



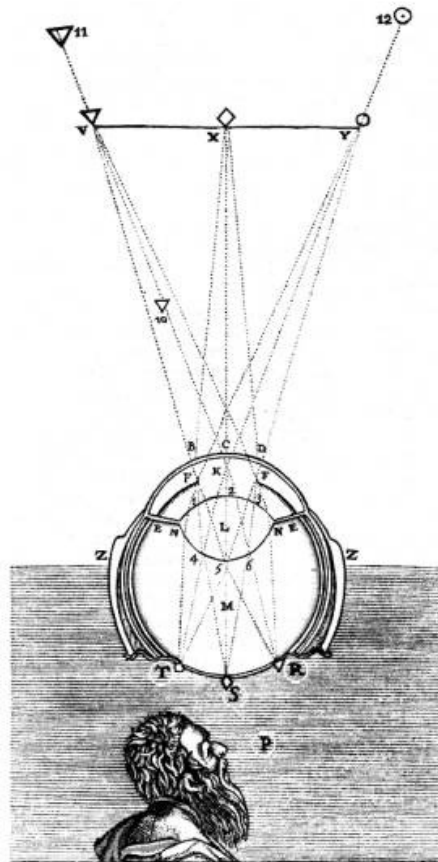
UNSW
THE UNIVERSITY OF NEW SOUTH WALES

**Arts and
Social Sciences**

SCHOOL OF HUMANITIES & LANGUAGES

ARTS 2301

COMPUTERS, BRAINS & MINDS



SEMESTER 2, 2013

TABLE OF CONTENTS

COURSE STAFF	3
COURSE DETAILS	3
COURSE AIMS.....	3
STUDENT LEARNING OUTCOMES.....	3
LEARNING AND TEACHING RATIONALE	3
TEACHING STRATEGIES	3
COURSE SCHEDULE	4
COURSE EVALUATION AND DEVELOPMENT	5
REFERENCES.....	6
TEXTS.....	6
SUGGESTED REFERENCES	ERROR! BOOKMARK NOT DEFINED.
JOURNALS	ERROR! BOOKMARK NOT DEFINED.
WEBSITES.....	ERROR! BOOKMARK NOT DEFINED.
ASSESSMENT	6
ASSIGNMENT SUBMISSION.....	7
ASSIGNMENT COLLECTION	7
ASSIGNMENT EXTENSIONS	7
LATE SUBMISSION OF ASSIGNMENTS.....	ERROR! BOOKMARK NOT DEFINED.
ATTENDANCE.....	7
ACADEMIC HONESTY AND PLAGIARISM	7
OCCUPATIONAL HEALTH AND SAFETY POLICY	7
STUDENT EQUITY AND DIVERSITY.....	8
OTHER STUDENT INFORMATION.....	8

COURSE STAFF

Convener/Lecturer Details:

Name: Associate Professor Peter Slezak
Room: Morven Brown 315
Phone: 9385-2422
Email: p.slezak@unsw.edu.au
Consultation Times: By prior arrangement

COURSE DETAILS

Introduction to contemporary and historical discussions of mind, thought, intelligence, language and consciousness. Focuses on the issues which arise in connection with the so-called 'cognitive sciences' - disciplines including neuro-science, psychology, linguistics, philosophy of mind and artificial intelligence. Can computers think? Is the brain a computer?

Units of Credit: 6

COURSE AIMS AND STUDENT LEARNING OUTCOMES

The aims of this course are:

Students who successfully complete this course will have gained an understanding, and also an ability to apply and think critically about key concepts and controversies in the philosophy of mind a cognitive science (These include the mind-body problem and consciousness, intelligence in artificial systems; language and innateness, intentionality and meaning; creativity and problem solving heuristics; neural nets, distributed processing; visual imagery and mental representations, decision making).

LEARNING AND TEACHING RATIONALE & TEACHING STRATEGIES

The teaching is conducted through lectures and tutorials. Lectures are designed to inform as well as provoke critical thinking, debate and to stimulate thoughtful reading of the literature.

