Policies and Procedures
Graduate Programs in Biochemistry
University of Saskatchewan

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1. Introduction
The Biochemistry Department offers both M.Sc. and Ph.D. degrees. The purpose of this manual is to provide additional information concerning these programs which may not be available on the College of Graduate and Postdoctoral studies (CGPS) web site (see http://www.usask.ca/cgps/policy-and-procedure/index.php) or the Departmental web site (http://medicine.usask.ca/department/schools-divisions/biomed/biochem.php#GraduateProgram).

2. Application and admission
Prospective students interested in Biochemistry should learn about the department, its research activities, and the availability of opportunities by visiting its web site at: http://medicine.usask.ca/department/schools-divisions/biomed/biochem.php.

[a] Eligibility:
M.Sc. admission requires an honours Baccalaureate (or equivalent) from a college or university of acceptable standing, and equivalent to the degree at this university with a specialization in Biochemistry or a related discipline. A cumulative weighted average of at least 70% (U of S grade system equivalent) is the minimum standard.

Ph.D. admission requires a Master's degree, or equivalent, from a recognized university in an academic discipline relevant to the proposed field and a cumulative weighted average of at least 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in a Master's program).

[b] How to apply:
1. If you intend to apply to the Biochemistry graduate program, it is absolutely required that you first find a faculty member in our Department who will agree in advance to being your research supervisor. Please contact those individuals whose research you have an interest with. Applications can be made at any time.

2. Once you have identified a faculty member who is willing to be your supervisor, you will have to formally apply to the graduate program through the CGPS. The graduate studies application fee is $90 and is NOT refundable. Completion of CGPS’s online application form requires that original academic transcripts and formal proof of English proficiency be provided.

3. Once you have been admitted to the CGPS your application will still need the approval of the Department of Biochemistry Graduate Committee before you can begin your studies.

Please note that for foreign students, once fully accepted it may take at least 2 months to get a visa to study in Canada.

3. Graduate program

[a] Minimum program requirements;
At the beginning of the program, the student in consultation with the supervisor will prepare a research proposal that will be submitted to the Departmental Graduate Committee to assess its suitability (Guidelines attached).

For both M.Sc. and Ph.D. programs the major requirement for continuation in the program is progress in all components. This includes progress in course work, research, written
and oral presentation skills, and thesis writing. If, at any time, the supervisor, committee chair or any other member of the student’s advisory committee has reason to believe that progress is not satisfactory then a committee meeting should be called immediately to discuss and address the issue(s).

Course work: For the M.Sc. program the student must take 9 credit units of graduate level (800) courses with a 70% cumulative grade point average, with no individual mark being below 60%. The committee may recommend additional courses at any level in order to bolster a student’s knowledge in perceived areas of weakness.

For the Ph.D. no further course work is required unless recommended by the student’s committee to bolster a student’s knowledge in perceived areas of weakness. (Note: It may be beneficial for foreign students to take some 800 level courses to increase their chances of winning scholarships).

Research progress: Progress in research will be assessed by the committee annually (usually in May) on the basis of a short but formal presentation and by submission of a progress report to the chair of the advisory committee at least two weeks before the scheduled committee meeting. The students should address the questions raised in previous meeting(s) in their progress report. It is the responsibility of the supervisor to make sure that the questions previously raised have been addressed. (A section “issues to be addressed prior to next meeting” will be added to the minutes to help address this problem)

Please remember to follow the guidelines (see attached). The report is not supposed to be a mini-thesis so the **introduction** should be brief (maximum 4 pages). The committee is trying to assess the progress in the last year so it is helpful to start the **results** with a brief overview of the previous results. Please make it absolutely clear which are the new results.

The Progress report should be submitted to the supervisor for a thorough review then to the Chair of the advisory committee for approval before it is submitted to the members of the committee. If the guidelines are not followed it will be returned to the student for revision.

