OPTO30007 Visual Neuroscience

Credit Points:	12.5
Level:	3 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 3 x one hour lectures per week. Total Time Commitment: Estimated total time commitment 170 hours
Prerequisites:	One of

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

Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit cannot be gained for this subject and

Subject	Study Period Commencement:	Credit Points:
NEUR30001 Neural Basis of Vision	Not offered 2016	12.50

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:	Prof Trichur Vidyasagar
Contact:	**sagar.t@unimelb.edu.au (mailto:sagar.t@unimelb.edu.au)**
Subject Overview:	The subject builds on students' understanding of the basic principles behind the functioning of the nervous system, developed in the prerequisite neuroscience subject/s. It develops students' understanding of the structure, function and development underlying the processing of visual information from the eyes to the further reaches of the brain. The subject provides a thorough understanding of the various levels of the visual pathway and the neural mechanisms that enable visual functions such as perceiving form, colour, depth and movement and how visually-guided action is executed. It will also explore the basis of higher brain functions, such as visual attention and reading and also how eye movements are controlled and vision is related to other senses such as balance, hearing and touch. The subject will provide a number of examples of how disorders of the neural processing lead to specific clinical syndromes.
Learning Outcomes:	On completion of this subject students should: # Have a thorough understanding of the structure and function of the visual system and how neural elements within different parts of the visual system interact to provide our visual percept and behaviour.

	# Understand the relationship between vision and the other senses. # Have a basic appreciation of the pathophysiology underlying neurological disorders associated with the visual system. # Be able to convey and explain this acquired knowledge to either a lay or science audience. # Have the necessary background knowledge and intellectual skills to engage in either postgraduate studies, or employment, related to visual function and its neurological basis.
Assessment:	Two written assessments of 30 minutes each, one mid semester (15%) and one late semester (15%); 3-hour written examination (70%) in end of semester exam period.
Prescribed Texts:	E R Kandel, J H Schwartz, T M Jessell, Principles of Neural Science, 4th Ed., McGraw-Hill, 2000.
Recommended Texts:	J G Nicolls, A R Martin, B G Wallace & P A Fuchs, From Neuron to Brain, 4th Ed., Sinauer, 2001
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 should have developed the following generic skills: # The capacity for critical evaluation of complex issues # Problem-solving and communication skills # Improved capacity for seeking and evaluating relevant information.
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. This subject is available for credit in the Bachelor of Biomedicine.
Related Majors/Minors/ Specialisations:	Human Structure and Function Neuroscience Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED