

# BEHV 7013 COGNITIVE SCIENCE: RESEARCH AND APPLICATION

**Credit Points** 10

**Legacy Code** 800173

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**Description** Cognitive science is the interdisciplinary scientific investigation of the mind. Contemporary research in cognitive science conducted by members of the MARCS Institute forms the core of the unit. Research areas to be addressed: plasticity and learning; action and coordination; nonverbal communication; and ageing and cognition. Examples of research questions: Can learning be unconscious? What mechanisms enable interpersonal coordination as seen in music and dance ensembles? Why is it that music elicits strong emotions? How does attention influence perception? How does conditioning explain human preferences? Does social facilitation apply to humans interacting with robots? In what way does ageing impact upon decision making? Applications to the arts, education, health, aging, design, human-machine interaction and artificial intelligence will be discussed.

**School** Graduate Research School

**Discipline** Psychology

**Student Contribution Band** HECS Band 1 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Postgraduate Coursework Level 7 subject

**Assumed Knowledge**

Master of Research core subjects: Research Design 1, Research Literacies or equivalent.

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Demonstrate understanding of theories and concepts in cognitive science regarding plasticity, nonverbal communication, action and coordination, and ageing.
2. Apply concepts from cognitive science to a real-world practical problem.
3. Discuss interdisciplinary research conducted in one of three programs in MARCS.
4. Use software to create experimental stimuli for an experiment in one of the content areas.
5. Construct and conduct a cognitive science experiment.
6. Develop testable hypothesis and communicate experiment rationale, design, results and implications

## Subject Content

1. Introduction to cognitive science: definitions, overview and particular perspectives.
2. Sensory and cognitive plasticity and functional fixedness. For example: evaluative conditioning and preferences; unconscious learning; auditory and visual perception and attention.

3. Action and coordination. For example, sensorimotor processes in interpersonal coordination; creativity, learning and memory in music and dance.

4. Nonverbal communication and mediation. For example, music and emotion; social processes in human-robot interaction; experience design; robots and pedagogy.

5. Ageing and cognition: For example, hearing-related problems; decision-making and aging.

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Quiz	10 questions x 10 weeks	40	N	Individual	
Experiment creation and reporting	Experiment 40 and 10 minute presentation		N	Individual	
WIKI page	1000 words	20	N	Individual	