# Neuroscience

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| **Year and Campus:** | 2010 |
| **Coordinator:** | Dr Peter KitchenerDepartment of Anatomy and Cell Biology |
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| **Overview:** | Neuroscience is one of the largest areas of study within the entire sphere of modern biology and is an area where Australian research has significant international impact. Students completing a neuroscience major will understand the fundamental organisation and functional principles of the nervous system: from the biology of nerve cells and neural circuits through to neural systems and complex behaviours. From the two compulsory subjects (Principles of Neuroscience; Neurophysiology: Neurons and Circuits) students will gain an overview of the breadth of modern neuroscience and how it interrelates aspects of molecular and cell biology, physiology, psychology, cognitive and information science. The diversity of neuroscience is reflected in the range of subjects that complement the two compulsory subjects. These electives allow further study of the nervous system at the molecular (Cell Signalling & Neurochemistry, Drugs Affecting the Nervous System), cellular (Developmental Neurobiology), and systems (Sensation, Movement & Complex Functions, Visual Neuroscience) levels of neural organisation. |
| **Objectives:** | # It is expected that students completing this Major should understand the fundamental organisational and functional principles of the nervous system: from the biology of nerve cells and neural circuits through to neural systems and ultimately to complex behaviours like thought and emotion.<br># Areas of study include how perceptual and motor systems are organised, the crucial role of the nervous system in the regulation of the internal environment of the body, how the nervous system develops, how it has evolved, and the effects of injury, disease and abuse.<br># A Major in Neuroscience should allow students to appreciate the interrelationship of ideas and technologies in multi-disciplinary science, and how complex scientific problems can be approached and analysed.<br># Students will be exposed to the breadth of modern Neuroscience to see how a spectrum of science disciplines contribute to our understanding of nervous system function, and how Neuroscience overlaps with related areas of study, such as Cognitive Science, Psychology and Medicine. |
| **Structure & Available Subjects:** | This major consists of:<br># 50 credit points at third year level. |
| **Subject Options:** | **Third Year:** |

| Subject | Study Period Commencement: | Credit Points: |
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| NEUR30003 Principles of Neuroscience | Semester 1 | 12.50 |
| NEUR30002 Neurophysiology: Neurons and Circuits | Semester 1 | 12.50 |

Plus two subjects from:

| Subject | Study Period Commencement: | Credit Points: |
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| NEUR30004 Sensation Movement and Complex Functions | Semester 2 | 12.50 |
| NEUR30005 Developmental Neurobiology | Semester 2 | 12.50 |
| OPTO30007 Visual Neuroscience | Semester 2 | 12.50 |
| PHRM30002 Drugs Affecting the Nervous System | Semester 2 | 12.50 |
| BCMB30004 Cell Signalling and Neurochemistry | Semester 2 | 12.50 |

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| **Links to further information:** | http://www.bbiomed.unimelb.edu.au/ |
| **Related Course(s):** | Bachelor of Biomedicine |