NEUR30003 Principles of Neuroscience

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 3 x one hour lectures per week (total contact hours: 36) Total Time Commitment: 120
Prerequisites:	2 semesters Biology at 1st year, or 1st year of the Bachelor of Biomedicine.
Corequisites:	None
Recommended Background Knowledge:	Although there are no specific 200 level prerequisites for this subject it is recommended that B.Sc. students should have completed at least one of the following 200 level life science subjects: Biochemistry and Molecular Biology; Fundamentals of Cell Biology; Principles of Genetics; Principles of Human Structure; Principles of Microbiology and Immunology; Exploring Human Disease; Fundamentals of Pharmacology; Integrated Human Physiology; Animal Structure and Function.
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 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/
Coordinator:	Dr Peter Kitchener
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Subject Overview:	This subject explores the fundamental organisational features and functional principles of the nervous system: from the biology of nerve cells and neural circuits to complex behaviours. We consider simple reflex and pattern generating circuits through to sensory and motor systems, and examine the brain regions and processes involved in higher functions such as social cognition and reasoning. The multidisciplinary nature of modern neuroscience is emphasised; students should gain an appreciation of how life science disciplines (such as Genetics, Molecular Biology, Biochemistry, Biophysics and Psychobiology) have increased our understanding of nervous system function, and how Neuroscience overlaps with other areas of related study (such as Cognitive Science, Information Science, Linguistics, and Experimental and Clinical Psychology).
Objectives:	# To gain an appreciation of how human behaviour, including complex functions like thought and emotion, is mediated by the brain. # To understand how neurons form the building blocks of the nervous system, how they communicate with each other, how they are connected to form elementary circuits and how they store information. # To appreciate the fundamentals of systems underlying sensory perception, including the transduction of sensory stimuli (for example light and sound) and the processing of sensory information by neuronal populations leading, ultimately to perception, and to gain an understanding of how the nervous system initiates and controls movements of the body.

	# To appreciate the plastic nature of the nervous system, including how it adapts to changing environments and to ageing, disease and injury.
Assessment:	A 50 minute mid-semester examination (30%); andA 2 hour examination (70%) in the examination period.
Prescribed Texts:	Purves et al. Neuroscience 4th edition, 2008 Sinauer.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2010/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2010/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2010/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2010/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion the students should have developed skills in: # Independent critical thought. # Understanding different experimental approaches to problems and the context in which studies have been performed. # Analysing complex scientific problems and interpreting experimental findings. # Understanding the interrelationship of ideas and technologies in multi-disciplinary science.
Notes:	This subject is available to students enrolled in the New Generation BBiomed, NG BSc, pre-2008 BSc, pre-2008 BASc, pre-2008 BBiomedSc.
Related Course(s):	Bachelor of Science
Related Majors/Minors/ Specialisations:	Human Structure and Function Human Structure and Function Neuroscience Neuroscience Neuroscience Neuroscience (Behavioural Neuroscience specialisation) Physiology Physiology