Operations Manual & Rules for Graduate Study & Research

In the

Department of Biology

University of Saskatchewan

Graduate work in the Department of Biology is administered by the Graduate Studies Committee (GSC). The GSC reports to the Department on matters of policy and to the College of Graduate Studies and Research (College) on matters affecting individual students. Each M.Sc. and Ph.D. student in the Department is represented individually by an advisory committee, which is responsible for the direction and progress of the student and reports to the College via the GSC. Students, supervisors and members of advisory committees are all responsible for ensuring that College and departmental requirements are met. College regulations and other useful information are found in the University Calendar and in the Graduate Student Handbook available from the College. Another publication, Scholarships for Postgraduate Study, is available from the College office. Most of the same material is available on the College website (http://www.usask.ca/cgsr).

Graduate Studies Committee

The GSC normally consists of: the Head of the Department, four other faculty members appointed by the Head (one of whom is the Chair) and two graduate student members appointed by graduate students in the Department. The students are voting members of the GSC whenever policy decisions are made, but will be excluded from discussion relating to individual students, their records and performance.

The role of the GSC is to ensure uniform admission, course, thesis, and examination standards for students in the Department. The GSC may also make recommendations regarding disciplinary action against a student.

1. **Student admission**: Requirements for admission to the College are published in the University Calendar and on the College website (http://www.usask.ca/cgsr). Correspondence should be addressed to: The Chair, Graduate Studies Committee, Department of Biology, University of Saskatchewan, 112 Science Place, Saskatoon, SK, S7N 5E2, Canada. Applications for admission to the Department are approved by the GSC but acceptance of an applicant is dependent upon a supervisor being available. Occasionally the supervisor and GSC may wish to interview an applicant before a final decision is made. Supervisors are responsible for providing research space for their students unless other arrangements have been made with the Assistant Head of the Department. The Department of Biology cannot assume responsibility for providing laboratory space for the students of associate faculty members or adjunct professors.

2. **Scholarships and Teaching Fellowships**:

The GSC is responsible for annual competitions to award University Graduate Scholarships (UGS) and Graduate Teaching Fellowships (GTF), based on annual allocations to the Department. The awards are subject to College as well as departmental regulations. College regulations deal mainly with period of eligibility for UGS support, academic standing, and service requirements. They are published in the College Policy and Procedures Manual which is available on the College website (http://www.usask.ca/cgsr/index.html).

The details of departmental regulations are specified in separate documents (Action Plan for Award of University Graduate Scholarship Funds to Students in the Department of Biology, University of Saskatchewan, 03/97; Regulations Governing Extension Awards for Ph.D. scholars under the new devolved scholarship plan in the Department of Biology, Effective 01/09/97; Principles and Rules Pertaining to Service Requirements for University Scholars and the Award and Management of Graduate Teaching Fellowships in the Department of Biology, Approved by the Department 13/04/93). The above three documents are available from the chair of the GSC.

In brief, students are not responsible for applying for UGS and GTF. Supervisors must nominate their students in annual competitions. The UGS awards may be held for a maximum of two years by M.Sc. students, three years by Ph.D. students and four years by students transferring from M.Sc. to Ph.D. degrees. The corresponding times for GTF and UGS/GTF combinations are three, four and five years, respectively. Subject to College eligibility regulations, preference is always given to the renewal of awards over new applications, provided a candidate's progress is satisfactory. Scholarship holders must maintain an average of 75% in their coursework to retain their scholarships.

Note: GSC no longer makes recommendations for NSERC scholarships.

