

University of Victoria
Department of Biochemistry and Microbiology (BCMB)
Graduate Handbook
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CONTACT INFORMATION

The following lists the identities, contact information and roles of the primary resource personnel in the academic unit:

	Name	Office	Telephone	e-mail	Role
Chair	Dr. Perry Howard	Petch 207b	250-721-7077	bcmb@uvic.ca	Chair of Department
Graduate Advisor	Dr. Chris Nelson	Petch 192	250-853-3889	biocgadv@uvic.ca	Directs and provides oversight of the Departmental Graduate Program
Graduate Program Assistant	Kaitlyn Adderley	Petch 207	250-721-8861	biocgsec@uvic.ca	Manages the Departmental Graduate Program; contact for administrative or logistical questions

Graduate Student Liaison	Sean Waugh	Petch 246	250-853-3190	bcmbgradliaison@uvic.ca	Liaison between current graduate students within the Department and the Graduate Advisor/Graduate Committee; provides support to current graduate students in an impartial and confidential manner
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RESPONSIBILITIES IN THE SUPERVISORY RELATIONSHIP

Faculty and students are bound by policies set by the University, Faculty of Graduate Studies, and this Department.

Faculty of Graduate Studies policies are given in the Graduate Calendar and in policy documents found on the Faculty of Graduate Studies website: uvic.ca/graduatestudies. In particular, students and faculty members should read the Graduate Supervision Policy, which outlines the rights, responsibilities and expectations in the student-supervisory relationship.

REGISTRATION

Students must be continuously registered full-time in all three terms in the graduate program. No part-time graduate programs are offered.

Students can register for the graduate program on-line using [MyPage](#). In order to receive full-time graduate student status (and ID) students must be registered in BIOC/MICR 599/699 each and every term. The student photo ID card can be obtained in the University Centre and also serves as a bus pass, library card and recreation pass. Students can apply for a UVic NetLink ID *via* the Help Desk [website](#).

UNIT FUNDING POLICIES

Graduate students receive funding from many different sources, including: fellowships, scholarships, awards, teaching assistantships, and research assistantships. UVIC has policies and guidelines for each of these funding sources, and academic units may also have distinct policies for graduate funding. Graduate students should ensure they are aware of the policies governing their funding.

Base Stipend

Applicants accepted into regular full-time graduate studies will receive a guaranteed level of financial support in the form of a base stipend for each eligible year they are in the program. Student base stipends are normally a composite of four sources:

- 1) Research Assistantships (provided by the supervisor from lab grants),
- 2) Teaching Assistantships
- 3) UVic Awards, Scholarships, Fellowships,
- 4) External awards and fellowships (CIHR, NSERC, MITACS etc).

The current base stipend is \$27,000 per year.

Eligible years for guaranteed funding

The department guarantees that graduate students will receive at least the base stipend yearly for a period suitable to complete their studies.

- For entry with a completed bachelor's degree (BSc)
 - 2 years guaranteed funding for a Master's degree (MSc)
 - 5 years guaranteed funding (total) if transferred to the doctoral program (PhD)
- For entry with a completed Master's degree:
 - 4 years guaranteed funding for a PhD

Funding beyond these times is not guaranteed by the Department, and is a matter strictly between the supervisor and student. All support remains subject to satisfactory performance on the part of the student and, after these limits have expired, to the availability of funds.

Research Assistantships

All arrangements for research assistantships (grant support) are made directly between the student and their supervisor. Supervisors are responsible for ensuring that their students receive the minimum base stipend.

Teaching Assistantships

All students are normally required to teach in the undergraduate laboratories for three terms (Master's) or four terms (PhD) within the first two years of entering the program (Master's) or within the first three years of entering the program (PhD). In special circumstances, the Department Chair may waive the third and fourth term requirement, after recommendation by the student's supervisory committee. All arrangements for Teaching Assistantships (TAs) are made between the student and the Department. Contact the Department Graduate Program Assistant to arrange a TAship at the same time as you confirm your acceptance into our program. Selection of your preferred TA position can be made by replying to the Department Administrative Officer's e-mail on this subject, which is sent when positions become available. Each TAship is approximately 70 hrs/term.

