

Course Schedule

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/course-schedule.aspx

Important: **ALL TIMES EASTERN** - Please see the [University Policies](#) section of your Syllabus for details

Week	Module	Readings	Activities and Assignments	End/Due Date	Weight (%)
1	Module 01: Introduction to the Cognitive Revolution	<p>Miller, George A (March, 2003). "The Cognitive Revolution: a historical perspective". <i>Trends in Cognitive Science</i>, Vol. 7, No. 3, pp. 141-144.</p> <p>Thagard, Paul (2009). "Why Cognitive Science Needs Philosophy and Vice Versa". <i>Topics in Cognitive Science</i> 1, pp. 237-254.</p>			

2	<u>Module 02: The Pre-History of Cognitive Science</u>	<p>Aristotle, "De Anima" from <i>Reading in Ancient Greek Philosophy: From Thales to Aristotle</i> (Third Edition), edited by S. Marc Cohen, Patricia Curd, and C.D.C. Reeve. Indianapolis: Hackett, pp. 809-831 (Bekker pagination 402a-434a).</p> <p>Descartes, René (2011). "Meditations on First Philosophy, Second Meditation" from <i>Modern Philosophy</i> (Sixth Edition), edited by Forrest E. Baird. Upper Saddle River, NJ: Prentice Hall, pp. 22-27.</p> <p>Cohen, S. M., Curd, P., & Reeve, C. D. C. (Eds.). (2016). <i>Readings in Ancient Greek Philosophy: From Thales to Aristotle</i>. pp. 175-186.</p>	<u>Introduce Yourself</u>	Friday, May 17, 2019 at 4:30 PM	Ungraded
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3	<p><u>Module</u> <u>03: From Turing Machines to Functionalism</u></p>	<p>Putnam, Hilary (1975). "The Nature of Mental States", in Hilary Putnam, <i>Mind Language and Reality: Philosophical Papers</i>, Vol. 2, Cambridge University Press, pp. 429-440.</p> <p>Turing, Alan (1950). "Computing Machinery and Intelligence". <i>Mind</i>, Vol. 59, No. 236, pp. 433-460.</p> <p>Searle, John (1980). "Minds, Brains, and Programs". <i>The Behavioural and Brain Sciences</i> 3, 417-424.</p>	<p><u>Essay</u> <u>Assignment 1</u> Available Wednesday, May 22, 2019 at 12:05 AM</p>		15%
4	<p><u>Module</u> <u>04: Logic and Cognition</u></p>	<p>Dennett, Daniel (1998, originally published in 1984). "Cognitive Wheels: The Frame Problem of AI", in <i>Brainchildren: Essays on Designing Minds</i>. Cambridge: MIT Press, a Bradford Book, pp. 181-205.</p> <p>Frege, Gottlob (1956, originally published in 1918). "The Thought: A Logical Inquiry". <i>Mind</i>, Vol. 65, No. 259, pp. 289-311.</p>			

5	<p><u>Module 05: Cognition and Linguistic Ability</u></p>	<p>Chomsky, Noam (1993). "On the Nature, Use, and Acquisition of Language". <i>Readings in Philosophy and Cognitive Science</i>, Alvin I. Goldman (ed). MIT Press, pp. 511-534.</p> <p>Everett, Dan (2005). "Cultural Constraints on Grammar and Cognition in Pirahã." <i>Current Anthropology</i>, vol. 46, no. 4, pp. 621-646.</p> <p>Sapir, Edward (1929). "The Status of Linguistics as a Science". <i>Language</i>, vol. 5 iss. 4, pp. 207-214.</p>	<p><u>Essay Assignment 1</u> Due</p>	<p>Friday, June 7, 2019 at 11:55 PM</p>	
6	<p><u>Module 06: Concepts, Part I: The Classical View and Definitions</u></p>	<p>Fodor, Jerry (1995). "Concepts: A Potboiler". <i>Philosophical Issues</i>, vol. 6, content, pp. 1-24.</p> <p>Murphy, Gregory (2002). "Typicality and the Classical View of Categories". <i>The Big Book of Concepts</i>, A Bradford Book, MIT Press, pp. 11-40.</p> <p>Prinz, Jesse (2002). "Desiderata on a Theory of Concepts". <i>Furnishing the Mind: Concepts and Their Perceptual Basis</i>, A Bradford Book, MIT Press, pp. 1-23</p>			

