



# PhD in Applied Science Program Guide

Updated: July 14, 2023

## Required Degree Components

To graduate from the PhD in Applied Science program, students must complete the following requirements:

APSC 7600: Graduate Seminar	<ul style="list-style-type: none"><li>• Generally taken during the first year.</li><li>• This is a full-year course. Students must complete both the Fall and Winter semester components.</li><li>• Students who previously completed APSC 6600 as part of the MSc in Applied Science program do not need to take APSC 7600. If this is the case, the student must notify the Program Coordinator.</li></ul>
APSC 7610: Research Applications & Knowledge Transfer	<ul style="list-style-type: none"><li>• Generally taken during the first year.</li><li>• This is a single semester course.</li></ul>
APSC 7602: Doctoral Research Proposal	<ul style="list-style-type: none"><li>• Students should complete the Doctoral Research Proposal within 3 to 4 semesters of beginning the program.</li><li>• For students who have transferred from the MSc program, this should be completed within 2 semesters of beginning the PhD program.</li><li>• The student submits a 5 to 10 page written research proposal to their Examination Committee, makes a 20 minute public presentation of the written proposal, and then must defend the proposal during an <i>in camera</i> meeting with the Examination Committee immediately following the public presentation. More details regarding the composition of the Examination Committee and requirements of the Proposal's components are given in the <a href="#">Doctoral Research Proposal Information for Students &amp; Faculty</a>.</li></ul>
ASPC 7603: Qualifying Examination	<ul style="list-style-type: none"><li>• Students are expected to complete their Qualifying Examination within 7 semesters of beginning the program.</li><li>• For students who have transferred from the MSc program, this should be completed within 5 semesters of beginning the PhD program.</li></ul>

	<ul style="list-style-type: none"> <li>• Students generally spend several months prior to the exam engaged in full-time, self-directed study in 3 to 4 fields of knowledge assigned by their Examination Committee. In the first part of the exam, the student receives 2 written questions from the Examination Committee. The student then has 7 days to submit written responses to these questions. In the second part of the exam, held within 14 days of submitting the written responses, the student must defend their written responses during an <i>in camera</i> oral examination with the Examination Committee. More details regarding the composition of the Examination Committee and procedure for the Qualifying Examination are given in the <a href="#">Qualifying Examination Information for Students &amp; Faculty</a>.</li> <li>• Passing the Qualifying Examination marks the transition from PhD student to PhD candidate.</li> </ul>
<p>APSC 7620: Research Internship</p>	<ul style="list-style-type: none"> <li>• Students may undertake the Research Internship at any point during their degree.</li> <li>• For the Internship, the student must spend a minimum of four months working at a different research institution (university, governmental, NGO, or private sector) with the objective of gaining additional experience in research techniques or applications, and benefiting from expertise that is not available locally.</li> <li>• Students must submit a proposal for their internship a minimum of two months before the planned internship is set to begin. Please see the <a href="#">Doctoral Research Internship Information for Students &amp; Faculty</a>.</li> </ul>
<p>APSC 7604: Doctoral Dissertation</p>	<ul style="list-style-type: none"> <li>• Students receive a Pass for successfully defending their thesis and submitting their finalized thesis document, approved by their Examination Committee, to FGSR.</li> </ul>

Registration Procedures:

Every term, register for FGSR 9000, otherwise you will be made inactive in the program.

Registration for APSC 7602, 7603, 7620, and 7604 (Doctoral Research Proposal, Qualifying Examination, Research Internship, and Doctoral Dissertation) is closed, requiring special permission to register. The procedure for taking APSC 7602, 7603, and 7604 is as follows:

1. Consult with your supervisory committee to plan when to take the courses.
2. Perform your course requirements.
3. Once completed, submit the appropriate forms.
4. Once the forms are received, the Program Coordinator will provide an override for the course and notify you by e-mail.
5. Register for the course and notify the Program Coordinator you have done so.
6. The Program Coordinator will enter your grade.

The procedure for taking APSC 7620 is as follows:

1. Consult with your supervisory committee to plan when and where to perform the internship.
2. Find an internship.
3. Complete and submit the "Internship Proposal Form".
4. Once approved, complete the internship.
5. Once the internship is over, complete and submit the "Internship Report Form".
6. Once the forms are received, the Program Coordinator will provide an override for the course and notify you by e-mail.
7. Register for the course and notify the Program Coordinator you have done so.
8. The Program Coordinator will enter your grade.

