Neuroscience and Applied Cognitive Science Psychology Graduate Handbook - MSc

2021-2022 Handbook

Introductory remarks

The MSc in Psychology in the area of Neuroscience and Applied Cognitive Science provides graduate training for students interested in the integrative functioning of the brain. This encompasses basic cognitive processes, behavioural neuroscience, cognitive ergonomics, cognitive neuroscience, developmental and life-span cognition, evolution and behaviour, and foundations of cognitive science.

Area-specific typical MSc progression sequence

NACS: Typical Master's progression sequence

Please note that every thesis degree will be different; often times depending on the thesis research project. For example, some projects will have very extensive and time consuming data collection stages, whereas others may take extra time at the analysis stage. These guidelines are suggestions. Be sure to work out key goals and a timeline in consultation with your advisor and to update your goals and timeline in collaboration with your advisor every semester.

MSc year 1
Semester 1 Fall
Courses:
- PSYC*6940 [0.50] Discrete-variable Research Design and Statistics
- PSYC*6740 [0.50] Research Seminar in NACS A
- PSYC*6880 [0.25] Ethical Issues in Psychology OR UNIV*6600 [0.00] Animal Care Short Course
- If completing the Neuroscience Collaborative Specialization: NEUR*6100 [0.00] Seminar in Neuroscience

Practicum:
-Discuss with NACS graduate coordinator during the first class of the NACS seminar.

MSc thesis:
- Work with your supervisor to develop research questions to be addressed in your thesis proposal.
- Ethics for MSc research and data collection (if applicable; note the REB review process typically takes 2 to 4 weeks)

Independent research:
- Consider getting involved in a project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
- Apply for OGS
- Apply for NSERC or other Tri council scholarship
- Other options may also available depending on your research topic search the web and discuss with your supervisor

Other:
- None

Semester 2 Winter
Courses:
1. PSYC*6740 [0.50] Research Seminar in NACS A (must re-register for Winter)
2. One elective from the following list (alternatively, complete this elective in any term):
- PSYC*6750 [0.50] Applications of Cognitive Science
- PSYC*6780 [0.50] Foundations of Cognitive Science
- PSYC*6790 [0.50] Memory and Cognition
- PSYC*6800 [0.50] Neurobiology of Learning
- PSYC*6810 [0.50] Neuropsychology
- For students NOT completing the Collaborative Neuroscience Specialization, PSYC*6000 [0.50] Principles of Neuroscience
- A graduate elective from outside this list with the permission of your advisor
3. If completing the Collaborative Neuroscience Specialization: NEUR*6100 [0.00] Seminar in Neuroscience

Practicum:
1. PSYC*6471 [0.50] Practicum I
- The practicum can be completed in any term of the program
- Students typically register for PSYC*6741 (2-3 days per week working in practicum lab), however, the practicum requirement of the MSc can alternatively be met by taking PSCY*6742 (5 days per week), or PSYC*6743 (1 day per week).

MSc thesis:
- Thesis proposal draft submitted to advisory committee as the end of term assignment for PSYC*6740
- Form MSc thesis committee, no later than the 20th class day of the 2nd semester.
- Initial MSc committee meeting
- Data collection and analysis (if applicable)

Independent research:
- If applicable continue involvement in project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
- Nothing

Other:
- None

Semester 3 Summer

Courses:
- None, unless elective not yet completed

Practicum:
- None, unless practicum not yet completed

MSc thesis:
1. Establish an appropriate timeline for completing MSc proposal with advisor
2. Building off the draft proposal written as part of PSYC*6740, complete MSc proposal and submit to advisor for review (typically in first week of two of semester). Multiple rounds of revision may occur.
3. Once approved by advisor, submit proposal to remaining advisory committee at least 2 weeks before the “proposal meeting”

4. MSc proposal meeting; typically by July 1st
- The student must present their thesis proposal to the Advisory Committee and have it approved by that committee. At least one meeting between the Advisory Committee and the student must be held to discuss the thesis proposal and to work out changes necessary for an acceptable proposal. Approval of the thesis proposal entails consideration of the feasibility of the study in terms of time limitations, expenses, and availability of subjects, as well as its empirical, theoretical, and conceptual value
5. MSc proposal must be approved by committee before end of summer semester
6. Data collection and analysis (if applicable)

Independent research:
- If applicable continue involvement in project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
- Revise OGS, SSHRC and any other grant application

Other:
- Early stages of PhD application, if applicable

*Important departmental milestones to achieve during the degree (full-time registration only): MA/MSc must have their approved thesis proposal: 3rd semester. If the milestone is not met it will result in a “Some concerns” on the student’s progress report.