7	<p><u>Module 07: Concepts, Part II: Prototypes, Exemplars and Beyond</u></p>	<p>Fodor, Jerry (1995). "Concepts: A Potboiler". <i>Philosophical Issues</i>, vol. 6, content, pp. 1-24.</p> <p>Rosch, Eleanor (1978). "Principles of Categorization" in <i>Cognition and Categorization</i>, edited by Eleanor Rosch and Barbara Lloyd. Hillsdale, NJ: Lawrence Erlbaum, pp. 27-48).</p> <p>Smith, Edward and Douglas Medin (1999). "The Exemplar View" in <i>Concepts: Core Readings</i>, edited by Eric Margolis and Stephen Laurence. MIT Bradford Books, pp. 207-221.</p>	<p><u>Midterm Take-home Examination Available</u> Wednesday, June 19, 2019 at 12:05 AM</p>		20%
8	<p><u>Module 08: Mental Imagery</u></p>	<p>Kosslyn, Stephen, Giorgio Ganis, and William Thompson (2006). "Mental Images and Mental Representations" from <i>The Case for Mental Imagery</i>. New York: Oxford University Press, pp. 3-23.</p> <p>*Pylyshyn, Zenon (2002). "Mental Imagery: In Search of a Theory," <i>Behavioural and Brain Sciences</i>, 25, pp. 157-238.</p> <p>* Only students who are doing an essay on this topic reading are expected to do this</p>	<p><u>Midterm Take-home Examination Due</u></p>	<p>Wednesday, June 26, 2019 at 11:55 PM</p>	

9	<p><u>Module 09:</u> <u>Fake Brains:</u> <u>Connectionism</u> <u>and Artificial</u> <u>Neural</u> <u>Networks</u></p>	<p>Eliasmith, Chris (2007). "How to Build a Brain: From Function to Implementation," <i>Synthese</i> 159, pp. 373-388.</p> <p>Fodor, Jerry (1997). "Connectionism and the Problem of Systematicity: Why Smolensky's Solution Still Doesn't Work," <i>Cognition</i>, 62, pp. 109-119.</p> <p>Hinton, Geoffrey (1992). "How Neural Networks Learn from Experience," <i>Scientific American</i>, Vol. 267 No. 3, pp. 144-151.</p>	<p><u>Essay</u> <u>Assignment 2</u> Available Wednesday, July 3, 2019 at 12:05 AM</p>		30%
10	<p><u>Module 10:</u> <u>Emotion and</u> <u>Cognition</u></p>	<p>Oatley, Keith, W. Gerrod Parrott, Craig Smith, and Fraswer Watts (2011). "Cognition and Emotion Over 25 Years," <i>Cognition and Emotion</i>, 25 (8), pp. 1341-1348.</p> <p>Damasio, Antonio (1994). "A Passion for Reasoning" from <i>Descartes' Error: Emotion, Reason, and the Human Brain</i>. New York: Avon Books, pp. 245-267.</p> <p>Prinz, Jesse (2006). "Is Emotion a Form of Perception?" <i>Canadian Journal of Philosophy</i>, vol. 36, supplement vol. 32, pp. 137-160.</p>			

11	<u>Module 11:</u> <u>Extended</u> <u>Minds</u>	<p>Clark, Andy and David Chalmers (2010). "The Extended Mind" in <i>The Extended Mind</i>, edited by Richard Menary. MIT, A Bradford Book, pp.27-41.</p> <p>Adams, Fred and Kenneth Aizawa (2009). "Why the mind is still in the head," in the <i>Cambridge Handbook of Situated Cognition</i>, edited by P. Robbins and M. Aydede. Cambridge, MA: Cambridge University Press, 78-95.</p>			
12	<u>Module 12:</u> <u>Situated</u> <u>Cognition</u>	<p>de Bruin, Leon, and Lena Kästner (2012). "Dynamic Embodied Cognition." <i>Phenomenology and the Cognitive Sciences</i>, Vol. 11, Issue 4, pp. 541-563.</p> <p>Jacobsen, Ann Jaap (2012). "Seeing as a Social Phenomenon", in Robyn Bluhm, Anne Jaap Jacobson & Heidi Lene Maibom (eds.), <i>Neurofeminism: Issues at the Intersection of Feminist Theory and Cognitive Science</i>. Palgrave-Macmillan, pp. 216-229.</p>	<u>Essay</u> <u>Assignment 2</u> Due	Wednesday, July 24, 2019 at 11:55 PM	
	Final Examination		<u>Final Examination</u>		35%

Please carefully review the information about [writing exams](#) for online courses, including dates, locations, how to make examination arrangements, writing with a proctor, and deadlines.

