School of Psychological Sciences

PSYC3300: Advanced Cognitive Psychology: Theory & Applications

Callaghan and Ourimbah

Semester 2 - 2023

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

COURSE OUTLINE

OVERVIEW

Course Description

Cognitive Psychology is the scientific study of human behaviour and mental processes from an information-processing perspective. It is a growing field that has many exciting applications to our day-to-day life. Cognitive Psychology asks how people receive information from the environment (perception), store it (memory), and use it to make decisions, solve problems, and communicate. The course covers contemporary theories and models in selected topics of cognitive psychology. It then identifies real-life problems in these areas, and presents applied approaches for testing and solving these problems. In the application phase students will gain hands-on skills in experimental design, data-collection, and data-analysis, all aimed at addressing real-life problems. The course is made of four successive modules:

- Information processing, cognitive workload and capacity (theory and applications)
- Applying mathematical and computational models to cognitive science.
- Applied decision making (e.g., consumer choices, choices among multiple health programs)
- Human factors and accident analysis

Assumed Knowledge

Students should have successfully completed PSYC2300 and STAT1070.

Contact Hours

Lecture
Face to Face On Campus
3 hour(s) per Week for Full Term

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

CONTACTS

Course Coordinator

Callaghan and Ourimbah
A/Pr Ami Eidels
Ami.Eidels@newcastle.edu.au
(02) 4921 7089
Consultation:

Teaching Staff

Other teaching staff will be advised on the course Canvas site.

School Office

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SYLLABUS

Course Content

- contemporary theories and models in selected topics of cognitive science
- identifying real-life problems in the four selected cognitive science areas
- presenting applied approaches for testing and solving these problems
- analysing and reporting data to inform hypothetical consumers

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. explain theories of cognitive workload, and methods for its assessment;
2. explain theories of and models of decision making and methods for their assessment;
3. explain in general terms (i.e., without a formal notation) selected mathematical and computational models used cognitive science, and methods for model selection and fitting
4. explain theories of human error and systemic failure, and apply these to real-world incidents and accidents
5. Identify real-life relevant problems, design appropriate methods to examine each problem and communicate these effectively in written form, to non-expert audience

Course Materials

Required Reading:

- A list of required reading will be provided per module and available via Canvas

SCHEDULE

Week	1	2	3	4	5	6	7	8	9	10	Break	11	12	13
Module number	1 (A Eidels)			2 (S Brown)			3 (L Wall)			4 (R Wynne)				
Topic	Information processing, cognitive workload and capacity (theory and applications)			Applying mathematical and computational models to cognitive science			Applied decision making (e.g., consumer choices, choices among multiple health programs)			Human Factors and Accident Analysis				
Assessment	Written assignment (25%, 800 w) Due end of week 4 >> Friday August 11, 23:59			Written assignment (25%, 800 w) Due end of week 7 >> Friday Sept 1, 23:59			Written assignment (25%, 800 w) Due end of week 10 >> Friday Sept 22, 23:59			Written assignment (25%, 800 w) Due end of week 13 >> Friday Oct 27, 23:59				

Notes on *structure* and *assessment*:

The course is made up of 4 modules, 3 weeks each.

There is a written assignment for each module. Each assignment is worth 25% of the total course mark, with a word limit of 800 words.

They are due in weeks 4, 7, 10, and 13 of the term, which are marked orange.

- CALLAGHAN Lecture – Tuesday 1pm, Lecture Theatre VG10
- OURIMBAH Lecture – Friday 12pm, Room CN2108

ASSESSMENTS

This course has 4 assessments. Each assessment is described in more detail in the sections below.
Pease note: the use of generative models such as chatGPT and alike for the assessments is NOT PERMITTED

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Written assignment 1	Friday August 11, 23:59	Individual	25%	1, 5
2	Written assignment 2	Friday Sept 1, 23:59	Individual	25%	2, 5
3	Written assignment 3	Friday Sept 22, 23:59	Individual	25%	3, 5
4	Written assignment 4	Friday Oct 27, 23:59	Individual	25%	4, 5

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Written assignment 1

Assessment Type Written Assignment
Description written assignment on information processing and cognitive workload
Weighting 25%
Length 800 words. Word limits include headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. The word limit will allow a tolerance of 10% and any work after the maximum word limit will not be included within the allocation of marks. In other words, the marker will STOP reading at 880 words.
Due Date Friday August 11, 23:59
Submission Method Online
Return Method Online
Feedback Provided Online - Sept 1, 2023.

Assessment 2 - Written assignment 2

Assessment Type Written Assignment
Description written assignment on the application of mathematical and computational models to cognitive science
Weighting 25%
Length 800 words. Word limits include headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. The word limit will allow a tolerance of 10% and any work after the maximum word limit will not be included within the allocation of marks. In other words, the marker will STOP reading at 880 words.
Due Date Friday Sept 1, 23:59
Submission Method Online
Return Method Online
Feedback Provided Online - Sept 22, 2023.

Assessment 3 - Written assignment 3

Assessment Type Written Assignment
Description written assignment on applied decision making
Weighting 25%
Length 800 words. Word limits include headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. The word limit will allow a tolerance of 10% and any work after the maximum word limit will not be included within the allocation of marks. In other words, the marker will STOP reading at 880 words.
Due Date Friday Sept 22, 23:59
Submission Method Online
Return Method Online
Feedback Provided Online - Oct 13, 2023.

Assessment 4 - Written assignment 4

Assessment Type	Written Assignment
Description	written assignment on Human Factors and Accident Analysis
Weighting	25%
Length	800 words. Word limits include headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. The word limit will allow a tolerance of 10% and any work after the maximum word limit will not be included within the allocation of marks. In other words, the marker will STOP reading at 880 words.
Due Date	Friday Oct 27, 23:59
Submission Method	Online
Return Method	Online
Feedback Provided	Online - Nov 17, 2023.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face to face meetings or supervision.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.

Academic Misconduct	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35.
Adverse Circumstances	The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where: 1. the assessment item is a major assessment item; or 2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system; 3. you are requesting a change of placement; or 4. the course has a compulsory attendance requirement. Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at: https://policies.newcastle.edu.au/document/view-current.php?id=236
Reasonable Adjustment Plan (RAP)	If you are registered with Accessibility and have been provided with a Reasonable Adjustment Plan (RAP), please ensure that you provide your Course Coordinator with a copy as soon you can or let your Course Coordinator know that you are still waiting for your RAP.
Important Policy Information	The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at https://www.newcastle.edu.au/current-students/no-room-for/policies-and-procedures that support a safe and respectful environment at the University.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.