MEDI90045 Advanced Physics for Ultrasound

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2014. This subject will be taught off-campus (on-line) Course materials will be distributed via mail to students. Administration is via e-mail.
Time Commitment:	Contact Hours: Off Campus, Online Total Time Commitment: 120 hours
Prerequisites:	To enrol in this subject, you must be admitted in the Master of Clinical Ultrasound (MC-CU). This subject is not available for students admitted in any other courses.
Corequisites:	Nil
Recommended Background Knowledge:	none
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Contact:	To make an enquiry or request more information please contact the Clinical Ultrasound Education Group: E: **echo-info@unimelb.edu.au (mailto:echo-info@unimelb.edu.au)** T: +61 3 8344 5673
Subject Overview:	This subject will provide advanced material on Doppler modalities and new imaging modalities such as three-dimensional imaging. There will eb an additional 25 case studies. Topics include: 1 Physical Principles of Ultrasound Generation and Tissue Characterisation 2 Modes of Ultrasound 3 Transducer Types and Design Features 4 Image Processing 5 3-D Imaging 6 Stress Echo 7 Tissue Doppler and Strain 8 IVUS (Intravasculatr ultrasound) 9 Case Studies - 25
Learning Outcomes:	The completion of the subject, students should: 1 Understand the physical principles of ultrasound generation and tissue characterisation 2 Understand modes of ultrasound, transducer types and design features 3 Understand image processing 4 Understand three-dimensional imaging 5 Understand stress and strain tissue Doppler imaging 6 Understand intravascular ultrasound 7 Interpret and report 25 case studies
Assessment:	1. 50% of assessment: one open- book multiple-choice examination consisting of 50 questions. Students will have 1 week to complete the examination during the assessment period at the end of the semester. 2. 20% of assessment: completion of self assessment modules at the end of each tutorial, progressively through the semester. These are completed in the workbooks issued to students and it is a requirement that these workbooks are signed and returned for

	assessment. 3. 30% Case studies. Formal case studies will need to be reviewed by students progressively through the semester and a formal report written. Assessment will be based on the completeness and accuracy of the report, which will be submitted at the end of the semester. The cases will reflect the advanced nature of a Masters level program, and are additional to case studies presented as part of the course content.
Prescribed Texts:	Royse C, Donnan G, Royse A. Pocket Guide to Perioperative and Critical Care Echocardiography. 2006; McGraw-Hills
Recommended Texts:	Other materials will be provided as a package of readings, PowerPoint presentations and case studies.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Enhance time utilisation # Improve written skills and problem solving skill All students are expected to have access to a computer that can operate a Windows platform or simulation.
Links to further information:	http://www.heartweb.com.au/www/559/1001127/home--default.asp
Notes:	This subject is available to part-time and full-time students This subject is not available to Commonwealth Supported students. This subejct is not available as breadth. Administration of this subject is via e-mail.