If you are taking **any on-campus courses**, you will automatically be scheduled to write your exam on campus. No action is required.

- If your **address in QUEST is within 100 km** of an [examination centre](#), you must choose an exam centre in [Quest](#) by **Sunday, May 19, 2019**. This must be done each term.
- If your address in Quest is **more than 100 km from an exam centre, you must arrange for a proctor**. Please review the guidelines and deadlines for [writing with a proctor](#). This must be done each term.

Your online course exam schedule will be available in Quest approximately four weeks before your exam date(s). Instructions on how to find your schedule are posted on the [Quest Help](#) page.

Your access to this course will continue for the duration of the current term. You will not have access to this course once the next term begins.

Contact Information

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/contact-information.aspx

Announcements

Your instructor uses the **Announcements** widget on the **Course Home** page during the term to communicate new or changing information regarding due dates, instructor absence, etc., as needed.

You are expected to read the announcements on a regular basis.

To ensure you are viewing the complete list of announcements, you may need to click **Show All Announcements**.

Discussions

A **General Discussion** topic* has also been made available to allow students to communicate with peers in the course. Your instructor may drop in at this discussion topic.


Contact Us

Who and Why	Contact Details
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<p>Instructor and TA</p> <ul style="list-style-type: none"> • Course-related questions (e.g., course content, deadlines, assignments, etc.) • Questions of a personal nature 	<p>Post your course-related questions to the Ask the Instructor discussion topic*. This allows other students to benefit from your question as well.</p> <p>Questions of a personal nature can be directed to your instructor or your TA.</p> <p>Instructor: William Jordan wjjordan@uwaterloo.ca</p> <p>Instructor: Blake Freier bfreier@uwaterloo.ca</p> <p>Your instructor checks email and the Ask the Instructor discussion topic* frequently and will make every effort to reply to your questions within 24–48 hours, Monday to Friday.</p> <p>The Philosophy Department can be reached at phil-online@uwaterloo.ca or +1 519-888-4567 ext. 32449</p>
<p>Technical Support, Centre for Extended Learning</p> <p>Technical problems with Waterloo LEARN</p>	<p>learnhelp@uwaterloo.ca</p> <p>Include your full name, WatIAM user ID, student number, and course name and number.</p> <p>Technical support is available during regular business hours, Monday to Friday, 8:30 AM to 4:30 PM (Eastern Time).</p> <p>LEARN Help Student Documentation</p>
<p>Learner Support Services, Centre for Extended Learning</p> <ul style="list-style-type: none"> • General inquiries • WatCards (Student ID Cards) • Examination information 	<p>Student Resources</p> <p>extendedlearning@uwaterloo.ca +1 519-888-4002</p> <p>Include your full name, WatIAM user ID, student number, and course name and number.</p>

*Discussions can be accessed from the **Course Home** page by clicking **Connect** and then **Discussions** on the course navigation bar.

Course Description and Learning Outcomes

 contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/course-description-and-learning-outcomes.aspx

Course Description

This course will be a historical and philosophical introduction to some of the main themes and interdisciplinary questions at the heart of cognitive science. As a relatively new scientific discipline (in comparison with, say, physics or chemistry), many of the foundational issues are still to be settled. This has led to lively debate and congress between people from competing schools of thought, bringing with them insights from a wide range of backgrounds, including philosophy, psychology, linguistics, anthropology, computing and AI research, mathematics, and neuroscience (to name but a few). While cognitive science gets its proper start after WWII, we will see how the roots of cognitive science go back much deeper in the Western intellectual tradition. One should not be surprised about this much longer history, given that cognitive science asks a range of very specific questions about how thinking works, but also very general philosophical questions, such as:

- What is intelligence? How is it studied?
- Can we make intelligent machines?
- Is the mind a computer? If so, what kind of computer? What is the nature of computation?
- Do we think by using discrete rules?
- What is the content of thought — is it quasi-linguistic, conceptual, imagistic, analogical?
- What differences and similarities are there between cognition in humans and non-human animals?
- Is some cognition inherently social?
- Does cognition happen in the head, or does it extend into the world?
- What is the role of emotion in cognition?