3. **Structure and Operation of Advisory Committees:** The GSC makes recommendations to the College regarding the composition of Ph.D. advisory committees and monitors the composition of M.Sc. committees. After an applicant has been admitted to the College, the supervisor will establish an advisory committee as soon as possible before, or soon after, student's arrival, and according to the following principles:

a. The committee for a M.Sc. student shall consist of the Head of the Department, who is normally the chair of the committee, and at least two other faculty members from the Department. One or more members may be added from outside the Department.

b. The committee of a Ph.D. student shall consist of the Head of the Department, who is normally the chair of the committee, and at least four other persons. At least two of these must be faculty members from the Department and at least one must be a faculty member from another university department.

c. When the Head of the Department has particular expertise in the area of research and is expected to continue to serve on an advisory committee even after a change of headship, he or she should not be designated as chair. Instead, a representative of the GSC should be designated as the chair until the headship of the department changes. When a new Head of the Department is appointed, each advisory committee on which he or she served previously should review its membership and, if necessary, appoint a new member to meet the minimum departmental and College requirements.

d. Adjunct professors in Biology are normally considered as regular members of the Department and may supervise students. Associate members in the Department may be considered as outside members of advisory committees, since their primary allegiance is to their home department. However, they may also be considered as regular members and may supervise students registered in Biology. Scientists from government and other laboratories who are not Adjunct professors in Biology may serve as members of advisory committees if they have specialized knowledge of the research field. They may also co-supervise students with a regular member of the Department. The status of advisory committee members as intra- or extra-departmental should be designated on the student's "program of studies" form.

Meetings of advisory committees require a quorum. A quorum is two members of a three-person committee, three members of a four-person committee and four members of larger committees. When members of advisory committees go on leave or are absent from the university campus for a prolonged period, replacements must be appointed unless the committee exceeds the minimum departmental requirements. When a supervisor goes on leave the advisory committee must appoint an acting supervisor. The supervisor should inform the GSC about such temporary changes.

4. **Program Approval and Research Proposal**: A student's program (i.e., research topic, course work, members of the advisory committee) will normally be agreed upon at the first meeting of the advisory committee. This should take place no later than 6 months after the student first registers. A "Program of studies" form should then be completed and submitted to the GSC. After approval by the GSC, the program will be submitted to the College.

   The student will normally prepare a research proposal for the first or second meeting of the advisory committee. The proposal will be distributed to the committee at least two days before that meeting.

5. **Monitoring Student Progress**: All advisory committees must meet at least once a year, or more frequently as recommended by the Advisory Committee, to review the student's progress. It is the supervisor's responsibility to schedule these meetings. Students must submit a written progress report at a minimum of one meeting per year.

The GSC reviews the operation of advisory committees and student progress. After discussion in the advisory committee, a graduate student's progress report should be forwarded to the GSC. Brief minutes of the advisory committee meeting indicating topics of discussion should be included.

Academic standards

Students should obtain at least 70% in each course required specifically for their degree. Failure to meet these standards may lead to disciplinary measures by the advisory committee or the GSC.

Seminars

Biology 990 is a scientific communications course in which graduate students present their research findings to the department and provide constructive criticism on the presentations of their peers. All graduate students in the Department of biology must register for BIOL 990 each term, until they have fulfilled the requirement and received credit for the course.

All students are expected to attend and contribute to the annual BIOL 990 graduate student symposium. Students would normally contribute a poster in the first year and oral presentation(s) in subsequent years. During their program, M.Sc. students are required to complete one poster and one oral presentation. Ph.D. students are required to complete one poster and two oral presentations. In addition, all Ph.D. students are required to present a 45 minute seminar based on their work in the department of biology seminar series prior to their thesis defense. Course credit will be granted after the student fulfills these requirements.

If a student is unable to complete the BIOL 990 requirements prior to defending their thesis, the advisory committee will evaluate the circumstances and, if warranted, recommend an equivalent assignment to the student.

6. **Course requirements:** Detailed requirements for graduate programs are published in the University Calendar and on the College website (http://www.usask.ca/cgsr). Specific Department of Biology requirements are as follows.

M.Sc. Degree: For a fully qualified (non-probationary) candidate the minimum course requirement is 9 credit units at the 800 level. In addition, 300 or 400 level courses may be recommended by the Advisory committee to address academic deficiencies of a student.

Ph.D. Degree (after M.Sc.): At least 9 credit units at the 800 level (INCLUDING any such courses taken at the M.Sc. level in the subject area) are required for students with recognized M.Sc. degree in the same specialty.

Ph.D. Degree (without M.Sc.): Same as Ph.D. after completing a M.Sc.

Transfer to Ph.D.: Same as Ph.D. after completing a M.Sc.

