



**Carleton**  
UNIVERSITY

INSTITUTE OF  
**Cognitive Science**

**REQUIREMENTS FOR HONOURS THESIS – CGSC 4908**

**IF YOU REQUIRE FURTHER INFORMATION, PLEASE CONTACT THE MAIN OFFICE BY PHONE BY  
EMAIL: [ICS@CARLETON.CA](mailto:ICS@CARLETON.CA)**

**FINDING A THESIS SUPERVISOR**

Research in Cognitive Science follows a mentorship model. Thus, typically, the topic of a thesis will overlap to a substantial degree with the research expertise of the thesis supervisor. Students should approach potential supervisors in the winter of their third year. Consider approaching potential supervisors with whom you have taken a class, for example. Students should make the effort to find out about the professor's area of research and be prepared to discuss their interests in that area. Most supervisors will not require students to have formulated a detailed outline of a potential project. However, the extent to which the student will be expected to lead the project will depend upon the individual professor and the discipline.

Students should investigate the research areas of potential supervisors, talk to other students, and then contact and meet with potential supervisors. Students should start this process in the third year (or the 2<sup>nd</sup> last year) of their degree, with the assumption that the thesis will be completed during the 4<sup>th</sup> year (or last year). All faculty members who are fully or partially appointed in the Institute of Cognitive Science are listed on the ICS website: <http://www.carleton.ca/ics>. Students should consider getting involved in research activities with their supervisor in the third year, in preparation for the honours thesis.<sup>1</sup>

Students can approach any faculty member at Carleton as a potential supervisor. Adjunct faculty members<sup>2</sup> can also supervise honours projects, however, a co-supervisor from the Institute of

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<sup>1</sup> Faculty members who hold grants from NSERC are eligible to sponsor students for summer research fellowships. These fellowships provide for full time (16 weeks) of summer employment. Participating in one of these fellowships between third and fourth year is an excellent way for students to get a head start on their thesis, to experience real research, to get to know their supervisor well (helpful for reference letters for scholarships or for graduate school). Deadlines are in February.

<sup>2</sup> An adjunct faculty member is someone who has an appointment at Carleton but who works mainly at some other institution or agency, such as Ottawa U, the National Research Council, Transport Canada, the Ottawa Hospital (and so on). Adjunct faculty who are associated with ICS are shown on the website. The reason a co-supervisor is required is that the adjunct faculty are not contractually obligated to supervise students and so sometimes they leave, change jobs, or some other unforeseen situation occurs which renders them unable to continue supervision. The co-supervisor would then take over primary supervision of the student.

Cognitive Science is required as well. Ideally, the co-supervisor from Cognitive Science will also play a role in the student's research activities, although there are exceptions. The Undergraduate Supervisor or the CGSC 4908 instructor are always willing to discuss these issues with students, ideally before they are at the point of registering in the thesis course.

### IDEAL SCHEDULE

Students who intend to graduate in June of their 4<sup>th</sup> year should ideally conform to the following schedule.

January-March of 3 <sup>rd</sup> Year	Approach potential supervisors; Consult with Cognitive Science Undergraduate Advisor or the Honours Thesis instructor, if necessary. Once a thesis supervisor has been secured, students should submit a signed copy of the Honours Thesis Contract to <a href="mailto:ics@carleton.ca">ics@carleton.ca</a> . The contract will ensure that when they request an override to register in CGSC 4908, the override will be approved. Students will not be able to register until they have submitted a signed contract.
Registration in CGSC 4908 – June	If this is your first registration – register in Section A for both Fall and Winter (Full Year Registration). Students who do not complete their thesis after the first registration can register twice more, in Section B (summer) and Section C (Fall and winter). Note that you can only register in each section once.
March to Early September of 4 <sup>th</sup> Year	Discuss, with supervisor, reading and other preparatory work to be done over the summer (if any).
September – April	Plan, conduct, and analyze research. Start writing of preliminary drafts.
Last day of Exams in April	Deadline to submit final thesis to Thesis Advisor and to the course instructor (through cuLearn).

### CO-OP STUDENTS

Students who are registered in the co-op program may also register in CGSC 4908A in the Fall/Winter term of their fourth year, with the intention of getting started on their thesis. If possible, they may be able to continue working on the thesis in the Winter and Spring/Summer terms. It is permissible to be registered in one-half credit during a work term. When they return to school in September, they should register in 4908 C. Whether or not they register in 4908 B in the Spring/Summer term will depend on the student's individual circumstances. Please consult with the co-op advisor or the Undergraduate Supervisor in Cognitive Science for further information.

