-2 Clinical Attachment 2

NOTES
- The Clinical Ultrasound units PCN197 and PCN297 are 2 semester units.
- Each clinical attachment unit (ie PCN197 and PCN297) involves clinical experience in the order of 3 days per week or equivalent.

STAGE 2
Project over One Semester or Summer Program:

PCN520  Project (Full-time)

Project over Two Semesters:

PCN540-1  Project (Part-time)
PCN540-2  Project (Part-time)

NOTE  A student may request an extension of time in which to submit the project report for assessment. A request for an extension of time up to a maximum of six months shall be made in writing through the Head of School to the Dean. Any request for a further extension, or any request for an extension to a date later than six months after the original due date, shall be made in writing to the Academic Board. The Academic Board may grant the extension under such conditions as it may consider appropriate, or may award the student a “Fail” result in the project unit. A student who has received a “Fail” result in the project unit may re-enrol in the unit only in exceptional circumstances and with the express permission of the Academic Board.

Potential Careers:
Sonographer.

UNIT SYNOPSIS

PCN159 ULTRASONIC EXAMINATION 1
The unit addresses the normal and abnormal anatomy and functions related to gynaecology and obstetrics, the ultrasonic techniques used and the appearance of related images. It includes a study of the technique used in the ultrasonic examination of the abdomen including the appearance on the ultrasound image of normal abdominal anatomy and its alteration by pathological processes.  

Corequisites:  PCN162, PCN197-1  Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

PCN162 PRINCIPLES OF MEDICAL ULTRASOUND
This unit is designed to provide students with a thorough understanding of the physical processes involved in producing an ultrasound image, the features of ultrasound equipment and the role and responsibilities of the sonographer in producing a diagnostic examination. Topics include general scanning principles and considerations, care of equipment, physics of ultrasound, ultrasound equipment features, image production and processing, artefacts, image recording methods, quality control, biological hazards and safety issues, principles of Doppler ultrasound, care of the patient and communication issues.  

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1

PCN197 CLINICAL ATTACHMENT 1
This is a supervised practical program carried out in an approved medical imaging department. Students are required to undertake specified clinical practice as applicable to their area of specialisation and meet minimum requirements of clinical hours and case scope and numbers. (12 credit points achieved at completion of PCN197-1 and PCN197-2.)  

Corequisites:  PCN159 and PCN162  Credit points: 6  Campus: Gardens Point  Teaching period: 2011 SEM-1

PCN197 CLINICAL ATTACHMENT 1
This is a supervised practical program carried out in an approved medical imaging department. Students are required to undertake specified clinical practice as applicable to their area of specialisation and meet minimum requirements of clinical hours and case scope and numbers. (12 credit points achieved at completion of PCN197-1 and PCN197-2.)  

Prerequisites:  PCN197-1  Credit points: 6  Campus: Gardens Point  Teaching period: 2011 SEM-2

PCN218 RESEARCH METHODOLOGY AND PROFESSIONAL STUDIES
In the rapidly changing technological environment of medical physics and medical ultrasound it is essential that students develop basic research skills, data interpretation skills and written communication skills. Topics include the research process, data collection and analysis techniques, and writing and evaluating research reports. Students also require knowledge of the professional, basic management, legal and ethical issues involved in their particular speciality area. Topics include the role and purpose of professional bodies, professional communication, legal and ethical issues, and basic professional management techniques and issues.  

Credit points: 12  Contact hours: 3 per week  Campus: Gardens Point  Teaching period: 2011 SEM-1 and 2011 SEM-2

PCN297 CLINICAL ATTACHMENT 2
This unit includes a period of additional supervised clinical practice designed to expand and refine skills acquired in PCN197. (12 credit points achieved at completion of PCN297-1 and PCN297-2.)  

Prerequisites:  PCN159, PCN197-1, PCN197-2 and PCN356  Credit points: 6  Campus: Gardens Point  Teaching period: 2011 SEM-2

PCN297 CLINICAL ATTACHMENT 2
This unit includes a period of additional supervised clinical practice designed to expand and refine skills acquired in PCN197. (12 credit points achieved at completion of PCN297-1 and PCN297-2.)

**Prerequisites:** PCN159, PCN162, PCN197-1, PCN197-2 and PCN356  
**Corequisites:** PCN355, PCN357  
**Credit points:** 6  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

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**PCN355 VASCULAR ULTRASOUND**

This unit includes the principles and equipment requirements of ultrasound applications in the cardiovascular system. It also includes the clinical techniques and diagnostic criteria of such applications, in particular those of the peripheral arterial and venous systems.

**Prerequisites:** PCN159 and PCN162 and PCN356  
**Corequisites:** PCN297-1  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

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**PCN356 ULTRASONIC EXAMINATION 2**

This unit includes the ultrasound techniques used to examine the head, neck and peripheral organs and the ultrasonic appearance of normal and abnormal anatomy and pathology. It also includes ultrasound techniques in advanced obstetrics and gynaecology and in the abdomen.

**Prerequisites:** PCN159 and PCN162  
**Credit points:** 12  
**Contact hours:** 5 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-2

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**PCN357 ADVANCED ULTRASOUND TOPICS**

This unit builds on content of PCN159 and PCN356 providing more advanced applications of ultrasound in obstetrics. This unit also provides a study of the applications of ultrasound techniques in paediatrics.

**Prerequisites:** PCN159 and PCN162 and PCN356  
**Corequisites:** PCN297-1  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

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**PCN520 PROJECT (FULL-TIME)**

New and exciting technologies are playing an increasingly important role in everyday life. Modern healthcare is a good example of a field where technology has had a huge impact in the way patients are diagnosed and treated. Graduates are increasingly involved in the research and development of new technologies and also in its translation and implementation into clinical use. This unit aims to develop further the students’ skills for carrying out such work in the form of a research project. The project may be carried out in collaboration with a hospital or industry. This unit aims to introduce and improve the students’ skills in carrying out research work in the form of a short research project.

**Credit points:** 48  
**Contact hours:** 18 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1, 2011 SEM-2 and 2011 SUM

**PCN540 PROJECT (PART-TIME)**

New and exciting technologies are playing an increasingly important role in everyday life. Modern healthcare is a good example of a field where technology has had a huge impact in the way patients are diagnosed and treated. Graduates are increasingly involved in the research and development of new technologies and also in its translation and implementation into clinical use. This unit aims to develop further the student’s skills for carrying out such work in the form of a research project. The project may be carried out in collaboration with hospitals or industry. This unit aims to introduce and improve the students’ skills in carrying out research work in the form of a short research project.

**Credit points:** 24  
**Contact hours:** 9 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

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This unit includes the ultrasound techniques used to examine the head, neck and peripheral organs and the ultrasonic appearance of normal and abnormal anatomy and pathology. It also includes ultrasound techniques in advanced obstetrics and gynaecology and in the abdomen.

**Prerequisites:** PCN159 and PCN162  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1

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**PCN357 VASCULAR ULTRASOUND**

This unit includes the principles and equipment requirements of ultrasound applications in the cardiovascular system. It also includes the clinical techniques and diagnostic criteria of such applications, in particular those of the peripheral arterial and venous systems.

**Prerequisites:** PCN159 and PCN162 and PCN356  
**Corequisites:** PCN297-1  
**Credit points:** 12  
**Contact hours:** 4 per week  
**Campus:** Gardens Point  
**Teaching period:** 2011 SEM-1