

ISN315

Artificial Intelligence and Applied Bioengineering

Unit Description

Artificial Intelligence and Applied Bioengineering introduces students to concepts around artificial intelligence (AI), whether machines can “think”, sensory input in machine systems, the nature of consciousness, culturing of human neurons, bionics and human machine interface, and repairing brain and behaviour. Students will develop an understanding of key methodologies for investigating bionics and AI, as well as reviewing arguments for and against a prescribed proposition using psychology and neuroscience as a basis.

Required Textbooks and Readings

Warwick (2012) Artificial Intelligence: The Basics. Routledge.

*Textbooks may be subject to change prior to the start of semester

Administrative Details

Associated higher education awards	Duration	Core or Elective	Level	Unit Coordinator	Other Teaching Staff
Bachelor of Psychology	One semester	Elective	Third year, Semester 2	TBA	TBA

Learning Outcomes and Assessments

Learning outcomes for Unit	Assessment tasks		
	Type	When assessed – year, session and week	Weighting (% of total marks for unit)
Introduce the following areas of Towards a New Nature: artificial intelligence (AI), whether machines can “think”, sensory input in machine systems, the nature of consciousness, culturing of human neurons, bionics and human machine interface, repairing brain and behavior.	Exam [120 item multiple choice test]	Year 3, semester 2, week 14	40%
Develop an understanding of key methodologies for investigating bionics and AI.	Exam – see above		
Explore an aspect of towards a New Nature and review arguments for and against a prescribed proposition using psychology and neuroscience as a basis.	Essay [1500 words]	Year 3, semester 2, week 10	40%
Understand the behavioral psychological and neuroscientific implications related to a set proposition	Essay – see above		

Learning outcomes for Unit	Assessment tasks		
	Type	When assessed – year, session and week	Weighting (% of total marks for unit)
Develop the ability to discuss and understand critical issues in the following areas of Towards a New Nature: artificial intelligence (AI), whether machines can “think”, sensory input in machine systems, the nature of consciousness, culturing of human neurons, bionics and human machine interface, repairing brain and behavior.	Tutorial activities (discussion, debates, presentations, lab activities)	Year 3, throughout semester 2	20%

Delivery mode

Face to face on site with E-learning (online) components;

Full-time or Part-time study

Pre-requisites and co-requisites

Pass grade or higher in all Year 1, 2 and year 3, semester 1 units.

Other Resource and Requirements

Laboratory Facilities available through access agreement with the Florey Institute for Neuroscience and Mental Health

Unit weighting as a percentage of the year

Unit credit points	Total course credit points
12.5	400

Student workload

No. timetabled hours per week	No. personal study hours per week	Total workload hours per week
4 (1x2 hour lecture; 1x1 hour face-face tutorial and 1x1 hour online activities)	6	10

**Unit outlines may be subject to change. The most up-to-date outlines will be provided to students once the semester commences*