As of May 1, 2008, all new graduate students enrolled at the U of S must complete the web-based course, “GSR 960: Introduction - Ethics Integrity” which covers academic ethics, including integrity, conflict and intellectual property. In addition, students working with animals are required to take “GSR 962.: Ethics in animal research”. Graduate students should register for these courses via PAWS and are expected to complete these courses within six months of their first registration.

7. **Ph.D. Preliminary or Qualifying and Comprehensive Examinations**: Ph.D. students are normally required by the College to take a qualifying examination and a comprehensive examination. Usually the qualifying examination is taken within 12 months of commencement of the Ph.D. program. The comprehensive examination is taken after the successful completion of the qualifying exam. College regulations allow the qualifying exam to be waived for students who have orally defended an M.Sc. thesis at this university or at a university recognized to have an M.Sc. program of equivalent training level to the University of Saskatchewan. A recommendation to waive the qualifying exam should be made by the advisory committee and approved by the GSC. The advisory committee should give a brief justification of its recommendation since the GSC will have to make a case to the College that the thesis defence was immediately relevant to the proposed Ph.D. program.

   a. **Preliminary or Qualifying Examinations for students transferring from an M.Sc. to a Ph. D. program:** (see Appendix 1)

   b. **Comprehensive Examination required of all Ph. D. students**: (see Appendix 2)

8. **Transfer from an M.Sc. to a Ph.D.**:

General: Before an M.Sc. candidate is allowed to transfer to a Ph.D. program, the Supervisor, after consultation with the advisory committee, must recommend the transfer to the GSC. Written justification for the transfer must be provided because the GSC. has to make a case for transfer to the College. The student must pass the Ph.D. Preliminary/ Qualifying Examination within the first two years of their program before the transfer can take place.

International Students and Course Requirements: The College may not recognize many non-North American M.Sc. degrees. In those cases, International students must first register in an M.Sc. program (9 credit units) with the intention to transfer to a Ph.D. program, or register in the Ph.D. program as probationary students. In either case, after not less than one and not more than two years, they may be admitted fully qualified to a Ph.D. program, if they have passed the preliminary/ qualifying examination.

International students who register in an M.Sc. program intending to transfer to a Ph.D. will

normally have completed most of the M.Sc. course work at the time of transfer. The College would normally require that these students complete 9 credit units for the Ph.D. degree. However, the advisory committee may recommend that the student's previous M.Sc. course work be recognized. The College deals with such requests on an individual basis. It is therefore very important that the advisory committee document its recommendation carefully in order that the GSC can, in turn, make an effective recommendation to the College.

9. **Students taking all their degrees at the U. of S.**: The Department discourages students from taking all of their degrees at this university. Students who have obtained a B. Sc. and M.Sc. degree from this University, and are registered for a Ph.D. here, or students who have obtained a B.Sc. degree at this University and are registered for a Ph.D. here without having completed an M.Sc. degree, are encouraged to spend a work period at another university or appropriate research institution. The advisory committee should discuss this matter with the student during his or her first year of registration in the Ph.D. program and report the decision in minutes of a committee meeting. The Department or College is not responsible for costs of a work period elsewhere.

10. **Time limits**: The Department expects its students to complete their graduate work expeditiously. The time limits specified by the College for completion are 5 years for the M.Sc. and 6 years for the Ph.D. Under exceptional circumstances the Department may recommend, and the College may approve, an extension of the time limit. Requests for extensions must be made before expiry of the time limit. In general, the College will not approve extensions for students who have chosen to work on something other than their degree in the time allowed.

11. **Language requirements**: In the Department of Biology there is no formal second language requirement but knowledge of a second language may greatly facilitate research in certain areas. Students whose native language is not English are required to demonstrate competence in English before proceeding with a graduate program.