### REGISTRATION AND DE-REGISTRATION

Unlike other undergraduate courses, students are permitted two (but ONLY two) re-registrations in the honours thesis. If the Honours thesis is not completed within three sessions, as described

below, a grade of F will be assigned. Students should note that they **MUST BE REGISTERED** to be eligible for supervision and library privileges, to submit an honours thesis for grading, and to graduate. Registration and re-registration must take place on time, no later than the last day for late registration in the session.

During June registration, students should register in Section A for the fall/winter term. If they are unable to complete their thesis by the end of the Winter term, they can either register in Section B for the Spring/Summer term (if they intend to complete their thesis in the summer), or register in Section C in the next fall/winter term. Students must consult with their supervisor when deciding whether to continue in the summer or in the fall. For example, a student who first registers in the thesis course in September but does not finish by the end of April will receive a grade of IP (in progress). They must either re-register in the summer term in Section B (if they will be finished before the end of August) or wait and register again in September for Section C (fall/winter).

Students must have a completed HONOURS THESIS CONTRACT on file in order to register. The contract should be scanned and emailed to [ICS@carleton.ca](mailto:ICS@carleton.ca) or a copy can be dropped off in person to DT 2202A. It is important for students to understand that their contract with a supervisor carries an obligation to remain in communication concerning a schedule of work, the meeting of deadlines, and so forth. Otherwise a supervisor may rightfully conclude that the student is not upholding his or her part of the agreement.

## **GRADUATION**

Students who wish to be considered for graduation must apply through Carleton Central by the following deadlines:

September 1	for Fall Graduation (November Convocation)
December 1	for Winter Graduation (February Graduation – Spring Convocation)
March 1	for Spring Graduation (Spring Convocation)

## **DEADLINES**

The deadline for submission of the Honours thesis to both your thesis supervisor and to the course instructor (via cuLearn) is the last day of the examination period for the session of registration. However, your thesis supervisor should already have read multiple drafts before the final one is submitted.

If the Honours thesis is not submitted by the appropriate deadline, a grade of IP will be assigned for those students eligible to re-register. A grade of F will be assigned for those students (in section C) not eligible to re-register.

**Summer Registration.** Students intending to register in a graduate program in September who are not finished their thesis in the Winter term must register for CGSC 4908 B and submit their thesis by the last day of exams in August. In order to register in the Faculty of Graduate Studies and Research, students require a statement from the Administrator confirming that the honours

degree requirements have been completed. This statement will not be available until the completed thesis and signed grade report have been submitted.

## **WITHDRAWALS**

Students may withdraw from the Honours thesis up to the last date for withdrawal from full courses in the session. Students who withdraw during their initial registration (CGSC 4908 A) will retain their Honours status and may begin the Honours thesis again by registering in CGSC 4908 A in a subsequent session.

## **FEES**

The full-credit fee is charged for the first registration. The half-credit fee is charged for each re-registration.

## **EVALUATION**

The final grade for the CGSC 4908 will be awarded after a process of joint evaluation of the manuscript by the thesis supervisor and the course instructor who reads all of the theses.

The thesis is required to have a substantial literature review component and must demonstrate that you have undertaken some original research. The nature of the research will vary with the topic and the area of the thesis supervisor.

## **THESIS CONTENT**

The following guidelines were developed to help students understand what the thesis consists of and how to successfully make progress towards completion of their degree.

1. An honours thesis in Cognitive Science is a work of original scholarship. It will include a critical overview of relevant literature on the topic. It will also include some original research -- an experiment, survey, critical analysis, analysis of archival data, or modeling activity. The exact form of this research activity will depend upon the area and the topic.
2. The final thesis document will include a written literature review (Introduction, Literature Review), a report on the research activity (Method, Results), and a conclusion/synthesis component (Discussion). Students are encouraged to display their interdisciplinary knowledge by drawing on more than one disciplinary perspective in the review or synthesis components of the thesis. However, expectations for the research activity will be more modest than for a Master's or Ph.D. level project, consisting of research that uses a single methodology (conceptual, experimental, linguistic, or computational).
3. Length, per se, will be variable. However, most honours theses are between 25 and 50 pages in length (excluding Appendices, References, and ancillary pages). Example theses are available from the Undergraduate Supervisor. Proceedings papers from the archives of the Cognitive Science Society are another useful source of examples of papers with a similar scope as an honours thesis: [http://www.cognitivesciencesociety.org/conference\\_past.html](http://www.cognitivesciencesociety.org/conference_past.html).