MSc Year 2
Semester 4 Fall
Courses:
- PSYC*6760 [0.50] Research Seminar in NACS B
- If completing the Collaborative Neuroscience Specialization: NEUR*6100 [0.00] Seminar in Neuroscience
- Elective if not yet completed

Practicum:
- Practicum if not yet completed

MSc thesis:
- Data collection and analysis

Independent research:
- If applicable continue involvement in project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
- Apply for OGS for the PhD (if applicable)
- Apply for NSERC or other Tri council scholarship for the PhD (if applicable)
- Other options for the PhD (if applicable) may also available depending on your research topic search the web and discuss with your supervisor

Other:
- Apply to PhD, if applicable

Semester 5 Winter
Courses:
- PSYC*6760 [0.50] Research Seminar in NACS B (must re-register for winter)
- If completing the Collaborative Neuroscience Specialization: NEUR*6100 [0.00] Seminar in Neuroscience

- Elective if not yet completed

Practicum:
- Practicum if not yet completed

MSc thesis:
1. Data collection and analysis (It is suggested to update the advisory committee regularly, an particularly once after data collection and analysis is complete)
2. Begin writing MSc thesis; deadlines to be worked out with advisor.
- During the preparation of the written thesis, the student should be receiving feedback from the Advisory Committee (what form that takes e.g., drafts, meetings, etc., will be up to each committee to determine). Have a carefully planned out timeline for this process, as it will likely take longer than you think, and you will run into timeline problems if you leave things to the end of the summer.

Independent research:
- If applicable continue involvement in project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
• None

Semester 6 Summer
Courses:
- Elective if not yet completed

Practicum:
- Practicum if not yet completed

MSc thesis:
1. Draft of thesis to advisor by early summer at the latest, with revisions to follow
2. Approval of thesis by advisor; recommended by June 15th
3. Approved thesis to advisory committee members for review; make revision based on their comments
4. Create examination committee and provide final copy of thesis to graduate secretary for distribution
5. Schedule and complete MSc thesis examination
- Please be aware that arranging a defense takes the coordination of many people, which can result in delays even if your manuscript if ready. Please do not book vacation/other plans until this date is set.
6. Revise thesis based on defense
- Students typically require a week following the examination to make changes to their thesis and ensure that it follows the prescribed format. Occasionally this stage can take longer than 1 week. Please do not make plans (e.g., vacation) immediately following your defense.
7. Submit final version of thesis
- See university calendar for the exact date to submit a thesis for fall graduation and the dates for tuition refunds if you do not finalize until after the August deadline

Independent research:
- If applicable continue involvement in project that is independent from your MSc research either with your supervisor or another faculty member

Scholarships:
- Prepare application for PhD scholarships for PhD year 2 if applicable

*Important departmental milestones to achieve during the degree (full-time registration only): MA/MSc must have their thesis defended: 6th semester. If the milestone is not met it will result in a “Some concerns” on the student’s progress report.

IMPORTANT TO NOTE:
As a student cannot be in 2 programs at the same time, the expectation is that a continuing master's with a doctoral offer for the semester following their last MSc semester will defend by the middle of their last MSc semester or earlier.
If you are unable to successfully finalize your master's with the Office of Graduate Studies no later than a week before the start of your first PhD semester, this doctoral offer of admission may become be null and void.

Advisory Committee Membership

See Chapter II, heading Student Program, subheading Establishment of the Advisory Committee

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Advising.

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations.

Look for "Area-specific advisory committee membership" below CONTENTS for area-specific guidance if it exists.

Area-specific advisory committee membership MSC NACS

The Advisory Committee must consist of at least two Graduate Faculty Members, one of which is the student's advisor. This committee must be established, and an Advisory Committee Appointment form submitted to the Graduate Secretary, he 20th class day of the 2nd semester. The form is available on the University of Guelph Graduate & Postdoctoral Studies website.

After the committee is formed, it is recommended that the student and their committee meet to discuss the expectations for that particular committee (e.g., does committee plan to have regular meetings, when does the student expect to have a proposal meeting, etc.).

