Master of Cardiac Ultrasound (PH85)

Year offered: 2010
Admissions: Yes
Course duration (part-time): 6 semesters (3 years)
(External only)
Domestic fees (indicative): 2010: Full fee tuition $7,250 (indicative) per semester
Domestic Entry: February: Early Closing Date - 1 December 2009. Early closing date for PH75 and PH85 Semester 1 2009 entry, pending quota being filled. Beyond this date, late applicants should contact the course coordinator for admission advice. Stage 1 of this course commences in February and July (students with advanced standing). Stage 2 commences in February and July.
Total credit points: 144
Standard credit points per full-time semester: 48
Standard credit points per part-time semester: 24
Course coordinator: Bonita Anderson
Campus: Gardens Point

Entry Requirements
To be eligible to enrol an applicant is required to have either a diploma level qualification with a minimum of 5 years clinical experience in cardiac ultrasound or a bachelor degree in a relevant science or allied health field. In addition the applicant must have a minimum of 3 months full-time equivalent prior supervised, hands-on clinical experience in cardiac ultrasound as well as access to suitable clinical experience for the duration of the course.

Second semester enrolments for PH85 will only be accepted under the following circumstances:

1. Students who have successfully completed PH75 Graduate Diploma in Cardiac Ultrasound may enrol into the Masters project (PCN640-1) in second semester.

2. Students who have completed the Cardiac DMU and who are eligible to apply for advanced standing may enrol into PH85 in second semester*.

* Under university rules and regulations, these students are required to undertake 50% of the coursework for PH85. Therefore, in addition to the Masters project, students will be required to complete two other units (PCN218 Research Methodology and Professional Studies and PCN459 Advanced Cardiac Ultrasound).

Fees: Please note that the Domestic Fees are based on full-time studies. This course is a part-time course. Please refer to Indicative Domestic Fees (http://www.studentservices.qut.edu.au/costs/calculate/indicative.jsp) for information.

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

Course Design
This course consists of two stages. Stage 1 (Graduate Diploma in Cardiac Ultrasound - PH75) takes two years of part-time study to complete. Students must be employed in a suitable clinical practice with adequate access to clinical cardiac ultrasound experience for the duration of the course. If students are not based in Brisbane, this structure allows attendance by offering the formal classroom component in an intensive one-week block in each semester.

Stage 2 (Master of Cardiac Ultrasound - PH85) involves the completion of a research project and submission of a thesis. Students undertake this project externally under QUT staff supervision and the guidance of a suitable external supervisor. This stage would normally take one year part-time to complete.

Overview
The Master of Cardiac Ultrasound program offers studies for practicing Cardiac Sonographers. The course is conducted using a combination of block classes of approximately one week’s duration in each semester, web-based modules and clinical practice modules.

Further Information
For further information about this course, please contact:
Bonita Anderson
Phone: +61 7 3138 2782
Email: enquiry.scitech@qut.edu.au

Course structure

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

<table>
<thead>
<tr>
<th>Year 1, Semester 1</th>
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<tbody>
<tr>
<td>PCN155 Cardiac Ultrasound 1</td>
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<tr>
<td>PCN162 Principles of Medical Ultrasound</td>
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<tr>
<td>PCN497-1 Clinical Attachment 4</td>
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<tr>
<th>Year 1, Semester 2</th>
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<tr>
<td>PCN259 Cardiac Ultrasound 2</td>
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<tr>
<td>PCN497-2 Clinical Attachment 4</td>
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Year 2, Semester 1

PCN218 Research Methodology and Professional Studies
PCN359 Cardiac Ultrasound 3
PCN597-1 Clinical Attachment 5

Semester 2, Semester 2

PCN459 Advanced Cardiac Ultrasound
PCN597-2 Clinical Attachment 5

NOTE: The PCN497 and PCN597 clinical attachment units are 2 semester units.

STAGE 2:* Students must complete the units listed below, totalling 48 credit points:

First Semester ** (Project Over Two Semesters)

PCN640-1 Project
PCN640-2 Project

Notes: 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 should 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, should be made 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.

* Masters project units are offered in both semesters.

** Second Semester enrolments for PH85 will only be accepted under the following circumstances:

1. Students who have successfully completed PH75 Graduate Diploma in Cardiac Ultrasound may enrol into the Masters project (PCN640-1) in second semester.
2. Students who have completed the Cardiac DMU and who are eligible to apply for advanced standing may enrol into PH85 in second semester.#

# Under university rules and regulations, these students are required to undertake 50% of the coursework for PH85. Therefore, in addition to the Masters project, students will be required to complete two other units (PCN218 Research Methodology and Professional Studies and PCN459 Advanced Cardiac Ultrasound).

Students in the Master of Cardiac Ultrasound (PH85) wishing to exit with the Graduate Diploma in Cardiac Ultrasound (PH75) are required to submit an Application to Graduate Early with an Approved Exit Course (SRX) Form in their final semester of study.

Potential Careers:
Sonographer.

UNIT SYNOPSISES

PCN155 CARDIAC ULTRASOUND 1
A comprehensive understanding of two-dimensional echocardiography and M-mode (motion mode) echocardiography is essential for professionals working in this field. This includes a detailed understanding of cardiac anatomy and physiology as well as a basic understanding of the embryological development of the human heart. Topics include embryological development of the human heart, detailed anatomy of the adult human heart, physiology of the adult human heart, basic cardiac pharmacology, basic electrocardiograph (ECG) patterns, the routine adult two-dimensional and M-mode echocardiographic examination of the adult heart (including standard two-dimensional and M-mode measurements and calculations).

