431-483 Neuroimaging Methods

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-Six hours (24 hours of lectures and 12 hours of tutorials/supervised computer-based laboratory sessions). Total Time Commitment: Estimated total time of commitment of 120 hours per semester.
Prerequisites:	431-336 Neurons; from action potential to learning, 431-325 Stochastic Signals and Systems.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Gary Egan
Subject Overview:	This subject introduces students to modelling and analysis techniques used in brain imagine research, based on magnetic resonance imaging (MRI) data. The course will include: introduction to Matlab programming; basic techniques for analysing structural, functional and diffusion MR images; techniques for modelling functional MR time series datasets. The course objectives are to train students in the principles and practice of modelling and analysing MRI data in the context of neuroscience research. The course will provide students with a detailed understanding of MRI image processing, including structural, functional and diffusion MR data. Students will be instructed in the use of MatLab for image analysis, and will utilise this understanding to complete three computerbased projects.
Assessment:	One 2-hour examination (50%) and two computer laboratory projects (20% each).
Prescribed Texts:	None
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
Related Course(s):	Bachelor of Engineering (Biomedical)Biosignals