12. **Thesis requirements**: General thesis requirements are outlined in the University Calendar and in the Graduate Student Handbook. There is also a publication entitled "Guide for the Preparation of a Thesis" for sale in the University Bookstore and available on the College website **(http://www.usask.ca/cgsr).** Students are advised to familiarize themselves with these College requirements and seek the advice of their supervisor regarding thesis preparation and publication. The thesis must constitute an integrated whole and be limited to the student's research program. Published papers bound together do not constitute a thesis even if introductory and conclusion sections are included. Nevertheless, it may be possible to organize a thesis in such a way that publication of separate chapters becomes possible with a minimum of effort. In this case the College has stipulated that, if references are cited at the end of each chapter, the format of citation must be the same in each chapter. In the interests of conservation, the College permits the two-sided printing of theses, except for the copies that are provided to the College and are eventually shelved in the University Library.

M.Sc. Degree: A thesis is presented in partial fulfilment of the requirements for an

M.Sc. degree. The thesis should demonstrate the candidate's ability to do independent study and investigation, be written in good literary style and comply with the specifications for thesis publication in the Graduate Student Handbook. It does not necessarily have to present material publishable in a refereed journal. The thesis will be read by members of the student's advisory committee and approved as a defensible document before submission to an external examiner. The student will be required to pass an oral defence examination on the work done for the thesis and on his or her knowledge of matters directly related to it. The adequacy of the thesis and the defence is decided by an examining committee, consisting of the advisory committee and an external examiner, who is normally a member of faculty from another department or scientist from an appropriate institution. The external examiner should not previously have had more than casual contact with the student, e.g. must not have advised the student about experimental design, statistical analysis or use of equipment. When the student has almost completed the thesis, the advisory committee should recommend a suitable external examiner to the GSC. A brief justification of the recommendation (e.g. experience in the area of thesis research) is necessary. If accepted, this recommendation will be forwarded to the College for approval and the College will invite the external examiner to serve.

Ph.D. Degree: The thesis, based upon original investigation, must demonstrate mature scholarship and critical judgement on the part of the candidate. To be acceptable, it must be a worthwhile contribution to knowledge and warrant publication in whole or in part. It should comply with specifications of the College. The student will be required to pass an oral defence examination on the work done for the thesis and related areas of research.

A copy of the thesis in its final form should be submitted to the student's advisory committee for acceptance. Only when the advisory committee deems the thesis to be acceptable for examination will the candidate be given permission to submit to the Examination Committee. The Examination Committee consists of the advisory committee, an examiner from outside the University and such other persons as the advisory committee may select with the approval of the Dean. When the student has almost completed the thesis, the advisory committee should complete Form GSR 300.1, which includes a list of three suitable external examiners, ranked in order of preference, to the GSC. A justification of each potential examiner (e.g. their academic credentials and experience in the area of the thesis) is necessary. If approved, this list will be forwarded to the College and the College will select an examiner and invite him or her to serve.

Thesis Defence Examinations

Students shall normally defend M.Sc. and Ph.D. theses in an "open" oral exam. However, in conjunction with their advisory committees students may petition the GSC for a "closed" exam by writing a memo to the chair explaining the reasons for the request. Various factors, such as health and equity considerations, may be legitimate criteria for requesting and approving "closed" exams.

A "closed" exam will consist of a brief oral summary by the student of the objectives and results of the research, followed by questions from the external examiner and examining committee members. Eventually a decision will be made by the external examiner and committee *in camera*. No one other than the examining committee, external examiner, student and faculty members from the Department may attend the exam and only the external examiner and examining committee may ask questions.

If the exam is "open", the format will be similar to that of a closed defence, except that anyone in the Department of Biology may attend and non-members of the examining committee may also ask questions. However, questions from non-members will be held until the end of questioning by the external examiner and examining committee. The period of questioning by non-members will be brief and at the discretion of the person chairing the thesis defence. To avoid disruption of the exam, non-members of the examining committee may leave at only two junctures: either after the initial oral presentation, or after the period of questioning.

13. **Student files**: Files on all students are retained in the Department. These contain documents from the time a student applies for admission to the time of graduation, for example program forms, minutes of advisory committee meetings and recommendations for scholarships. Items of a confidential nature placed in a student's file should be stamped "CONFIDENTIAL". Students have the right to request a list of the documents in their file and, after review by the Department Head or Chair of the GSC, to access to non-confidential documents in the file.