Conflict with Advisor or Advisory Committee

See chapter III General information, heading Policy on Responsibilities of Advisors, Advisory Committees and Graduate Students and Graduate Student-Advisor Mediation Procedures, subheading Dispute Resolution Mechanisms (with flowchart)

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific conflict with advisory committee" below CONTENTS for area-specific guidance if it exists.

Transfer of advisors

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific transfer of advisors" below CONTENTS for area-specific guidance if it exists.

Area-specific transfer of advisors NACS MSC

In those rare cases where it is appropriate for a student to change advisors, the following steps are suggested as a path to obtaining a new advisor.

1. The student should notify the NACS graduate studies coordinator who will assist the student in identifying a potential new advisor. In those cases where the advisor is also the NACS graduate studies coordinator, the student should contact the departmental graduate studies coordinator.

2. A new thesis advisory committee will be constructed under the direction of the newly appointed advisor. Normally, at least one of the members of the existing advisory committee will continue as a member of the new advisory committee. The decision to continue as an advisory committee member is at the discretion of the faculty member.

Thesis Proposal

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Submit signed Department of Psychology Form: Approval of Master's Thesis Proposal

Look for "Area-specific thesis proposal" below CONTENTS for area-specific guidance if it exists.

Area-specific thesis proposal evaluation criteria MSC NACS

Every NACS graduate student must have their Thesis Proposal approved by their advisory committee

before the end of their third semester (and a thesis proposal approval form submitted to the Graduate Secretary).

All NACS MSc students in their first year of study must take PSYC*6740 (Research Seminar in Neuroscience and Applied Cognitive Science A), and one requirement of this course is for the student to prepare a written research report detailing their research progress and plans. This report is due at the end of the winter term, and typically serves as the first draft of the student's thesis proposal.

In addition to the PSYC*6740 course work, approval of the proposal involves submitting a written proposal to the Advisory Committee for review (allow at least two weeks for the review of each draft), and once deemed suitable, presenting the proposal orally at a committee meeting.

The written component of the thesis proposal typically contains the following content:

1) Introduction

2) Method (including planned analyses)

3) Current Results

4) Proposed Results

5) Implications

All proposals will be reviewed against the following criteria.

Introduction

-Comprehensively summarizes and references the relevant literature as it pertains to the thesis topic.

-Critically points out the most relevant and important theories and empirical evidence to establish a clear purpose and contribution for the thesis.

-Demonstrates an accurate and deep understanding of the research literature (the authors/ theorists would be in full agreement with their ideas or findings being summarized in this way).

-Hypotheses are well substantiated and clearly follow from the literature review.

Method (including planned analyses)

-Research design is clearly articulated and follows logically from the literature review.

-The method allows for the optimal testing of the research hypotheses.

-All relevant measures are described in detail and appropriate based on the subject matter of the thesis.

-Proposed analyses are described in detail.

Current Results

-Any data that have already been collected and analyzed, and that the student proposes to include in the final thesis, are reported.

-Results are conveyed through main text and tables/figures, and appropriate statistical analyses are reported.

Proposed Results

-Predicted results are also presented (in tables or figures) to demonstrate a mastery of the underlying theory and proposed analyses.

-Strengths and weaknesses of the research design and measurement are clearly articulated.

Implications

-The implications, and importance, of the current or proposed findings for theory and practice are described in detail for the topic domain.

Organization, Clarity, and Format

- Proposal is structured with a clear organization.

- All aspects of the proposal are explored in a highly systematic and disciplined manner.

- Appropriate elements of style are consistently used throughout (e.g., transition sentences between paragraphs, appropriate headings).

- Sentences are clear and concise.

- There are no grammatical errors.

- There is consistent and accurate use of APA style.

Thesis Preparation

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Thesis

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific thesis preparation" below CONTENTS for area-specific guidance if it exists.

Advisory Committee Approval of the Thesis and

Submission to Examination Committee

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Thesis.

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific advisory committee approval" below CONTENTS for area-specific guidance if it exists.

Area-specific MSC advisory committee approval of the thesis and submission to examination committee

Once you are close to having a draft of your thesis prepared, you should follow the procedures below. You many also find the Master's Thesis Submission and Defense Schedule Guidelines prepared by Graduate & Postdoctoral Studies to be a useful complement to the instructions below.

