

## NEUR30003 Principles of Neuroscience

<b>Credit Points:</b>	12.50
<b>Level:</b>	3 (Undergraduate)
<b>Dates &amp; Locations:</b>	This subject is not offered in 2014.
<b>Time Commitment:</b>	Contact Hours: 3 x one hour lectures per week (total contact hours: 36) Total Time Commitment: 120
<b>Prerequisites:</b>	2 semesters Biology at 1st year, or 1st year of the Bachelor of Biomedicine.
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	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: <b>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.</b>
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>
<b>Contact:</b>	Subject Coordinator Dr Peter Kitchener <b><a href="mailto:pkitc@unimelb.edu.au">pkitc@unimelb.edu.au</a> (mailto:pkitc@unimelb.edu.au)</b> Administrator Coordinator Ms Kim Williams <b><a href="mailto:BiomedSci-AcademicServices@unimelb.edu.au">BiomedSci-AcademicServices@unimelb.edu.au</a> (mailto:BiomedSci-AcademicServices@unimelb.edu.au)</b>
<b>Subject Overview:</b>	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).
<b>Learning Outcomes:</b>	<ul style="list-style-type: none"> <li># To gain an appreciation of how human behaviour, including complex functions like thought and emotion, is mediated by the brain.</li> <li># 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.</li> </ul>

	<ul style="list-style-type: none"> <li># 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.</li> <li># To appreciate the plastic nature of the nervous system, including how it adapts to changing environments and to ageing, disease and injury.</li> </ul>
<b>Assessment:</b>	A 50 minute mid-semester examination (30%); and A 2 hour examination (70%) in the examination period.
<b>Prescribed Texts:</b>	Purves et al. Neuroscience 5th edition, 2012 Sinauer.
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2014/B-ARTS">https://handbook.unimelb.edu.au/view/2014/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2014/B-COM">https://handbook.unimelb.edu.au/view/2014/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2014/B-ENVS">https://handbook.unimelb.edu.au/view/2014/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2014/B-MUS">https://handbook.unimelb.edu.au/view/2014/B-MUS</a>)</li> </ul> <p>You should visit <a href="http://breadth.unimelb.edu.au/breadth/info/index.html">learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)</a> and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>On completion the students should have developed skills in:</p> <ul style="list-style-type: none"> <li># Independent critical thought.</li> <li># Understanding different experimental approaches to problems and the context in which studies have been performed.</li> <li># Analysing complex scientific problems and interpreting experimental findings.</li> <li># Understanding the interrelationship of ideas and technologies in multi-disciplinary science.</li> </ul>
<b>Notes:</b>	This subject is available to students enrolled in the New Generation BBiomed, NG BSc, pre-2008 BSc, pre-2008 BASc, pre-2008 BBiomedSc.
<b>Related Majors/Minors/Specialisations:</b>	<p>Human Structure and Function  Neuroscience  Physiology  Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses  Science-credited subjects - new generation B-SCI and B-ENG.  Selective subjects for B-BMED</p>