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Approved by the Department, February 26, 1998
Revised by Vipen Sawhney, Previous Chair of GSC, November 18, 2011
Revisions approved by GSC on November 30, 2011.
Updated from Oct 2014 approved GSC minutes.

Appendix 1

Policy of the Qualifying Exam Procedures for Graduate Students Transferring from a M.Sc. to a Ph.D. Program in Biology
(Approved by the Biology Department, March 10, 2009)

The Department of Biology will require all students transferring to a Ph.D. program to have a detailed Ph.D. research proposal rather than continue with their M.Sc. proposal. The defence of the proposal will serve *in lieu* of an oral defence of a Master's thesis project and thus serve to test the student's capabilities to enter and successfully complete a Ph.D. program. The exam format is intended to allow the student and the supervisor to maintain momentum generated in the first years of the student's graduate program and keep focus on research activities. This exam will also serve students wishing to enter a Ph.D. degree program in Biology, who have completed a graduate degree in countries or institutions where an oral defence of the thesis project is not required. In these cases the advisory committee will use the oral defence of the Ph.D. research proposal as an indication of the student's capabilities in recommending the student to a Ph.D. program.

The qualifying exam will involve completion of a detailed Ph.D. research proposal, an oral presentation of the research completed to date and the research proposal, followed by a defence of the written and oral research plan. Other than the exam format used by the Biology Department, the exam will be subject to all other requirements of the College of Graduate Studies and Research (CGSR).

The **written component** will normally follow these guidelines:

- Approximately 10-20 double-spaced pages of text, plus additional pages for references
- Students may (and are encouraged to) use figures and/or tables in the research proposal to clarify experimental procedures or design [note: these figures and tables are not counted as part of the text page limits; also, they may be added as appendices to the proposal]
- The research proposal will normally contain:
    - A literature review focusing on the broad field of study (approximately 4 pages)
    - Progress to date in M.Sc. as it pertains to the Ph.D. proposal
    - Proposed Ph.D. research project including: aim(s), methodology, experimental design, data analyses, timeline for completion, significance of the work and how will this research make a new or novel contribution to the field [note: this section should the major component of the proposal]
    - Within the proposal it should be clear how the proposed research differs from the M.Sc. research plan

The **oral component** will include a presentation of 20-30 minutes in length. The student will present research completed to date *as it pertains to the Ph.D. research proposal* and a

presentation of the research the student wishes to undertake as outlined in the written proposal.

Immediately following the presentation, the committee will question the student on the research completed to date and the research proposal. Questions should address the student's background knowledge of their general field of study. The advisory committee will use the questions to assess if the student possesses the required background knowledge and ability to enter the Ph.D. program.

According to CGSR:

"The purpose of the Qualifying Examination is to satisfy the academic unit the student has the potential to obtain sufficient knowledge of the chosen general field of study to proceed toward candidacy for the Ph.D. degree." - 5.3.1.2

The committee will assess both parts of the exam combined. At the end of the oral defence, the advisory committee, with the Head of Department or Designate as chair, will ask the student to leave the room and the committee will decide if the student has passed or failed the qualifying exam.

> Pass: In the combined oral and written components of the qualifying exam the student demonstrated sufficient knowledge and ability for the advisory committee to recommend a transfer to the Ph.D. program.
>
> Fail: In the opinion of the committee, during the qualifying exam the student did not demonstrate sufficient knowledge or ability for the committee to recommend transfer to the Ph.D. program.
>
> If a student fails the exam, the committee should either recommend that the student repeat the qualifying exam (with permission of the Dean of CGSR, in accordance with CGSR policies) or recommend that the student continue in the M.Sc. program and not repeat the exam. **Regardless of the recommendation, the student may apply to the Dean of CGSR for permission to repeat the qualifying exam according to section 5.3.1 of the policies and procedure manual.**

After the decision has been made, the student will be invited back into the room and informed of the committee's decision. In accordance with section 5.3.1 of the College of Graduate Studies and Research Policy and Procedures manual, the CGSR will be advised of the results of a Qualifying Examination on a pass/fail basis. Completion of the transfer will be done according to CGSR policy.