These archives are also useful as they contain examples of research projects that span all of the many perspectives that contribute to cognitive science.

4. Students consult with their supervisor to make sure that there is a plan in place for making progress. The year goes by quickly. Empirical projects need to be initiated as early as possible to provide for time to collect and analyze data. All projects need to be broken down into manageable components, with interim deadlines. Students should expect feedback on written components from their supervisor. Agreement on submission dates for various components is very useful in ensuring good progress. Students should also expect to participate in lab meetings or to work with graduate students as part of the research mentorship process. Note that although re-registrations after the first registration in the thesis are possible, these should be used only when there has been an unavoidable delay in thesis completion.

## **FORMAT OF HONOURS THESIS**

The honours thesis document is a final document that may be read in future by other students. In general, students should follow the thesis format required for Master's theses, although of course an honours thesis will generally be shorter and less detailed. Usually, the format of the thesis will conform to that of the supervisor's research area (including referencing conventions). For example, the format of the American Psychological Association is most common among researchers who do empirical (data collection) work. Students should verify requirements with their supervisor, who may have more specific suggestions. More generally, the formatting can correspond to the basic requirements of the graduate thesis documents, as described at <http://gradstudents.carleton.ca/thesis-requirements/formatting-guidelines/>. Note that submission will be electronic, not on paper, so some of the suggestions do not apply. Margins can be 2.5 cm on all 4 sides. Your thesis supervisor may have additional requirements for the thesis format so make sure you consult with him or her as you are developing the document.

The text should be double-spaced. Figures and tables should be placed in the text close to where they are mentioned. Footnotes must be numbered and may be placed at either the bottom of the page (preferred) or the end of the document. A complete list of references must be included. Format for references and for other aspects of the thesis can either correspond to the conventions of the American Psychological Association or to the accepted format of the discipline of the Honours Thesis Supervisor. The student should consult with the supervisor early on to clarify which format will be acceptable.

## **NUMBER OF COPIES**

Only an electronic copy is required by the Institute. It will be uploaded through the cuLearn site for the course (CGSC 4908). However, the thesis supervisor may require a paper copy as well as an electronic copy. Note that you should send an electronic copy directly to the thesis supervisor as he/she does not have access to cuLearn. When the final grade has been decided upon and submitted, the Institute will retain the electronic copy. The Institute may print a paper copy of the thesis to retain in the records.

## LENGTH

Length is no substitute for quality. As a rough guide, the paper should be between 30 and 60 double-spaced pages (approximately 8,000 to 15,000 words). The nature of the topic will help to determine the size of the paper.

## STYLE

Style counts! A poorly composed thesis, no matter how worthwhile its content, is not acceptable. Therefore, include time for careful editing in your work plan. Footnote and bibliography (reference) form must be correct and the writing style clear and skilful. Consult the thesis supervisor for the appropriate format (as above). It is recommended that you consult the classic introduction to the fundamentals of writing by W. Strunk Jr. and E. B. White, *The Elements of Style* (Macmillan: New York). *A Manual for Writers of Term Papers, Theses, and Dissertations* by K. Turabian, may also be useful. *The Psychologist's Companion: A Guide to Scientific Writing for Students and Researchers* by R. J. Sternberg is also useful, especially for theses that have an empirical (data) component. These books are all available through major bookstores.

**TITLE PAGE**

The title page should include:

Title

By (Your name)

A thesis submitted in fulfilment of the requirement for CGSC 4908 as credit towards the degree

Bachelor of Cognitive Science with Honours

Specialization in (insert specialization)

Thesis Supervisor (Supervisor's name)

Institute of Cognitive Science  
Carleton University  
Ottawa, Canada

Month, (YEAR)

