

NEUR30005 Developmental Neurobiology

Credit Points:	12.50																				
Level:	3 (Undergraduate)																				
Dates & Locations:	2011, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.																				
Time Commitment:	Contact Hours: 3 hours per week x 12 weeks Total Time Commitment: 120 hours																				
Prerequisites:	<p>EITHER</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CEDB30002 Concepts in Cell & Developmental Biology</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>OR</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>NEUR30003 Principles of Neuroscience</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>(516-209 Introductory Neuroscience is an alternative prerequisite to 516-313)</p> <p>OR (For BBiomedicine students only)</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOM20001 Molecular and Cellular Biomedicine</td> <td>Semester 1</td> <td>25</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	CEDB30002 Concepts in Cell & Developmental Biology	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	NEUR30003 Principles of Neuroscience	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25
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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 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:	Assoc Prof Paul Whittington																				
Contact:	<p>p.whittington@unimelb.edu.au (mailto:p.whittington@unimelb.edu.au)</p> <p>Administrative Coordinator: Ms Kim Williams anatomy-student@unimelb.edu.au 8344 5791</p>																				
Subject Overview:	This subject examines how a simple sheet of cells in the early embryo is fashioned into what is arguably the most complex structure on earth - the human brain. Topics covered include how cells within the primordial nervous system are assigned different fates, how neural stem cells are stimulated to divide to produce the billions of cells that comprise the nervous system and how these cells differentiate into mature neurons. The subject will examine how neural																				

	circuits are established, as newly-born neurons send out axons that make functional synaptic connections with specific target cells.
Objectives:	<p>On completion of this subject, students should:</p> <ul style="list-style-type: none"> # appreciate the major processes involved in the development of the nervous system, including neural induction, neural patterning, neural and glial cell proliferation, determination of neural fate, neuronal migration, axon guidance, regulation of neuron survival and synaptogenesis; # have gained some insights into the cellular and molecular basis of those processes and understand how disorders in developmental processes can lead to neural defects; # be aware of the regenerative ability of the nervous system and the prospects for therapeutic treatment of neural injury and disease; # be familiar with outstanding questions currently being addressed in research in neural development; and # be familiar with modern experimental approaches used to investigate the development of the nervous system and appreciate their strengths and limitations.
Assessment:	A 45-minute written class test halfway through the semester (15%); a 2000 word essay due towards the end of the semester (20%); a 2-hour written examination in the examination period (65%).
Prescribed Texts:	Kandel, Schwartz and Jessell, Principles of Neural Science, 5th ed. ORSanes, Development of the Nervous System, 2nd ed.
Recommended Texts:	<ul style="list-style-type: none"> # Principles of Neural Science (Kandel, Schwartz and Jessell), 4th ed # Development of the Nervous System (B Sanes et al.), 2nd ed, 2006
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2011/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2011/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2011/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2011/B-MUS) <p>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.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>On completion of this subject, students should have developed:</p> <ul style="list-style-type: none"> # The ability to critically analyse scientific research papers. # The ability to carry out literature searches. # A capacity for independent critical thought, rational enquiry and self-directed learning. # The ability to plan work and use time effectively. # The ability to synthesise apparently disparate types of knowledge.
Notes:	<p>This subject is available to students enrolled in the NG BSc, BBiomed, pre-2008 BSc, pre-2008 BASc, pre-2008 BBiomedSc.</p> <p>Students enrolled in the BSc (pre-2008 BSc), BASc or a combined BSc course will receive science credit for the completion of this subject.</p>
Related Course(s):	Bachelor of Science
Related Majors/Minors/Specialisations:	<p>Anatomy (pre-2008 Bachelor of Science) Cell Biology (pre-2008 Bachelor of Science) Human Structure and Function Neuroscience Reproduction and Development (pre-2008 Bachelor of Science) Reproduction and Development (specialisation of Cell and Developmental Biology major) Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses</p>