Appendix 2

Policy and procedure of the Comprehensive Examination
(Approved by the Biology Department, November 8, 2011)

The purpose of the Comprehensive Examination is to assess the candidate's ability to comprehend and critically discuss research, and their ability to convey scientific ideas in an area cognate to their thesis research. This exam plays a dual role in instruction and assessment: it informs the committee about the student's capacity for, and progress towards, research independence, and functions as a gateway for continuing scholarly activity towards the Ph.D. degree.

It is expected that the Comprehensive Examination will normally be completed within three years since the start of the Ph.D. program

Format of the Comprehensive Examination

Two format options are available for the Comprehensive Examination:

(1) A 'mock' NSERC Discovery Grant (DG) proposal, or
(2) A literature review.

The choice of format must be decided by the candidate, in consultation with their Advisory Committee. The NSERC DG format is increasingly popular because of its relevance to future independent researchers, and the clarity of and ease of access to the NSERC guidelines and application format.

After gaining permission of the Advisory Committee to prepare their written materials (see specific details below), the candidate will normally have three months to complete and submit the material.

1) Grant proposal option

The subject area for this exercise must not duplicate candidate's research project although it might extend some aspects of their research beyond that completed for Ph.D.

The candidate, in consultation with the Advisory Committee, will determine the area of focus for the grant proposal. The completed NSERC Form 180 (Notice of Intent) will be submitted to the Advisory Committee prior to final approval.

The proposal must be written as if the candidate were a first-time applicant for an NSERC DG, following the instructions on p. 13.

2) Literature review option

The subject area for the review article must be cognate to, yet distinct from the area of the candidate's thesis research and will be agreed upon in consultation with the advisory Committee.

In order to ensure there is approval in principle of the topic and the scope of the review, candidates must justify the journal selected, and prepare and then discuss with their Advisory Committee, a half-page outline of their review before proceeding. The format of the review must follow the Instructions to Authors established by the selected journal. The review will be a thoroughly researched and referenced article of approximately 5000 words.

Common features of the two formats:

The Examining Committee will consist of the candidate's Advisory Committee.

The written material will be submitted at least two weeks prior to the date of the oral examination. The candidate can discuss the content of their written materials with other students, faculty, and with members of the Writing Centre, but not with their supervisor, or members of their Advisory Committee. The candidate is not required to be able to generate a fully fundable proposal, or publishable review, in order to pass the Comprehensive Examination. However, it is expected that much of the work submitted will be at a level commensurate with a junior faculty member or an independent researcher.

The candidate will defend the proposal in the format similar to thesis defense which would include two rounds of questions by members of the Examining Committee. The candidate will be judged in part on whether they have adhered to the format guidelines published by NSERC (option 1) or the journal of their choice (option 2).

At the end of the question period, the student will leave the room to allow the Examination Committee to deliberate in camera.

Comprehensive Examinations are judged on a pass/fail basis, with no grade assigned. The candidate will be judged on the quality and clarity of thought and writing in their submission, and whether they have fulfilled the basic criteria by which either a grant application, or review, as appropriate, is peer-evaluated. Failure to pass the Comprehensive Examination on the first attempt requires that the student petition the Dean of the College of Graduate Studies and Research for permission to take a second examination. A second failure results in the student being disqualified from further work on that Ph.D. research. The student may appeal using the procedure described in paragraph 8.4 of the College of Graduate Studies and Research Graduate Student Policy and Procedure Manual (http://www.usask.ca/cgsr/for_fac_staff/Policy-and-Procedure-Manual.php).