In addition there will be a second meeting in November at which the student will again present a short talk and an addendum to the progress report which only describes progress in the last 6 months. (MAXIMUM 2 PAGES +FIGURES)

**Presentation skills:** Oral communication skills will be assessed on the basis of the talks to the committee as well as the formal presentations in journal club (or equivalent). Written communication skills will be assessed on the quality of the initial proposal and the subsequent progress reports. The committee should expect to see a significant improvement in both oral and written abilities as the student progresses through the program. (Note: Many language courses are available on campus particularly for foreign students and the advisory committee should recommend these when deficiencies are noted or difficulties are encountered)

**Thesis writing:** (See attached guidelines and section [3f] below) In general, it should require between 3 to 4 months to write the thesis. Progress should be monitored initially by the supervisor with guidance from the committee if there are delays. Students should understand that the thesis must be approved, first by the supervisor, second by the advisory committee chair and finally by the committee before being sent to the external examiner. Each step takes time, usually a minimum of three weeks, and revisions may be required at each step. Even after the thesis defence, major revisions may be required. Therefore, PLEASE allow 3-4 months after submission of the thesis to the supervisor before accepting another appointment or leaving the country!
[b] Duration;

In general, it is expected that a M.Sc. should be completed in 2.5 to 3 years. Extension beyond 5 yrs. requires the permission of CGPS. For completion of a Ph.D. the time frame is longer, between 4.5 to 6 years. Extension beyond 6 yrs. requires the permission of CGPS. Students can request a leave of absence due to health or personal reasons. It is important to make arrangements with your supervisor and chair of the advisory committee well in advance if possible. The CGPS also has to approve all leaves.

c] Teaching;

All students are encouraged to amass as much teaching experience as possible. As part of the program, all students will be expected to demonstrate in either the 310 or 311 lab courses BIOC 310 or 311. This involves helping the undergraduates in the lab one afternoon/week as well as marking lab reports. There is a stipend for this work of about $18/hour. All MSc students should have a minimum of one and PhD students a minimum of two TA experiences during their respective programs. A student can exceed this minimum level as long as there is mutual agreement between the supervisor and student.

In addition, the Biochemistry Department offers several online courses in which graduate students may participate by acting as mentors and leading small-group discussions. (The salary is up to $3000 but is restricted to Biochemistry students)

It is expected that time spent teaching/demonstrating will not come at the expense of the student’s research.

d] Transfer from M.Sc. to Ph.D.

Some students may seek permission from their supervisor and advisory committee to transfer from a M.Sc. program to a Ph.D. program before completing the requirements of the M.Sc. program, and without preparing and defending a M.Sc. thesis. This option is generally reserved for students who are doing very well in the M.Sc. program, and who show great promise for success at the Ph.D. level. M.Sc. students who have completed at least 9 credits of graduate coursework, with a grade point average of 80 or higher, may seek permission to transfer to the Ph.D. program as early as one year after entering the program but must do so before the end of their second year. M.Sc. students who have been in the program more than two years will not be permitted to transfer to the Ph.D. program. M.Sc. students must also pass a qualifying exam (see below). If the student fails the qualifying examination on the first try, a second examination can be undertaken within three months. However, a second failure automatically disqualifies a student from transferring directly to a Ph.D. program. Final approval to transfer from the M.Sc. program to the Ph.D. program is given by the College of Graduate and Postdoctoral Studies, and is not guaranteed even if the student passes the Qualifying Examination.

Students admitted to the Ph.D. program must take the qualifying exam within one year of beginning their program. Passing the exam is required to continue in the program.

e] Ph.D. qualifying exam;

The Ph.D. qualifying exam is an oral exam and is designed to test the student’s general scientific and biochemical knowledge. The Department of Biochemistry Graduate committee
will conduct the examination. Please note that the student’s supervisor is not allowed to attend this exam. Students are advised to contact their supervisors and Grad Chair well in advance in order to prepare. A list of topics with which the student is expected to be familiar are given in the Appendix. It is expected that time spent preparing for the exam will not come at the expense of the student’s research.