**Selected Honours Projects from 2004 – 2015 (by category)**

Year	Student	Supervisor	Title
<i><b>Modelling Projects</b></i>			
04-05	Ward, Elena	Inkpen	<b>Verb-Noun Clustering Algorithm</b>
06-07	Leblanc, Neal	Oppacher	<b>Toward Intelligent Behaviour from an Auction-Based Economy of Dimwit Agents</b>
07-08	Gagne, Jonathan	Davies	<b>Analogical Inference of Visual Properties</b>
09-10	Smith, Connor	Davies	<b>The Retrieval of Images Using Spatial Relationship Detectors</b>
09-10	Johnson, Geoffrey	Davies	<b>The Expansion of Galatea to include L12, L11, and L13</b>
09-10	Storimer, Jesse	White	<b>Collaborative Filtering with Ensembles</b>
12-13	Ouellet, Sebastien	Davies	<b>Automated and cognitively plausible spatial descriptions of three-dimensional scenes</b>
14-15	Martin, Matthew	Davies	<b>Battling Aliens for Science: New Methods for Creating and Evaluating Models of Expert Cognition in Chaotic Simulated Environments</b>
<i><b>Psychology Projects</b></i>			
05-06	Hoos, Kathy	Herdman	<b>Change Blindness: The Impossible Task of Comparison</b>
08-09	Staples, Andrew	Herdman	<b>The Effects of Workload on Simulated Circuit Flying for General Aviation Pilots</b>
08-09	Pandeliev, Velian	Herdman	<b>The Effects of Text-based and Auditory Information Processing in Simple and Complex Driving Scenarios</b>
09-10	Cockbain, Jessica	Davies	<b>What if Da Vinci had a computer? Investigating the influence of technology on creativity</b>
12-13	Bouskill, Corrie	LeFevre	<b>Eye movement differences between retrieval and non-retrieval strategies in simple subtraction</b>
12-13	Hobin, Tara	Parush	<b>Shared mental models in the emergency department</b>
12-13	Sappong, Michelle	Kamawar	<b>Theory of mind: Four- and five-year-olds' identification and moral judgement of prosocial lies</b>
12-13	Inostroza, Laura	Gick	<b>Exploring singing as a means to increase well-being in people with asthma</b>
12-13	Jones, Stephen	Zelenski	<b>A trait-specific self-reference effect in memory</b>
13-14	Lewitzky, Josef	Kristiansen	<b>Effects of meditation on intergroup discrimination</b>
14-15	Jennings, Jay	Davies	<b>Curvilinear Impetus Belief and Embodied Cognition: The Impact of Psychomotor</b>



			<b>Reactions on Folk Physics Beliefs</b>
14-15	Cichonski, Michael	Tansley	<b>An Exploratory Analysis of Finger Movement: The relation between attentional workload and the difficulty of classical guitar pieces</b>
14-15	Yisa, Felix	Davies	<b>Can Shape Predict An Emotional Response? Detecting the Valence of Blurry Words</b>
<i>Neuroscience Topics</i>			
13-14	Buchanan, D. Matthew	D'Anguilli	<b>Visual perception-imagery interaction: Investigating conditions for priming and Perky effects with simultaneous electroencephalography</b>
<i>Conceptual Issues</i>			
06-07	Shulz, David	MacLeod	<b>Consciousness and Science</b>
08-09	Musca, Jeanne-Marie	Maibom	<b>Two realms; Two Selves: Neisser and the Rejection of the Unified Self</b>
08-09	Proulx, Martin	Corazza	<b>Compatibility of Evolutionary Psychology and Cognitive Science</b>
08-09	Miller, Xander	Davies	<b>Rethinking Machine Ethics: Functionally Defined Artificial Intelligent Agent Ethics</b>
<i>Language and Linguistics</i>			
07-08	Parush, Asaf	Asudeh/ Murasugi	<b>The Faculty of Language and the Limits or Recursion</b>
09-10	Fortney, Mark	Asudeh	<b>Proofs in Glue Semantics can be the Objects of Attitudes</b>
08-09	Burch, Heather	Gess	<b>Differential Substitution of Theta and Eth for Two Non-Native Speakers of English: Applying Loanword Data to perceptual research</b>
13-14	Darling, Matthew	Toivonen/ Murasugi	<b>Linguistic methodology: A case study via copy raising</b>
13-14	Spero, Eric	Toivonen	<b>A construction grammar approach to the argument-adjunct distinction</b>
13-14	Milacic, Dejan	Toivonen/ Singh	<b>Toward a cross-linguistic typology of distance distributivity</b>
13-14	Anvari, Amir	Singh	<b>Some remarks on bridging</b>