1. When the MSc candidate’s Advisor has deemed that the candidate’s thesis draft is satisfactory, the Advisor will provide an email to the student indicating that the thesis is satisfactory and ready for submission to the Advisory Committee members for evaluation. At this point:

a. The advisor will notify the Graduate Program Assistant that the thesis is being evaluated by the advisory committee, allowing the Graduate Program Assistant to prepare necessary forms and provide additional instructions to all.

b. The advisor will forward a nomination for Chair of the Examination Committee to the chair of the department.

c. The advisor will inform the Graduate Program Assistant of a date and time convenient to all committee members, including the confirmed chair, so that the Graduate Program Assistant can book appropriate space and equipment.

d. The student shall provide an electronic copy of the thesis to each member of the Advisory Committee and request email receipt to ensure that the Advisory committee members have received the thesis in a timely fashion. A minimum of two weeks will be allowed for Advisory Committee members to evaluate the thesis.

e. The student will review and implement the Electronic Formatting Requirements for theses provided on the Graduate & Postdoctoral Studies website.

2. When an Advisory Committee member has read the draft of the thesis, he/she is required to complete an Evaluation of Draft of Thesis form (a departmental form prepared by and obtained from the Graduate Program Assistant) to provide feedback on the thesis and indicate whether or not the thesis is ready for defense. This form should also indicate whether edits are requested pre-defense or post. The Evaluation of Draft of Thesis form will be submitted to the student with a copy to the candidate’s Advisor. Normally, this feedback includes a number of changes designed to improve the thesis prior to the defense. The

student then considers the recommendations in the evaluation forms, and, in consultation with the Advisor, makes changes specified by the committee members. Note that these changes may be done quickly or take a substantial amount of time (e.g., days or weeks). Consequently, students should remember to budget sufficient time for these revisions.

3. If necessary, the student will submit an electronic copy of the corrected thesis to each Advisory Committee member. The Advisory Committee members will typically review the revised draft within two weeks.

4. Following this, the Advisory Committee members will indicate whether the thesis is ready for defense by signing the Summary of Advice to Student form (a Graduate & Postdoctoral Studies form) and submitting it to the Graduate Program Assistant (who makes a copy for the student). All members should sign the same Summary of Advice form.

5. Once required edits have been addressed as per the committee members ín Evaluation of Draft of Thesis forms, the student should immediately send an electronic copy (PDF) of the thesis to the Graduate Program Assistant for distribution to the Final Oral Examination Committee members. If any member requires a hard copy, the student should also provide hard copies to the Graduate Program Assistant. All members of the examination committee must receive the final version of the thesis at least two weeks before the date of the Final Oral Examination.

6. Regardless of the recommendation of the MSc Advisory Committee, a student may submit a request for an examination. Requesting an examination without the approval of all of the members of the MSc Advisory committee is not recommended.

Examination Committee Membership

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Thesis

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific examination committee membership" below CONTENTS for area-specific guidance if it exists.

Area-specific examination committee membership MSC NACS

The Final Oral Examination (FOE) Committee will consist of at least four members: the defense chair, two members of the advisory committee, and one additional graduate faculty who is not a member of the student’s advisory committee. Together, the two advisory committee members and the additional member provide the three voting members required for FOE committees (the chair is a non-voting member).

Examination Committee Creation

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific examination committee creation" below CONTENTS for area-specific guidance if it exists.

Thesis Public Lecture and Examination

See Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Thesis

See also Chapter IV, heading Master of Arts, Master of Arts (Leadership), Master of Applied Science, Master of Bioinformatics, Master of Biotechnology, Master of Engineering, Master of Environmental Sciences, Master of Food, Agricultural and Resource Economics, Master of Science, Master of Planning, Master of Science (Planning), subheading Department Regulations

Look for "Area-specific thesis public lecture" below CONTENTS for area-specific guidance if it exists.

Area-specific thesis public lecture and examination MSC NACS

The following linked document was prepared by the Assistant Vice-President (Graduate Studies and Program Quality Assurance) in June 2016 and provides Guidelines for Oral Examinations of a Thesis guidelines detailing the procedures that should be followed during the MSc Thesis Public Lecture and Examination. If this link does not work, please contact the faculty member serving as the NACS Area Graduate Representative.