Tutorials are intended to provide an opportunity to read important scholarly articles and to discuss and debate the central issues in an informal setting.

COURSE SCHEDULE

Week 1

No lecture

Week 2

Historical background to cognitive science

Aristotle, *De Anima*

René Descartes, *Meditations*

René Descartes, *Dioptrics*

Peter Slezak, Descartes' Diagonal Deduction.

Week 3

Dualism, Materialism, Consciousness

Colin McGinn, Can we solve the mind-body problem?

Thomas Nagel, What is it like to be a bat?

Frank Jackson, What Mary Didn't Know.

Week 4

Mind-Body problem, functionalism

Peter Slezak, The mind-brain problem

Ned Block, Troubles with Functionalism

Keith Gunderson, Asymmetries & mind-body perplexities

Week 5

Behaviourism

Noam Chomsky, Review of Skinner's *Verbal Behavior*

Kenneth MacCorquodale. On Chomsky's Review of Skinner

Daniel Dennett, Skinner Skinned.

Week 6

Chomsky's Revolution: Language & Mind

John Searle, Chomsky's Revolution in Linguistics

Zenon Pylyshyn, Competence & Psychological Reality

Boeckx and Piattelli-Palmarini, Language as a natural object.

Week 7

Innatness

Plato, *Meno*

Noam Chomsky, Recent Contributions to the Theory of Innate Ideas

Hilary Putnam, The Innateness Hypothesis and Explanatory Models
Marc Hauser, Noam Chomsky, Tecumseh Fitch, The Faculty of Language

Week 8

Turing Machines & Gödel's Theorem

Alan Turing, Computing Machinery & Intelligence
J. R. Lucas. Minds, Machines & Gödel.
Peter Slezak. Gödel's Theorem and the Mind.

Week 9

Artificial Intelligence

Newell & Simon, Computer Science as Empirical Inquiry
Daniel Dennett, AI as Philosophy & as Psychology
John Searle, Minds, Brains & Programs

Week 10: PUBLIC HOLIDAY

Week 11

Connectionism, Neural Nets

Ramsey, Stich & Garon, Connectionism, Eliminativism etc..
Paul Thagard. Parallel Computation & Mind-Body Problem.
Tim van Gelder, What Might Cognition Be, If Not Computation?

Week 12

Mental Representation: Imagery Debate

Zenon Pylyshyn, Return of the Mental Image.
Stephen Kosslyn, Mental Imagery.
Peter Slezak, The Tripartite Model of Representation

Week 13

Decision Making & Judgment

Tversky & Kahneman, Judgment Under Uncertainty: Heuristics & Biases
Peter Slezak, Demons, Deceivers & Liars: Newcomb's *Malin Génie*.

COURSE EVALUATION AND DEVELOPMENT

Student evaluative feedback on this course is welcomed and is gathered periodically, using among other means UNSW's Course and Teaching Evaluation and Improvement (CATEI) process.

Student feedback is taken seriously, and continual improvements are made to the course based in part on such feedback. Significant changes to the course will be communicated to subsequent cohorts of students taking the course.

REFERENCES

Texts

Text-book for the course is the specially prepared reading kit available from bookshop.

Recommended Background reading

Steven Pinker, *How the Mind Works* (Penguin)
Steven Pinker, *The Language Instinct* (Penguin)
Steven Pinker, *The Blank Slate* (Penguin)

Students seeking resources can also obtain assistance from the UNSW Library. One starting point for assistance is:

<http://info.library.unsw.edu.au/web/services/services.html>

ASSESSMENT

1. **Tutorials 30%.** Attendance at tutorials is compulsory. Students are expected to participate actively in tutorial discussions each week. In addition, each student is required to make two presentations that will consist of an oral exposition and critical discussion of selected readings from the set texts.

