NEUR90010 Understanding Brain Imaging B

Credit Points:	6.25
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: April, Parkville - Taught on campus. This is an intensive subject offered in April (normally week 6 of semester 1). Contact the Course Convenor for timetable information.
Time Commitment:	Contact Hours: 32 hours, 21 hours of lectures and 9 hours of tutorials and one x 2-hour writing workshop over the five days. Total Time Commitment: 60 hours, including 32 contact hours
Prerequisites:	None
Corequisites:	Students based at the Melbourne Brain Centre and the Florey Institutes Laboratories enrolling in this subject must also enrol in: NEUR90007 Design and Analysis for Neurosciences A (12.5) or NEUR90008 Design and Analysis for Neurosciences B (6.25) NEUR90011 Molecular and Cellular Neuroscience A (12.5) or NEUR90012 Molecular and Cellular Neuroscience B (6.25) NEUR900013 Neuroscience of Behaviour & Cognition A (12.5) or NEUR900014 Neuroscience of Behaviour & Cognition B (6.25)
Recommended Background Knowledge:	Basic knowledge of first year Physics is desirable but not essential.
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject and: (Students who have completed these CLRS subjects should contact the Course Convenor to discuss exemption from parts of this subject).

Subject	Study Period Commencement:	Credit Points:
NEUR90010 Understanding Brain Imaging B	April	6.25
CLRS90017 Neuroimaging for Clinical Research	June	12.50
CLRS90026 Clinical Neuroscience Res. & Imaging	June	25

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 Overview, Objectives, 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 the Disability Liaison Unit:http://www.services.unimelb.edu.au/disability/
Coordinator:	Dr Kathelijne Lefevere, Prof Alan Connelly
Contact:	Dr Kathy Lefevere-Burd

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Subject Overview:	This subject is an intensive 5 consecutive days program (totalling 32 contact hours) introducing the main principles of brain imaging at whole organ level in humans and animal models. This subject will normally be offered in week 6 of Semester 1, depending on when the Easter Non - Teaching Period occurs (ie between weeks 6 and 9). The subject comprises: # A series of 21 hour long lectures, each delivered by research experts in the field, covering three broad themes: 1 Magnetic Resonance Imaging 2 Positron Emission Tomography/Single Photon Emission Computed Tomography and 3 Invasive Methods for Measuring Brain Activity in Rodent Models. # Basic concepts of each modality are introduced, as well as their major research applications. # Particular technology advantages and disadvantages are outlined comparatively to highlight specific use and limitations. # Design and analysis of experiments, as well as practical decisions that must be made in the process are discussed in the context of the various imaging modalities. # In addition to this, the program includes 9 hours of tutorials in which a group project deepens and consolidates this information through critiquing an imaging research paper. This group project culminates in a class presentation of the group's conclusions and class discussion at the end of the week. Group memberships are chosen to ensure a relatively uniform mix of background disciplines and experience. # The subject also includes a stand-alone 2-hour Scientific Writing Workshop in the context of neurosciences. Essential concepts of writing are introduced based on practical examples from the literature or grant applications. Class exercises are discussed.
Objectives:	On completion of this subject students will be able to: # Develop an understanding of contemporary brain imaging technologies and their applications in basic and clinical neuroscience research at an intermediate to advanced level. # Acquire a basic vocabulary of imaging methods to be able to interact with multi-disciplinary imaging experts when required. # Develop a capacity to critically analyse the neuroscience research literature using imaging modalities. # Develop an awareness of potential pitfalls in the imaging field and common errors found in the literature. # Appreciate the need for and benefit from collaborating with imaging technology experts when setting up experiments using imaging methods.
Assessment:	Full five days attendance of the subject and full participation in class exercises, group project, presentation and discussions required. One group oral presentation (total 20 min), worth 40% and a 2,000 word limit written report, worth 60% and due by the end of Week 9.
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
Generic Skills:	On completion of this subject, students will have developed the following generic skills: # Critical reading skills at an advanced level. # Oral communication skills including public speaking and on the interpersonal level. # Written communication skills at a high level. # Team work skills and becoming aware of the benefit of collaborating with others. # High organization and time management skills in short term setting.