UVic Awards, Fellowships, Scholarships

Consideration is primarily given to those new applicants whose complete entrance materials are received by the Graduate Admissions Office before the competition deadlines, which are usually in late spring. *New students should submit their application for the graduate program before February 15 to ensure consideration.* Typically awards commence at the start of the September term. Those students who entered the program in the previous January or May term will be considered for the September entry award competition.

All new students with a minimum GPA of 7.0 or equivalent in the last 2 years of graduate or undergraduate course work (*e.g.* an A- average from a Canadian university or a first class from a university in the U.K.) and who do not hold external awards valued at \$15,000 per year or higher are eligible for a University of Victoria Fellowship, a Graduate Entrance Award (GEA), or a University of Victoria Graduate Award.

Current students who have achieved outstanding academic or research success in the preceding year will also be considered by the Graduate Committee with a nomination for one of the Faculty of Graduate Studies awards. The nominees are selected by the department's Graduate Committee with preference given to students who:

- a) are early in their studies;
- b) demonstrate research productivity through peer-reviewed journal publications, presentations at conferences, etc.;
- c) demonstrate academic excellence.

Students who hold provincial and national awards (*e.g.* NSERC or CIHR scholarships) may be nominated for an additional award (\$5,000) from the President's Research Scholarship fund. To be considered for this award, students must notify the Department and the Office of the Dean of Graduate Studies that they have a national award.

Notification of UVic Award Competitions

Current and continuing students who wish to be considered for award nomination or renewal for any Faculty of Graduate Studies Awards, such as the UVic Fellowship, the UVic Graduate Awards or other University Awards must submit an up to date *Curriculum Vitae* in late May or early June each year. The Graduate Program Assistant will announce when CVs are due. The accepted format is available on the Canadian Common CV website, using NSERC as the funding source. New students who have not yet arrived on campus are automatically considered for these awards, and need not submit a CV.

Discretionary Supervisor Supplements

A supervisor may, at their own discretion, top up their students' stipends above the required base stipend (\$27,000 per year). However, these discretionary supplements are not guaranteed for the duration of the program.

Donor Awards

Other University of Victoria awards include Faculty of Graduate Studies and Faculty of Science Graduate Donor awards. Nomination requests for eligible students will be sent by the graduate program Assistant during the fall term for the Donor awards. When a student wins a donor funded UVic scholarship they are to reap the full financial benefit of the award over and above the base stipend.

External Awards

National and provincial agencies such as NSERC, CIHR, and MITACS offer trainee awards. Canadian citizens or landed immigrants resident in Canada are eligible for these scholarships and fellowships, which are awarded on the basis of high scholastic achievement and/or evidence of skill at research. Application information for Tri-Council scholarships may be obtained online in early September and the deadline for submitting completed Tri-Council applications is usually early October for the PhD level or December for the Master's level.

Students who have been awarded a PGS/CGS-M will not automatically receive a PGS/CGS-D. Notices of workshops and approaching deadlines will be sent but it is the responsibility of the student to submit their application. Additional information on external awards is available at the Financial Aid Office and the Office of the Dean of Graduate Studies.

You must advise the department and your supervisor of any awards you receive.

DETERMINING YOUR SUPERVISOR

All graduate students registered for a degree in the Department must have a full-time regular department member of the faculty as their supervisor or co-supervisor. Students who are studying under a member that is adjunct to the Department must have a regular full-time member of the Department as a co-supervisor. Unless authorized by the Department and the Dean of Graduate Studies, a student who initiates a degree program under the direction of a given supervisor retains that supervisor until completion of the degree.

NOMINATING YOUR SUPERVISORY COMMITTEE

Each graduate student must have a supervisory committee, which should be selected within 3 months of entry to the graduate program. The supervisor, in consultation with the student, chooses the supervisory committee members. The Department requires graduate student supervisory committees to be composed as follows:

- MSc committee: academic supervisor, one Departmental member, and one member from the University of Victoria who holds an appointment outside the Department of Biochemistry & Microbiology.
- PhD committee: academic supervisor, two departmental members, and one member from the University of Victoria who holds an appointment outside the Department of Biochemistry & Microbiology.

