



## Philosophy 256 / Psychology 256

### Introduction to Cognitive Science, Fall, 2015

**Professor:** [Paul Thagard](#)

**Office hours** (HH368): MW 10-11 and by appointment.

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**Web page:** <http://cogsci.uwaterloo.ca/courses/phil256.html>.

**Time:** MW 8:30-9:50, AL 211. To improve learning, please turn off all electronic devices such as phones, computers, and transcranial magnetic stimulators. See [blog](#) for reasons.

**Textbooks:** P. Thagard, *Mind: Introduction to Cognitive Science*, **2nd edition**. P. Thagard, ed., *Mind Readings: Introductory Selections in Cognitive Science*. Royalties from book sales for this course are donated for UW undergraduate scholarships.

**Assignments:** Marks will be based on:

- 3 exams, in class, **Oct. 7, Nov. 9, and Dec. 2**, each worth 23%. Students are responsible for material in textbooks, lecture notes, and lectures. [NEW NOV. 17: review questions for exam 3.](#)
- Essay, due **Nov. 23**, worth 23% of the final mark. See [Essay topics \(updated Oct. 15\)](#).
- Essays and exams must be completed on schedule except for documented cases of serious medical problems or family emergencies. Travel plans and workload from other courses are not legitimate excuses.
- One-minute essays. These will be written at the end of each class and will be worth a total of 8% of the total mark. You can miss 2 of these without penalty.

**Description:** Cognitive science is the interdisciplinary study of mind and intelligence, operating at the intersection of psychology, philosophy, computer science, linguistics, anthropology, and neuroscience. This course will describe the different methodologies and theoretical contributions of these disciplines to questions such as mental representation, the nature of expertise, and consciousness. It will focus on a fundamental question in cognitive science research: What kinds of representations must be postulated to explain human intelligence or to develop computer intelligence? Is a scientific understanding of mind possible? This course is truly interdisciplinary and students are advised that it is not like conventional philosophy or psychology courses. No prerequisite.

#### Readings:

Week	Dates	Topic	<i>Mind, ch.</i>	<i>Mind Readings</i>
1	Sept. 14-16	Representation and computation	1	1
2	Sept. 21-23	Logic	2	2
3	Sept. 28-30	Rules	3	3-4
4	Oct. 5-7	Concepts, EXAM 1	4	5
5	Oct. 14-19	Analogies	5	6
6	Oct. 21-26	Images	6	7

7	Oct. 28- Nov. 2	Connections	7	8
8	Nov. 4-9	Connections, EXAM 2	8	
9	Nov. 11-16	Brains, Emotions	9-10	9
10	Nov. 18-23	Consciousness, ESSAY	11-12	10-11
11	Nov. 25-30	Environments Dynamic systems	12-13	12-13
12	Dec. 2	Future of cognitive science, EXAM 3	14	

This class is a core course for the [Cognitive Science Minor](#).

[Cognitive Science Glossary](#)

[Cognitive Science Resources](#)

## Lecture notes

**Note:** These may be revised as the course goes on with the addition of more information and links.

[Week 1: Representation and computation](#)

- [Powerpoint slides \(pdf\)](#)

[Week 2: Logic](#)

- [Powerpoint slides \(pdf\)](#)

[Week 3: Rules.](#)

- [Powerpoint slides \(pdf\)](#)

[Week 4: Concepts.](#)

- [Powerpoint slides \(pdf\)](#)

[Week 5: Analogies.](#)

- [Powerpoint slides \(pdf\)](#)

[Week 6: Images.](#)

- [Powerpoint slides \(pdf\)](#)
- [Comparison of representations \(pdf\)](#)

[Weeks 7-8: Connections \(neural networks\)](#)

- [Powerpoint slides for week 7 \(pdf\)](#)

- [Powerpoint slides for week 8 \(pdf, updated Oct. 28, 2013\)](#)

### [Week 9: Brains and emotions](#)

- [Powerpoint slides \(pdf\)](#)

### [Week 10: Consciousness and world challenges](#)

- [Powerpoint slides \(pdf\)](#)
- [Powerpoint slides for Eureka talk \(pdf\)](#)

### [Week 11: Dynamic systems and the social challenge](#)

- [Powerpoint slides \(pdf\)](#)

### [Week 12: Future of cognitive science](#)

- [Powerpoint slides \(pdf\)](#)

### **From the Faculty of Arts:**

All students registered in the courses of the Faculty of Arts are expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. When the commission of an offence is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offences and types of penalties, students are directed to consult the summary of Policy #71 which is supplied in the Undergraduate Calendar (section 1; on the Web at [www.adm.uwaterloo.ca/infosec/Policies/policy71.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm)). If you need help in learning what constitutes an academic offence; how to avoid offences such as plagiarism, cheating, and double submission; how to follow appropriate rules with respect to “group work” and collaboration; or if you need clarification of aspects of the discipline policy, ask your TA and/or your course instructor for guidance. Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean. Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>.”

[Faculty of Arts information on plagiarism and other offences.](#)

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[Computational Epistemology Laboratory.](#)

[Paul Thagard](#)

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