

Syllabus (incl. tests, assignments, grading), CSC191/291/22
Machines and Consciousness
(approx. lecture-by-lecture, with some slack)

1. Thu Jan. 13 Overview. Self-awareness (access consciousness) and phenomenal consciousness. *Pinker, Could a computer ever be conscious?* (Corry & Alicia)
2. Tue Jan. 18 Robot self-awareness: propositions about itself in the head. Knowledge representation and reasoning. *Printed notes.*
3. Thu Jan. 20 Lisp intro: towards programming self-awareness.
4. Tue Jan. 25 Knowledge representation and reasoning, continued. *Printed notes.*
5. Thu Jan. 27 Language. McDermott, p.64-80. *Notes by instructor.*
6. Tue Feb. 1 Planning and decision making in robots. *Notes by instructor*
7. Thu Feb. 3 Continuation of above topics (spill-over)
8. Tue Feb. 8 A basic (self-aware) agent. *Vere and Bickmore '90*
9. Thu Feb. 10 Self-motivated agents in Gridworld. Free will? *D. Liu materials*
10. Tue Feb. 15 A glimpse of games, vision & robotics. *McDermott, p.29-39, p.47-64;*
11. Thu Feb. 17 The "easy" and "hard" problems of C. The Explanatory Gap. Defining C. Philosophical zombies ("conceivability"/"absent qualia" argument). *Blackmore ch.1.*
12. Tue Feb. 22 The brain and the role of C. C as the "publicity organ" of the brain. Brain mechanisms in C. Sensory bias of C. Mental imagery and the inner voice. C & attention. *Baars p.ix-x, p.6-7, p.27-31, p.55-59, p.62-66, p.73-78, p.100.*
13. Thu Feb. 24 Neural correlates of C. Neurons & qualia. Binocular rivalry. Damaged minds. Blindsight. *Blackmore ch.2, Baars p.66-72.*
14. Tue Mar. 1 Split brains. Dreams and drugs. *Blackmore p.70-72 Ch.5 & ch.7 (to p.111).*
15. Thu Mar. 3 Animal C. *Blackmore ch.8 (to p.124), Baars p. 31-33;*

Robot **phenomenal** consciousness: "scannable" signal sites in the head?
The whispering sunglasses. The topology of sensory C. Could a robot feel pain, joy? Project teams (1-3 students per team), CSC 291 should be finalized (with TA help,if needed)

16. Tue Mar. 8 SPRING BREAK

17. Thu Mar. 10 SPRING BREAK

18. Tue Mar. 15 Decision making and free will. Libet's lagging will. Wegner & mistaken sense of agency and nonagency. *Blackmore ch. 3*, esp. "Libet's delay"; *Blackmore ch.6*

18. Thu Mar 17 Review; TEST 1 (OVERNIGHT TO FRI MAR 18, 11:59PM)

19. Tue Mar. 22 Affect and proto-affect. *Ortony, Norman & Revelle, ch. 7, Fellous & Arbib*

20. Thu Mar. 24 Function & neural basis of emotions. *Rolls, ch. 5, Fellous & Arbib*

21. Tue Mar. 29 Emotional processing (fear and love). *Fellous & Ledoux, ch. 4, Fellous & Arbib*

22. Thu Mar. 31 Robot "emotion". *Breazeal & Brooks, ch. 10, Fellous & Arbib*;
PROJECT PROPOSALS DUE (1 printed page, single-spaced)

23. Tue Apr. 5 Heated vs. dispassionate appraisals. Evolution of language and C.
Arbib, ch. 12, Fellous & Arbib.

24. Thu Apr. 7 McDermott's "computational theory of C". (Useful prior reading:
McDermott's overview of prior approaches, *p. 19-27.*)
McDermott, ch.3; see also summary *p. 215.*

25. Tue Apr. 12 McDermott's defense of his model of C. Zombies, color-deprived Mary,
inverted spectra, Nagel's bat, Searle's Chinese Room, etc. *McDermott, ch.4*

26. Thu Apr. 14 Robots, people, and morality. *McDermott, ch.6*

27. Tue Apr. 19 Reconsider: Will intelligent, autonomous robots experience pain?

28. Thu Apr. 21 *Project presentations*

29. Tue Apr. 26 (*Project presentations, cont'd?*) Review

TEST 2 (NONCUMULATIVE, OVERNIGHT TO WED APR 27, 11:59PM)

Schedule of assignments

Thu Jan 20: Lisp 1, due Tue Feb 8, 11:00am

Tue Jan 25: Homework 1, due Tue Feb 1, 11:00am

Tue Feb 8: Homework 2, due Tue Feb 15, 11:00am

Thu Feb 17: Lisp 2, due Mon Mar 15, 5:00pm

Tue Feb. 22: Homework 3, due Wed Mar 2, 5:00pm

Thu Mar 3: CSC 291 project teams (1-3 students per team) should be finalized
(with TA help, if needed)

Tue Mar. 15: Homework 4, due Tues Mar 22, 11:00am

Thu Mar 17: TEST 1 (OVERNIGHT TO FRI MAR 18, 11:59PM)

Thu Mar 24: Project proposals due (1 printed page, single-spaced).

Tue Apr 5: Homework 5, due Tue Apr 12, 11:00am

Thu Apr 21: CSC 291 PROJECT PRESENTATIONS;

Tue Apr 26: TEST 2 (NONCUMULATIVE, OVERNIGHT TO WED 11:59PM)

Thu Apr 28: PROJECT REPORTS DUE

Grading

% weight 191/291

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| - 5 homework assignments (answer questions, write essays) | 40 | 35 |
| - 2staged Lisp exercises (oriented towards "self-awareness") | 26 | 16 |
| - 2 tests (midterm & noncumulative final test) | 34 | 24 |
| - Gridworld project (teams of 1-3) | | 25 |