## Other Important Courses

FGSR 9000: Program Continuation	To remain in the PhD program, students must be registered for at least one Saint Mary's course during each semester (Fall, Winter, and Summer). To ensure this, students are advised to <b>register for FGSR 9000 every semester</b> . Registering for this course tells the University "I'm working on my PhD", regardless of whether you are taking courses or conducting research.
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## Establishing a Supervisory Committee

A Supervisory Committee must be established for all new PhD students within two months of starting the program.

A PhD student's Supervisory Committee must consist of a minimum of three faculty members:

1. the research thesis Supervisor,
2. a faculty member who doesn't specialize in the student's area of research (and typically isn't from the same department as the Supervisor), and
3. another faculty member (may be an expert in the student's area of research).

The core Supervisory Committee members may be external to the university, but must hold a PhD or equivalent.

The Supervisory Committee may consist of more than three members. While meetings become more difficult to schedule with larger committees, additional expertise is sometimes required depending on the nature of the research to be conducted.

Students should consult with their Supervisor to identify potential faculty members for their Supervisory Committee. The "[Establishment of Supervisory Committee Form](#)" should then be completed and submitted to the Applied Science Program via the Dean of Science Office.

**NOTE: Students must meet with their Supervisory Committee at least once per year.** Each Supervisory Committee meeting must be documented using the PhD in Applied Science "[Committee Meeting Form](#)".

## Examination Committees

All meetings of the Examination Committee are presided over by a Chair. The Chair must have a PhD and must not be involved with the student's research. It is the responsibility of the Supervisor to find a chair for the Examination Committee meeting.

For the **Research Proposal** and **Qualifying Examination**, the Examination Committee consists of:

1. the Supervisory Committee, and
2. an External Examiner, who holds a PhD, is not part of the student's Supervisory Committee, and is not from the same department as the Supervisor.

The same External Examiner can be used for both the Research Proposal and Qualifying Exam.

For the **Thesis Defense**, the Examination Committee consists of:

1. the Supervisory Committee, and
2. an External Examiner, who is an expert in the research area, holds a PhD, has not previously been involved in the student's research, and is external to the University. This does not have to be the same person who served as the External Examiner on the Research Proposal or the Qualifying Examination.

## Course Registration

Registration for courses is done through SMU's online "[Self Service Banner](#)" system. APSC courses are listed under the "Applied Science" subject listing.

## Risk Management

When conducting research or any other work that is part of your degree, safety must be your first priority. This includes ensuring your personal safety, as well as the safety of those around you, and University property.

Constructing a Risk Management Strategy is an essential component of every student's program, and must be done before any research activity begins.

All new students must prepare a Risk Management Strategy in order to minimize the potential for harm. Preparing a Risk Management Strategy involves undertaking the following steps:

- i. identifying potential hazards (potential sources of harm),
- ii. determining the level of risk associated with each hazard (risk = likelihood of harm x severity of that harm)
- iii. identifying ways to eliminate hazards, and/or of reducing the risk associated with those hazards that cannot be eliminated.

Identified hazards and proposed mitigation measures must be reported via the University's "[Graduate Research Hazards Identification Notification](#)" form. When complete, this form should be submitted to the Program Manager ([keith.bain@smu.ca](mailto:keith.bain@smu.ca)), and **students must receive formal notification from FGSR that their form has been approved prior to engaging in any research activities.**

Students who will deal with hazardous materials will also need to undertake Workplace Hazardous Materials Information System (WHMIS) training. More information about WHMIS training can be found on the [Faculty of Science WHMIS page](#).

## Thesis Defense

As a student enters the final stages of writing their thesis, the following should be kept in mind:

1. Apply to Graduate (two semesters before you plan to graduate)

In order to graduate, you must complete a "[Graduation Application](#)" and submit this to the Service Centre. You should enroll in APSC 7604 prior to submitting the application (see #2, below).