Instructions for Completion of the Grant Proposal Option for the Biology PhD Comprehensive Exam

Reviewed and accepted by the Biology Graduate Studies Committee on: 27 January 2015
Reviewed and accepted by the Biology faculty on: 10 February 2014

General formatting requirements: The entire proposal can be presented as a Word or PDF file. For simplicity, we have specified page lengths instead of character counts. In preparing the document students should observe the following formatting guidelines:

- Format guidelines:
  - Submit as a single MSWord or PDF file, with each section beginning on a new page
  - Explain any acronyms and abbreviations fully;
  - Pages must be 8 ½" x 11" (216mm x 279mm);
  - Pages must be single-spaced, with no more than six lines of type per inch;
  - All text must be in 12 pt Times New Roman font;
  - Condensed fonts will not be accepted;
  - All text should be black, and no colour images should be used;*
  - Margins must be set at a minimum of ¾" (1.87 cm);
  - All pages should be numbered sequentially and appear in the order specified below
  - Follow the NSERC guidelines for attachments, summarized below. For details, see: http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/pdfatt2_eng.asp

- There are two sections to the Grant Proposal option for the PhD comprehensive exam:
  - Letter of Intent
  - Full Grant proposal

  Procedures and formatting specifications for each section are detailed in the rest of this document.

Letter of Intent (LOI)

The LOI should be submitted prior to completing the DG application, and the topic approved by the advisory committee. The purpose of submitting a LOI is to ensure that the committee approves the subject area for the comprehensive exam as not duplicating a candidate's research project. It is acceptable for the proposed topic to extend some aspects of the student's research beyond that completed for Ph.D.

- **Details for the NSERC LOI are available at:** http://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/DG_NOI-AI_SD_eng.asp

LOI Contents:

To be provided as a word file, 2 pages maximum.

On the first half of page one Provide the following:

1. Identification

Application Title
Suggested Evaluation Group from NSERC website
Administering Organization

2. Activity Details

Proposed Research Topics
Key Words

On the second half of page one and page two provide a summary of the proposed research:

Include objectives, summary of scientific approach and highlight the novelty of the work

In reviewing the LOI, committees should consider whether the topic is sufficiently different from the PhD thesis work to allow for assessment of the student's ability to work independently. In approving the topic, committee members are encouraged to give the student some initial feedback about the proposal topic and research approach based on information contained within the LOI.

Full proposal modeled after an NSERC Discovery Grant application

- Submission of the CCV is *not* required as part of the comprehensive exam
- Format guidelines:
  - Submit as a single MSWord or PDF file, with each section beginning on a new page
  - Follow the NSERC guidelines for attachments, summarized below. For details, see: http://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/pdfatt2_eng.asp
  - Explain any acronyms and abbreviations fully;
  - Pages must be 8 ½" x 11" (216mm x 279mm);
  - Pages must be single-spaced, with no more than six lines of type per inch;
  - All text must be in 12 pt Times New Roman font;
  - Condensed fonts will not be accepted;
  - All text should be black, colour images are acceptable
  - Margins must be set at a minimum of ¾" (1.87 cm);
  - Pages should be numbered sequentially

Grant proposal contents:

1. **Identification, Activity Details, and Proposal Summary (One page)**
   a. *Application Title*
   b. *Suggested Evaluation Group*
   c. *Time to be devoted to Research/Activity (per month)*
   d. *Administering Organization*
   e. *Research Subject Codes* (include code headers)
   f. *Area of Application Codes* (include code headers)
   g. *Key Words*
   h. *Proposal Summary:* Explain the proposal in language that the general public can understand

2. **Proposal (5 page limit – single spaced with 12 pt. font, including graphics)**
   a. *Recent Progress*
   b. *Objectives – short and long term*
   c. *Literature Review*
   d. *Methodology*
   e. *Impact*

3. **List of References (2 page limit)**

4. **Proposed Expenditures**
   a. *Table of proposed expenses for 5 years including:*
      i. *Salaries and benefits*
      ii. *Equipment or facility*

   iii. *Materials and supplies*
   iv. *Travel*
   v. *Dissemination*
   vi. *Other Expenses*
b. *Relationship to Other Research Support (up to one page)*

5. Budget Justification (2 page limit)

a. Salaries and benefits
b. Equipment or facility
c. Materials and supplies
d. Travel
e. Dissemination
f. Summary

6. Highly Qualified Personnel (HQP) Training Plan (2 page limit)

a. Describe projects and outcomes for planned HQP training
b. Past contributions to HQP training (most important contributions over the last 6 years)

7. Most Significant Contributions to Research (3 page limit)

a. Maximum 5 of your most significant contributions to research over last 6 years
   i. List publications associated with each contribution