Recognized experts from government, industry or other universities are eligible to be appointed to supervisory committees. The Graduate Advisor must approve all supervisory committee selections.

EXPECTED MEETING FREQUENCY

With your Supervisor

It is expected that graduate students and their supervisors meet regularly to discuss their thesis project. At a minimum this interval should normally not exceed 40 business days (unless a delay is required because of authorized supervisor or student absence).

With your Supervisory Committee

It is the student's responsibility to schedule supervisory committee meetings. Students must meet with their supervisory committee within the first six months of their program and at least once per year after that, although the supervisor or the student may call meetings as often as required. Students must book a room for the meeting through the Biochemistry and Microbiology general office. *Students who do not hold regular supervisory committee meetings jeopardize their status in the program.*

Supervisory committee meetings may be called by any member of the committee or by the student, or may be called by the Graduate Advisor in cases where student progress is unsatisfactory or as a means to effect dispute resolution between the student and supervisor. However called, the student will endeavor to choose a time and place that is mutually agreeable to all members of the advisory committee and/or the Graduate Advisor if he or she has called the meeting.

FORMAL REVIEW OF STUDENT PROGRESS

For their annual Supervisory Committee Meeting, students should prepare a summary of their progress and objectives to be sent to their committee members and the Graduate Program Assistant not less

than 1 week before a scheduled meeting. The summary should be ~2-4 pages of 12-point double-spaced type (not including figures or references). Its contents should complement the presentation, providing additional field knowledge, program milestones (courses completed, conferences attended, etc.), and fill any gaps in understanding about experiments.

The supervisor will normally chair the committee meeting. The meeting will begin with a 15-20 minute presentation by the student, which should consist of:

- an introduction of the thesis work.
- objectives/hypothesis.
- progress to date.
- short/medium and long term objectives.
- course work completed and remaining.
- time frame for completion of degree.

The student should give special emphasis to changes in research direction and to research obstacles encountered or anticipated since the last meeting. A student who believes that they have completed sufficient research must submit an outline for the thesis in addition to the project outline, and request permission from the committee to initiate the process of proceeding to defense (refer to the section “Thesis/Dissertation Defense” for further details on this process).

After the presentation, committee members will discuss the thesis work with the student (although questioning and discussion during the presentation is encouraged). The student must be prepared to discuss all aspects of their thesis work.

At the end of this discussion the student will be asked to leave the room, and the supervisor will normally chair the committee’s evaluation of the student’s progress. The committee must make an assessment of the student’s progress and formulate specific advice for the student. Students will be graded under the following scheme:

- **Excellent** – the student has exceeded all expectations, and the progress made on the thesis/dissertation work is exceptional.
- **Good** – the student has met most expectations and made significant progress on the thesis/dissertation work.
- **Adequate** – The student has met most expectations and made some progress on the thesis/dissertation work.
- **Needs Improvement** – the student has struggled to meet expectations (some but not all expectations met) or progress is below what is reasonably expected.
- **Not Satisfactory** – indicates, for example, that a student does not pursue goals in a vigorous fashion, does not take direction well, shows disregard for safety, or repeatedly fails to complete routine procedures.

At the conclusion of the meeting the supervisor will note the student’s progress toward expectations and summarize the committee’s advice and instructions on the Graduate Student Progress Report form provided by the Graduate Program Assistant. This document, along with the student’s outline, will form the basis of the required yearly progress report. Committee members will sign the form to indicate their agreement with the assessment and instructions.

At the close of the meeting the student will be invited to return to the room. The supervisor will explain the committee ranking and instructions to the student before leaving to provide the student

an opportunity for an *in camera* discussion of their progress with their committee (if desired).

The student must sign the assessment form to acknowledge that they have read and understand the evaluation and the instructions of the committee. The form will be returned by the student to the Graduate Program Assistant who will submit it to the Graduate Advisor for signature. The signature of the Graduate Advisor indicates that the student's progress has been appropriately documented. The Graduate Advisor will bring to the attention of the department chair any exceptional concerns raised by a student's progress report.