While we will discuss different things minds can do, and the different ways various disciplines study the mind, we will concentrate primarily on theories of mental functioning and mental content. The first two weeks of the course will cover the philosophical and psychological prehistory of cognitive science, and then we will start looking at views of the mind that have been developed since the 1950s.

Learning Outcomes

The hope is that everyone learns new ways of thinking about how the mind works, and comes to gain a respect for interdisciplinary studies of the mind. Beyond this, we also hope to achieve some learning outcomes not specifically tied to course content, including critical thinking skills and writing skills. By the end of this class, students should be able to:

- conceptualize the different views of mental functioning and mental representation we will encounter;
- critically assess arguments made for different theories of mind (mental function and mental content);
- distinguish between normative/evaluative questions about how we ought to think and descriptive/factual questions about how we actually do think;
- identify, analyse/define, and apply key terminology from the various disciplines we will encounter;
- appreciate the promises and pitfalls of interdisciplinary research regarding cognition;
- communicate your own analyses and evaluative arguments effectively in written work.

This online course was developed by Nicholas Ray, with instructional design and multimedia development support provided by the Centre for Extended Learning. Further media production was provided by Instructional Technologies and Multimedia Services.

About the Course Author

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/about-the-course-author.aspx

Course Author — Nick Ray

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Educational Background

Professor Nick Ray received his BA from Wilfrid Laurier University in 2003, studying Philosophy and History. He received his MA in Philosophy from The University of Western Ontario in 2004, and his PhD, also from Western, in 2012. His PhD research focussed on perceptual judgements of magnitude, position, orientation, and displacement of medium-sized objects and how we might be able to recover a significant fragment of modern theories of space and time (in physical theory) from such judgements.

Current Research

Nick's research is concerned with the relationship between perception and cognition, and the ways in which we produce content-rich thoughts about the world based on the comparatively meagre fund of stimuli that sensory experience provides. This research takes place at the intersection of epistemology and cognitive science. How is it that we begin to construct models of the external causes of sensory stimulation based only on sensory stimulation itself? Some theorists refer to this as the problem of getting out of "the black box of the mind." Nick is currently examining predictive processing accounts of whole-brain function to see if they provide solutions to the black box problem.

Nick has related research interests in Artificial Intelligence—e.g., in how human beings interface with AIs, in what it means to develop a more human-like AI, and in issues concerning the ethical standing of intelligent machines as they become increasingly integrated in our day-to-day lives.

Hobbies/Interests/Sports

When not involved in research and teaching, Nick likes to go for walks with his wife and daughters, cook lots of great food, watch too much soccer, play soccer, and read anything he can get his hands on.

Family/Children/Travel

Nick is the proud parent of two daughters, Imogen and Poppy, and the husband to Amy Butchart (who is also a philosopher). Professor Ray enjoys travel, especially to Europe—and especially when it isn't for work! His preference is for cities with a rich culinary profile, and, if possible, cities that are not too large. These places must have good coffee and interesting locals.

Materials and Resources

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/materials-and-resources.aspx

Readings

Course Reserves

All required course readings are available through **Course Reserves**. Course Reserves can be accessed using the **Library Resources** widget on the **Course Home** page.

Resources

[Library services for Co-op students on work term and Extended Learning students](#)

Grade Breakdown

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/grade-breakdown.aspx

The following table represents the grade breakdown of this course.

Activities and Assignments	Weight (%)
Introduce Yourself	Ungraded
Essay Assignment 1 3 page essay (double-spaced)	15%
Midterm Take-home Examination 5 pages (double-spaced)	20%
Essay Assignment 2 5-6 page essay (double-spaced)	30%
Final Examination Proctored, 2.5 hours	35%

Course Policies

contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/course-and-department-policies.aspx

This course requires regular access to the Waterloo LEARN course site. Your instructor will use this site for communicating important information concerning course matters, returning graded assignments, etc. A reliable internet connection and regular checking of the course site (at least twice a week) is therefore mandatory.