[e] Ph.D. comprehensive exam;

Students in the M.Sc. program are not required to take a comprehensive examination.

All candidates for the Ph.D. degree are required to pass a comprehensive examination. Normally, the comprehensive exam should be held within 2 years of admission into the Ph.D. program or transfer from the M.Sc. program. The comprehensive exam will be an oral examination format conducted by the Advisory Committee.

The comprehensive exam is designed to test the student’s knowledge in their AREA of RESEARCH. It should be considered as a preliminary thesis defence which may identify areas of deficiency, giving the student plenty of time to acquire the knowledge they ultimately require. If the student fails the comprehensive examination on the first try, a second examination can be undertaken within three months. However, a second failure automatically disqualifies a student from continuing in the Ph.D. program.

[f] Preparation and thesis defense. (See “Progress in thesis” for time line and guidelines);

When a student and his or her Supervisor believe that the research work is complete, the student must ask the Advisory Committee for permission to write a thesis. This request can be made at any time. A table of contents must be sent to the advisory committee for approval. The Advisory Committee must satisfy itself that the quantity and quality of the research is adequate, and that the student has a good grasp of his or her own work in relation to the existing knowledge base in the area of specialization. The Advisory Committee will either grant permission to stop research and concentrate on data analysis and thesis preparation, or specify additional research work that must be carried out.

A final oral defense of the M.Sc. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner who is a member of another Department of the University, and who has not been a member of the student’s Advisory Committee. The Examining Committee for a M.Sc. defense will be chaired by the Chair of the Advisory Committee.

A final oral defense of the Ph.D. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner from outside the University and approved beforehand by the CGPS, and such other persons as the Advisory Committee may select with the approval of the CGPS. A designate of the Dean of CGPS acts as Chair of the Examining Committee at a Ph.D. defense.

Both the M.Sc. and Ph.D. thesis defense are in the form of an oral examination, approximately three hours in length. It will begin with a formal 20 minute presentation by the graduate student of their thesis work that is followed by a question and answer session.

4. Administration of the program
[a] Departmental Graduate committee;
   The general functions of the Graduate Committee of the Department of Biochemistry are
to administer the graduate programs, to ensure that each graduate student fulfills the
requirements necessary for an advanced degree in Biochemistry, and to ensure that the standards
of the Departmental graduate program are maintained.

[b] Advisory committee;
   The Advisory Committee for each graduate student functions to approve the Program of
Study (course work and research program) as well as to ensure that the student satisfies all of the
requirements of the Graduate Program in Biochemistry. Major changes in the student’s program
requires the approval of the Advisory Committee. The Advisory Committee also provides a
source of information and counsel for graduate students. In this way, the graduate student will be
exposed to a variety of opinions and ideas and can obtain help from individuals with particular
expertise required for some aspect of the research project. Members of the Advisory Committee
are also available for consultation concerning personal problems in situations where the student
does not wish to approach their supervisor.

   The Advisory Committee is composed of the Supervisor (and any Co-Supervisor), a
Chair, and other faculty members of this or other departments, chosen by the Grad Chair and the
Supervisor. The minimum number of members of a M.Sc. Advisory Committee is three. The
minimum number of members of a Ph.D. Advisory Committee is five, including at least one
member from another, cognate department. A Supervisor and a Co-Supervisor count as one
member in terms of voting.

   The Advisory Committees will meet regularly in May of each year to receive the Annual
Progress Report from each graduate student. A second shorter meeting will also be required in
November. The Advisory Committee may also meet at any other time at the request of the
graduate student, the Supervisor, the Chair of the Advisory Committee, or the Chair of the
Graduate Program Committee.

[c] Student/supervisor agreement;
   See attached appendix.