Brief written journals of the tutorial readings must be submitted each week, though these must not take the form of a fully referenced essay. Assessment will be based on the oral presentation, the written journals and weekly participation.

2. **Essay 30%.** A list of essay topics is provided. Essays should be approximately 3,000 words in length and must conform to the usual conventions regarding references and citations.

Due Date: Friday, November 1

3. **Class Tests 2 x 20%.** Tests are to be held either at the lecture venue in the lecture time on dates to be announced and will consist of short answer questions based on the lecture material and set texts, or they may be a take-home test.

Assignment Submission

- The cut off time for all assignment submissions in the School is **4pm** of the stated due date.
- All hard/paper copy assessments should be posted into the Assignment Drop Boxes outside the front counter of the School of Humanities and Languages on level 2, Morven Brown Building by 4pm on the due date.
- A completed cover sheet must be securely attached to assignments. The School is not responsible for any missing pages from poorly bound or stapled assignments.

Assignment Collection

Assignments should be collected from your lecturer/tutor and must be collected by the owner/author of the assignment. A Stamped Self Addressed Envelope must be provided on submission if students require their assignment to be posted back to their home address.

Assignment Extensions

A student may apply to the Lecturer/Tutor for an extension to the submission date of an assignment. Requests for extension must be made via myUNSW before the submission due date, and must demonstrate exceptional circumstances, which warrant the granting of an extension. If medical grounds preclude submission of assignment by due date, contact should be made with subject coordinator as soon as possible. A medical certificate will be required for late submission and must be appropriate for the extension period.

To apply for an extension please log into myUNSW and go to My Student Profile tab > My Student Services channel > Online Services > Special Consideration

ATTENDANCE

To successfully complete this unit you are required to attend minimum 80% of classes. If this requirement is not met you will fail the unit. The Lecturer will keep attendance records.

ACADEMIC HONESTY AND PLAGIARISM

Students seeking information on plagiarism should visit the following web site:

<http://www.lc.unsw.edu.au/plagiarism/index.html>

OCCUPATIONAL HEALTH AND SAFETY POLICY

UNSW's Occupational Health and Safety (OHS) Policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others.

Any OHS concerns should be raised with your immediate supervisor, the School's OHS representative, or the Head of School. The OHS guidelines are available at:

http://www.ohs.unsw.edu.au/ohs_policies/index.html

STUDENT EQUITY AND DIVERSITY

Students who have a disability that requires some adjustment in their learning and teaching environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of the course. Alternatively, the Student Equity and Diversity Unit can be contacted on 9385 4734. Further information is available at:

<http://www.studentequity.unsw.edu.au>

GRIEVANCES

All students should be treated fairly in the course of their studies at UNSW. Students who feel they have not been dealt with fairly should in the first instance attempt to resolve any issues with their tutor or the course convenors. If such an approach fails to resolve the matter, the School of Humanities and Languages has an academic member of staff who acts as a Grievance Officer for the School. This staff member is identified on the notice board in the School of Humanities and Languages. Further information about UNSW grievance procedures is available at: <https://my.unsw.edu.au/student/atoz/Complaints.html>

OTHER STUDENT INFORMATION

myUNSW is the single online access point for UNSW services and information, integrating online services for applicants, commencing & current students and UNSW staff. To visit myUNSW please visit either of the below links:

<https://my.unsw.edu.au>

<https://my.unsw.edu.au/student/atoz/ABC.html>

SUGGESTED ESSAY TOPICS

1. Is consciousness a brain process? Discuss the development of materialism to functionalism.
2. Is the mind the 'software' of the brain? - discuss machine state functionalism as a theory of the mind.
3. Can the Mind-Body Problem be solved? Discuss the skepticism of McGinn arising from the subjective character of mental states. (See also Chalmers 1996 *The Conscious Mind*)
4. Discuss the 'mentalist' character of modern psychology.
5. Discuss the competence/performance distinction and the psychological reality of grammars.
6. The biological basis of language capacity. Do Chimpanzees have a language?
7. Language - learned or inherited?
8. Is psychology reducible to neurophysiology?
9. Is the brain a computer?
10. Discuss the problem of functional localization in the brain.
11. Does Gödel's theorem refute mechanism? (see Lucas, Penrose)
12. The Turing Test: Is imitation enough?
13. Are there limits to computer intelligence?
14. Discuss the relevance of AI to psychology.
15. Give a critical review of Dreyfus' *'What Computers (Still) Can't Do'*.
16. Locked in the Chinese Room: Searle, simulation and 'strong AI'.
17. What is the significance of PDP or 'neural net' research for theories of mind?
18. Is cognition symbol processing?
19. Is the writing on the wall for pictures in the head? Discuss the imagery debate. (Pyslyshyn 2003)
20. Discuss Pylyshyn's (1984) concept of "cognitive penetrability".
21. Discuss the autonomy of psychology and the problem of inter-theoretic reduction.
22. Discuss the concept of explicit and implicit representation.
23. Discuss the nature and status of folk psychology.
24. Discuss J.J. Gibson's "direct realism" as a critique of representational theories.
25. Discuss Fodor's (1980) "methodological solipsism" as a research strategy.
26. Discuss the issues concerning the nature of human rationality especially in the light of recent research into "heuristics and biases".
27. Discuss the application of problem-solving heuristics in AI to the problem of scientific reasoning and scientific discovery. (See Langley, Simon, Bradshaw & Zytkow, Thagard)
28. Discuss the 'Dynamic System Theory' (see Port & van Gelder eds.) alternative to cognitive science.
29. Discuss Chomsky's critique of Skinner's 'Verbal Behaviour'. In particular, consider the reply to Chomsky by MacCorquodale and how adequate may be his defence.
30. Is the competence-performance distinction tenable? Additional references: E. Stabler, 'How are Grammars Represented?' in *Behavioural and Brain Sciences*, Vol. 3, (1983).
31. Discuss the psycholinguistic research on language and its bearing on generative grammars. (See Fodor, Bever and Garrett 1974 'The Psychology of Language')
32. Compare and contrast Chomsky's views on language with those of Piaget (see Piattelli-Palmerini 1980)
33. Discuss the empirical status and claims of generative grammar. Is linguistics psychology? (Devitt 2006)
34. What kind of knowledge is 'tacit' knowledge?
35. Discuss the view that linguistics is a branch of psychology (see M. Devitt 2006 'Ignorance of Language')
36. Discuss the biological basis of language capacities. (See Studdert-Kennedy, ed. (1983) *Psychobiology of Language*. David Lightfoot (1982) *The Language Lottery*. E. Walker (1978) *Explorations in the Biology of Language*. David Caplan (1982) *Biological Studies of Mental Processes*. D. Caplan, A. Roch-Lecours & A. Smith eds. (1984) *Biological Perspectives on Language*, Jamieson 'Biolinguistics')
37. What can grammars tell us about the brain and vice-versa? Discuss neurolinguistics research in the light of generative grammars (see D. Caplan (1987) *Neurolinguistics and Linguistic Aphasiology*. Arbib, Caplan and Marshall eds., (1982) *Neural Models of Language Processes*.)
38. Was Dr. Doolittle right? Do animals have language? Or is it species specific to humans. (See Premack, Terrace and others)
39. Discuss the debates surrounding Chomsky's claims for the 'innateness hypothesis' in relation to grammars.
40. Discuss the classical dispute between Rationalists and Empiricists in the light of Chomskyan linguistics.
41. Do we think in language? (See P. Carruthers, 1996)
42. Discuss the controversies surrounding the evolution of language.
42. Discuss the problems and debates arising in connection with colour perception.
43. Discuss Berkeley's theory of perception (see Atherton & Schwartz)
44. Discuss Hume's conception of concepts ("ideas") (See J. Fodor 2003, *Hume Variations*)
45. **A topic of your own choice, provided it has been approved by the lecturer.**