The Graduation Application needs to be submitted well before your prospective graduation date—almost two semesters in advance. Application deadlines for each of the convocations are listed below:

Convocation	Deadline for submitting Graduation Application
Spring	October 1 <sup>st</sup>
Fall	June 1 <sup>st</sup>
Winter	August 1 <sup>st</sup>

## 2. Prepare for your Thesis Defense (several months before you plan to defend)

Enroll in APSC 7604:

- Students should enroll in APSC 7604 for the semester in which they plan to defend their thesis.

Check thesis formatting:

- Students should ensure that their thesis conforms to Saint Mary's [formatting guidelines for PhD dissertations](#).

Ask your Supervisor to select and confirm an External Examiner:

- Students should encourage their Supervisor to arrange an External Examiner. The External Examiner for a PhD thesis must be external to the University.

Arrange a date for your defense:

- When proposing a date for your defense remember that the ready-to-defend version of your thesis needs to be complete well in advance of this date: the External Examiner needs to receive your thesis a minimum of 1 month before the defense, and the members of your Supervisory Committee will want to read/assess your thesis before it is sent to the External Examiner.

## 3. Complete the External Examiner Nomination Form (6 to 7 weeks before your defense)

Along with a PDF version of your ready-to-defend thesis, the "[Approval of Thesis for Defense & External Examiner Nomination Form](#)" needs to be submitted to FGSR a **minimum of 1 month before your defense**.

You should present this form to your Supervisory Committee members **well in advance of this one-month deadline**, as they will want to read/assess your thesis before signing the form.

#### 4. Defend your Thesis

The student should print a copy of their thesis title page for signatures and bring it with them to the defense.

The thesis defense starts with a 30-35 minute oral presentation delivered by the student. The presentation is public: anyone may attend (fellow students, other faculty, friends, relatives). The presentation is followed by a question period lasting approximately 90 minutes, during which the members of the Examination Committee take turns asking the student questions related to their research. The defense is presided over by an independent Chair, who introduces the student at the start of the defense, ensures that each Examiner gets equal time for questioning the student, etc. At the conclusion of the defense, the student will be asked to leave the room while the Examination Committee deliberates. The student is then invited back into the room by the Chair to receive the Examination Committee's assessment.

After the defense, students should read the FGSR procedures for "[Submitting the Completed, Revised Thesis after the Defense](#)".

## Money Matters

### Stipends:

Full-time students normally receive an annual stipend for the first three years of their Doctoral degree made up of funding from the following sources:

- Research grants held by the Supervisor
- Funding provided to the Applied Science program from FGSR
- Teaching Assistant (TA) positions (or "TAships")

Typical stipends for PhD students range from \$21,000 to \$34,250 per year. These amounts include funding from all sources, including scholarships and TAships.

Annual stipends are paid in three installments: one per semester. Near the start of each semester, your stipend amount will be posted to your student account. Your tuition will be charged to that same account. After your tuition has been deducted, you can



request that the balance remaining be paid to you via a "refund cheque". Refund cheque requests must be email to: [Service.Centre@smu.ca](mailto:Service.Centre@smu.ca). Note that payment for the TA portion of your stipend is administered differently, and paid biweekly following Financial Services payroll schedule.

### TA Positions:

Teaching Assistant positions are administered by individual departments. The pay rate for graduate student TA positions in the Faculty of Science is typically \$1250 per single semester course. PhD students typically take four TA positions per year: two in the Fall semester and two in the Winter (total TA funding of \$5,000/year). The expected time commitment per course is usually 4 hours/week.

Work as a TA may include a variety of tasks: marking submitted materials; preparing quizzes, assignments, or solution sheets; assisting in the setup or conduct of laboratories or tutorials; assisting with demonstrations; leading discussions; etc.

Prior to the start of each semester, students should:

1. Visit your department to:
  - o determine which courses you will serve as a TA for
  - o complete the necessary payroll paperwork
2. Meet with the professors that you will be undertaking TA duties for to:
  - o ensure that you understand what your duties will be
  - o ensure that you understand what is expected of you (are you expected to attend lectures? to complete marking assignments within five days? etc.)
  - o ensure that both you and the professor share a common understanding of the expected time commitment per week

### Scholarships:

Students who obtain scholarships often receive more than the minimum stipend. Students should check [FGSR's scholarship webpage](#) every month for a list of current scholarship opportunities.