Corequisites: PCN497-1 Credit points: 12 Contact hours: 3 per week (internet) Campus: Internet and Gardens Point Teaching period: 2010 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: 2010 SEM-1

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:** 2010 SEM-1 and 2010 SEM-2

**PCN259 CARDIAC ULTRASOUND 2**
The field of medical ultrasound is scientifically based, in an environment that is rapidly changing and undergoing considerable technological advancement. Cardiac ultrasound (echocardiography) is a highly specialised technique for the assessment of the human heart. This unit extends and builds on the content of PCN155 by introducing the principles and clinical applications of Doppler Echocardiography in the assessment of the adult heart as well as basic haemodynamic principles and calculations. In addition, this unit also covers the applications of cardiac ultrasound in the assessment of ischaemic heart disease and cardiomyopathies in the adult patient.

**Prerequisites:** PCN155  **Corequisites:** PCN497-2
**Credit points:** 12  **Contact hours:** 3 per week (internet)  **Campus:** Internet and Gardens Point  **Teaching period:** 2010 SEM-2

**PCN359 CARDIAC ULTRASOUND 3**
Cardiac ultrasound (echocardiography) is a highly specialised technique for the assessment of the human heart. This unit extends and builds on the content of PCN155 and PCN259 by introducing concepts and techniques of the more complex haemodynamic calculations and by discussing the applications of these techniques to cardiac valvular disease, diseases of the aorta and hypertensive heart disease in the adult patient.

**Prerequisites:** PCN259 and PCN497-2  **Corequisites:** PCN597-1
**Credit points:** 12  **Contact hours:** 3 per week (internet)  **Campus:** Internet and Gardens Point  **Teaching period:** 2010 SEM-1

**PCN459 ADVANCED CARDIAC ULTRASOUND**
Cardiac ultrasound (echocardiography) is a highly specialised technique for the assessment of the human heart. This unit extends and builds on the content of units PCN155, PCN259 and PCN359 by introducing more advanced applications of echocardiography. The advanced areas of diastolic function, unusual pathologies, the assessment of congenital heart lesions in the adult patient, systemic causes of heart diseases, and new and evolving technologies are covered. Additionally, an overview of other diagnostic methods of the heart is presented in order to demonstrate the complementary nature of diagnostic testing.

**Prerequisites:** PCN359 and PCN497-2  **Corequisites:** PCN597-2
**Credit points:** 12  **Contact hours:** 3 per week (internet)  **Campus:** Internet and Gardens Point  **Teaching period:** 2010 SEM-2

**PCN497 CLINICAL ATTACHMENT 4**
The field of medical ultrasound is scientifically based, in an environment that is rapidly changing and undergoing considerable technological advancement. Cardiac ultrasound (echocardiography) is a highly specialised technique for the assessment of the human heart. This unit is an essential component of the course as it allows the student to be involved in extensive clinical experience that is complementary to all other units in the course. In this unit, basic echocardiographic skills are developed through employment and training in a QUT approved clinical department. Clinical skills are developed and evaluated by QUT approved clinical supervisors, in consultation with QUT academic staff. (12 credit points achieved at completion of PCN497-1 and PCN497-2.)

**Prerequisites:** PCN155 and PCN497-1  **Corequisites:** PCN259
**Credit points:** 6  **Contact hours:** 3 per week (internet)  **Campus:** Internet and Gardens Point  **Teaching period:** 2010 SEM-2
allows the student to be involved in extensive clinical experience that is complementary to all other units in the course. This unit builds on skills, knowledge and abilities gained in the unit PCN497. In this unit, basic skills are refined and expanded, and advanced echocardiographic skills are developed through employment and training in a QUT approved clinical department. Clinical skills are developed and evaluated by QUT approved clinical supervisors, in consultation with QUT academic staff. (12 credit points achieved at completion of PCN597-1 and PCN597-2.)

**Prerequisites:** PCN359 and PCN497-2 and PCN597-1

**Corequisites:** PCN459

**Credit points:** 6

**Contact hours:** 3 per week (internet)

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1 and 2010 SEM-2

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**PCN597 CLINICAL ATTACHMENT 5**

Cardiac ultrasound (echocardiography) is a highly specialised technique for the assessment of the human heart. This unit is an essential component of the course as it allows the student to be involved in extensive clinical experience that is complementary to all other units in the course. This unit builds on skills, knowledge and abilities gained in the unit PCN497. In this unit, basic skills are refined and expanded, and advanced echocardiographic skills are developed through employment and training in a QUT approved clinical department. Clinical skills are developed and evaluated by QUT approved clinical supervisors, in consultation with QUT academic staff. (12 credit points achieved at completion of PCN597-1 and PCN597-2.)

**Prerequisites:** PCN259 and PCN497-2

**Corequisites:** PCN359

**Credit points:** 6

**Contact hours:** 3 per week (internet)

**Campus:** Internet and Gardens Point

**Teaching period:** 2010 SEM-1

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**PCN640 PROJECT**

In the rapidly changing technological environment of cardiac ultrasound it is important that students develop basic research skills, data interpretation skills and written communication skills. Students require these skills in order to be able to evaluate and appraise the value of research reports as well as prepare their own written research reports. Students, having previously completed the coursework requirements of PH75 may elect to further develop their research skills by undertaking the project phase leading to the award PH85 Master of Cardiac Ultrasound. The project may take the form of a clinical research project or a feasibility study. The project is typically undertaken externally, under QUT supervision over 2 semesters (part-time). (48 credit points achieved at completion of PCN640-1 and PCN640-2.)

**Prerequisites:** PCN640-1

**Credit points:** 24

**Contact hours:** 9 per week

**Campus:** Gardens Point

**Teaching period:** 2010 SEM-1 and 2010 SEM-2