5. Financing graduate school
   [a] Sources of funding;
   Supervisors are responsible for ensuring that each graduate student receives a stipend
which meets a minimum departmental standard. Current departmental standards are $19,000 per
year for M.Sc. students and $24,000 per year for Ph.D. students, although supervisors can pay
more. Termination of funding cannot be made unilaterally by the supervisor and requires a
meeting of the advisory committee. In the absence of any other funding, this stipend will usually
come from research grants held by the Supervisor. However, it is beneficial for both the student
and the Supervisor if some or all of the support for the student is derived from scholarship or
assistantship funds. Support from extramural sources generally provides a higher stipend than
support from intramural (University of Saskatchewan) sources. In particular, a student who wins
a scholarship (e.g. CoMGRAD, Sask. Innovation or federal funding) will have their minimum
stipend increased as follows:
   M.Sc. $19K + 50% of the non-matched portion of the award to a maximum of $29K.
   Ph.D. $24K + 50% of the non-matched portion of the award to a maximum of $36K.
It should be noted that [a] these stipends are subject to the conditions of the award; for example, some fellowships cannot be held simultaneously, [b] devolved funds are not included and [c] stipends will revert to the base line if the fellowship is terminated.

Special case of CSC students. The CSC PhD scholarship funding (currently $19,200/annum) requires the supervisor to pay the tuition of the student (in addition to topping up the salary to $24K as per departmental guidelines). Therefore, CSC students will be excluded from the 50% top-up stipend policy that is in place for other external scholarships.

Departmental Assistance.
The department awards scholarships in August, adjudicated by the chair of the Graduate Committee in consultation with the head. These scholarships are supported by devolved University Graduate Scholarship funds, devolved College of Medicine Graduate Scholarship funds, and departmental funds. Further information can be found in the appendix.

Financial assistance from the College of Medicine.
A limited number of Graduate Teaching Fellowships and Graduate Teaching Assistantships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

A limited number of Graduate Research Fellowships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

The Arthur Smyth Memorial Scholarship is available through the College of Medicine. These awards are intended for especially meritorious students who are nearing the end of a Ph.D. program. Applications are submitted through the departmental Graduate Program Committee.

Comrades scholarships are awarded biannually and are particularly lucrative ($23K for M.Sc. and $27K for Ph.D.)

Submission dates and application forms will be circulated to students when available.

Financial assistance available from the College of Graduate and Postdoctoral Studies

The CGPS offers the Dean's Scholarship for especially meritorious students. Preference is given to students entering the first year of a Ph.D. program, although entering M.Sc. students are also eligible. Several application deadlines occur in the first few months of each calendar year. Applications are submitted through the departmental Graduate Program Committee.

From time to time, the College of Graduate Studies announces the availability of Graduate Service Fellowships, which involve payment for various tasks or service within the University of Saskatchewan. Students who are receiving major support from other sources are ineligible, so it is unlikely that our graduate students will be able to take advantage of this program.

The Saskatchewan Innovation and Opportunity Graduate Scholarship is offered for graduate students conducting research in specific priority areas. Eligible current students will be invited to apply online. The department will also be invited to nominate a restricted number of external applicants each year. www.saskatchewan.ca/residents/education-and-
Financial assistance available from extramural sources

A. National Science and Engineering Research Council (NSERC). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a NSERC-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at: http://www.nserc-crsng.gc.ca/Students-Etudiants/indexEng.asp

B. Canadian Institutes for Health Research (CIHR). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a CIHR-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at (click ‘funding opportunities’): http://www.cihr-irsc.gc.ca/e/37788.html

C. A wide variety of additional intramural and extramural awards are available, most of which are directed towards particular areas of study or particular categories of applicants. Students are strongly encouraged to explore the opportunities available. A comprehensive list of additional scholarship opportunities is maintained by the CGPS at: http://grad.usask.ca/awards/index.html

[b] Travel funds;
Students are encouraged to go to conferences. Approximately $1500 may be available from the college and $1000 from at least once during the program.