Common scholarships for Applied Science students include:

- [Canada Graduate Scholarships \(CGS\) – Doctoral program](#)
  - o \$35,000/year for 36 months
  - o Application deadline is October 17<sup>th</sup>
- [NSERC Postgraduate Scholarships \(PGS\) – Doctoral program](#)
  - o \$21,000/year for 36 months
  - o Application deadline is October 17<sup>th</sup>

- [Nova Scotia Graduate Scholarship \(NSGS\)](#)
  - Up to \$15,000/year, renewable for four years
  - application deadline is usually in early April—make a note on your calendar to check the deadline on March 1<sup>st</sup>
- [Durland Scholarships in Graduate Research](#)
  - Very competitive entrance scholarship
  - \$15,000/year for up to 4 years

When students apply for the NSERC or Durland scholarships, submitted applications are first ranked by the Applied Science program. Each Departmental Representative (see last page) is invited to score submitted applications according to the selection criteria provided by the scholarship organization. The Program Coordinator also scores the applications. The combined scores are used to rank applications, which are then sent to FGSR. The FGSR Awards Committee considers the ranked applications received from the Applied Science program together with applications submitted from other programs at SMU, and ultimately decides which students to offer scholarships to.

- [Durland Doctoral Convocation Award](#)
  - \$2,000 award for graduating PhD students
- [J. Kevin Vessey Award for the PhD in Applied Science](#)
  - \$1,000 award for a graduating PhD student
  - Application deadline is April 10<sup>th</sup>
  - Application packages will consist of a statement of research impact and the dissertation.
  - Successful applicants will have demonstrated an outstanding impact of their research that goes beyond academia.
  - Application packages are to be submitted to the APSC program manager by email ([keith.bain@smu.ca](mailto:keith.bain@smu.ca))
  - Maximum of 1 award annually for a graduating PhD student, presented during spring convocation but graduates from the previous fall and winter convocations are eligible.
- [Governor General's Gold Medal](#)
  - Awarded annually to the graduating SMU student judged to have the most superior thesis
  - Nominations are first made by a research supervisor, then the APSC Committee will select the final nominee.

### Expense Reimbursements:

Whenever possible, research expenses should be paid for by your supervisor. In some situations, however, you may need to personally pay for research expenses and then file for reimbursement. For example, if you attend a conference in a different city you

can apply for a per diem reimbursement to cover daily living expenses while away. To file for reimbursement, complete a Financial Services "Reimbursement Form" (see [here](#) for a completed example). You'll need to ask your supervisor for the "Account Information" section blank for your supervisor to complete. Make a personal copy of any related receipts, and then attach the original receipts to the form. Deliver the completed Expense Report and original receipts to your supervisor for completion, signature, and submission to Financial Services.

## Who to Ask for Help

### 1. Ask your Supervisor

For all questions and concerns regarding the PhD in Applied Science program, seek help from your Supervisor before asking anyone else.

### 2. Ask your Departmental Representative, or the Student Representative

Each Department involved in the MSc in Applied Science program has a Departmental Representative. Here is the current list:

- Biology: [Dr. Anne Dalziel](#)
- Chemistry: [Dr. Kai E. O. Ylijoki](#)
- Finance, Information Systems, and Management Science: [Dr. Majid Taghavi](#)
- Geography: [Dr. Mathew Novak](#)
- Geology: [Dr. Todd Ventura](#)
- Mathematics and Computing Science: [Dr. Somayeh Kafaie](#)
- Anthropology/Forensic Science: [Dr. Tim Frasier](#)
- Astronomy & Physics: [Dr. Rituparna Kanungo](#)
- Psychology: [Dr. Jason Ivanoff](#)
- Engineering: [Dr. Jason Rhineland](#)
- Environmental Science: [Dr. Aldona Wiacek](#) (Fall) [Dr. Erin Cameron](#) (Winter)

There are also two Student Representatives for the Applied Science program: TBA (MSc program) and [Gaurav Rao](#) (PhD program).

### 3. Ask the Program Manager, or Program Coordinator

Program Manager: Mr. Keith Bain  
Science 221  
(902) 491-6535  
[keith.bain@smu.ca](mailto:keith.bain@smu.ca)

Program Coordinator: Dr. Kai E. O. Ylijoki  
[kai.ylijoki@smu.ca](mailto:kai.ylijoki@smu.ca)