Late Policy for Essay Assignments

Late submission of essay assignments will be penalized at the rate of 10% of the value for the assignment per day late. This policy will apply without exception unless a documented excuse of sufficient weight (e.g., a medical emergency) is provided to the instructor.

Late Policy for Midterm Take-home Examination

Late submissions will ordinarily not be accepted.

University Policies

 contensis.uwaterloo.ca/sites/courses/1195/PHIL-256-PSYCH-256/toc/syllabus/university-policies.aspx

Submission Times

Please be aware that the University of Waterloo is located in the **Eastern Time Zone** (GMT or UTC-5 during standard time and UTC-4 during daylight saving time) and, as such, the time that your activities and/or assignments are due is based on this zone. If you are outside the Eastern Time Zone and require assistance with converting your time, please try the [Ontario, Canada Time Converter](#).

Accommodation Due to Illness

If your instructor has provided specific procedures for you to follow if you miss assignment due dates, term tests, or a final examination, adhere to those instructions. Otherwise:

Missed Assignments/Tests/Quizzes

Contact the instructor as soon as you realize there will be a problem, and preferably within 48 hours, but no more than 72 hours, have a medical practitioner complete a [Verification of Illness Form](#).

Email a scanned copy of the Verification of Illness Form to your instructor. In your email to the instructor, provide your name, student ID number, and exactly what course activity you missed.

Further information regarding Management of Requests for Accommodation Due to Illness can be found on the [Accommodation due to illness](#) page.

Missed Final Examinations

If this course has a final exam and if you are unable to write a final examination due to illness, seek medical treatment and have a medical practitioner complete a [Verification of Illness Form](#). Email a scanned copy to the Centre for Extended Learning (CEL) at extendedlearning@uwaterloo.ca within 48 hours of your missed exam. Make sure you include your name, student ID number, and the exam(s) missed. You will be REQUIRED to hand in the original completed form before you write the make-up examination.

After your completed Verification of Illness Form has been received and processed, you will be emailed your alternate exam date and time. This can take up to 2 business days. If you are within **150 km** of Waterloo you should be prepared to write in Waterloo on the additional CEL [exam dates](#). If you live outside the 150 km radius, CEL will work with you to make suitable arrangements.

Further information about [Examination Accommodation Due to Illness](#) regulations is available in the Undergraduate Calendar.

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. **If you have not already completed the online tutorial regarding academic integrity you should do so as soon as possible.** Undergraduate students should see the [Academic Integrity Tutorial](#) and graduate students should see the [Graduate Students and Academic Integrity](#) website.

Proper citations are part of academic integrity. Citations in CEL course materials usually follow CEL style, which is based on APA style. Your course may follow a different style. If you are uncertain which style to use for an assignment, please confirm with your instructor or TA.

For further information on academic integrity, please visit the [Office of Academic Integrity](#).

Turnitin

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

[Turnitin® at Waterloo](#)

Discipline

A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration, should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71 - Student Discipline. For typical penalties, check Guidelines for the Assessment of Penalties.

Appeals

A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances, (other than a petition) or Policy 71 - Student Discipline, may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 - Student Appeals.

Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4. When in doubt please be certain to contact the department’s administrative assistant who will provide further assistance.

Final Grades

In accordance with Policy 46 - Information Management, Appendix A - Access to and Release of Student Information, the Centre for Extended Learning does not release final examination grades or final course grades to students. Students must go to Quest to see all final grades. Any grades posted in Waterloo LEARN are unofficial.

AccessAbility Services

AccessAbility Services, located in Needles Hall, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodation to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term and for each course.

Accessibility Statement

The Centre for Extended Learning strives to meet the needs of all our online learners. Our ongoing efforts to become aligned with the Accessibility for Ontarians with Disabilities Act

(AODA) are guided by University of Waterloo accessibility [Legislation](#) and policy and the World Wide Web Consortium's (W3C) [Web Content Accessibility Guidelines \(WCAG\) 2.0](#). The majority of our online courses are currently delivered via the Desire2Learn Learning Environment. Learn more about [Desire2Learn's Accessibility Standards Compliance](#).

Use of Computing and Network Resources

Please see the [Guidelines on Use of Waterloo Computing and Network Resources](#).

Copyright Information

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If there are any questions about this notice, please contact the University of Waterloo, Centre for Extended Learning, Waterloo, Ontario, Canada, N2L 3G1 or extendedlearning@uwaterloo.ca.