A student rated 'needs improvement' or 'not satisfactory' must receive detailed written direction from the committee as to how they have failed to meet expectations and how they may improve their rating. ***A rating of not satisfactory must be accompanied by a recommendation for the student to remain in or to be expelled from the program.*** The committee is obliged to act on any weakness identified in the student's research progress or in their academic preparedness. Such action may, for example, take the form of assigned essays based on literature reviews, additional course work, or additional supervision in the laboratory. In the case of two or more determinations of 'not satisfactory' progress on formal assessments not less than 8 weeks apart, a written recommendation is made to the Graduate Advisor of whether or not to make application to the Dean of Graduate Studies to withdraw the student for 'failure to meet academic standards.'

EXPECTED TURNAROUND TIME OF ANNOTATED THESIS, DISSERTATION OR PAPER -

Normally supervisors and members of the supervisory committee are expected to return comments on a thesis, dissertation or paper to a student within 20 business days from time of receipt, unless a delay is required because of authorized supervisor or student absence.

COURSE REQUIREMENTS

The graduate course requirements for the Department are listed in the Graduate Studies calendar, and are listed below. Students are expected to take their courses as early as possible in their graduate program. Students may be required to take additional graduate level courses at the discretion of the Graduate Committee or their supervisory committee. The supervisory committee will carry out selection of any additional courses. Please note: In case of a difference between the BCMB graduate handbook and the BCMB entry in the Graduate Calendar, the BCMB entry in the Graduate Calendar shall take precedence.

Masters students

BCMB 500 – Critical Thinking in Biochemistry and Microbiology (1 unit)

Allows students to develop their oral presentation and written communication skills and provides students with training in critical analysis of data and peer-reviewed publications.

BCMB 501 – Essentials of Scientific Writing (1 unit)

Exploration of the techniques and strategies of effective scientific writing for knowledge dissemination, grant submission, and peer-reviewed journals.

BCMB 502 – Journal Club I (1 unit)

Journal club designed to introduce students to relevant biochemical and microbiological research literature.

BCMB 580 – Research Seminar (0 units)

Successful completion of BCMB 580 requires that students present their own 580 seminar and receive a favourable assessment from faculty in attendance, and that they attend and participate in seminars given by other graduate students as well as seminars from guest speakers.

BIOC or MICR 599 – MSc Thesis: Biochemistry or Microbiology (variable units)

Students must be continuously registered in their MSc Thesis full-time in all three terms in the graduate program. No part-time graduate programs are offered

Doctoral students

BCMB 500 – Critical Thinking in Biochemistry and Microbiology (1 unit)

Allows students to develop their oral presentation and written communication skills and provides students with training in critical analysis of data and peer-reviewed publications.

BCMB 501 – Essentials of Scientific Writing (1 unit)

Exploration of the techniques and strategies of effective scientific writing for knowledge dissemination, grant submission, and peer-reviewed journals.

BCMB 502 – Journal Club I (1 unit)

Journal club is designed to introduce students to relevant biochemical and microbiological research literature

BCMB 580 – Research Seminar (0) units

Successful completion of BCMB 580 requires that students present their own 580 seminar and receive a favourable assessment from faculty in attendance, and that they attend and participate in seminars given by other graduate students as well as seminars from guest scientists.

BCMB 602 – Journal Club II (0 units)

Journal club is designed to introduce students to relevant biochemical and microbiological research literature. PhD students normally complete BCMB502 in the first year of their program, and register and participate in BCMB 602 in subsequent years.

BCMB 680 – Advanced Research Seminar (0 units)

Successful completion of BCMB 680 requires that students present their own 680 seminar and receive a favourable assessment from faculty in attendance, and that they attend and participate in seminars given by other graduate students as well as seminars from guest speakers.

BCMB 693 – PhD Candidacy Examination (3.0 units)

Students enroll in BCMB 693 upon provisional transfer to the BIOC or MICR PhD program and remain enrolled until all candidacy requirements are complete.

BIOC or MICR 699 – PhD Dissertation: Biochemistry or Microbiology (variable units)

Students must be continuously registered in their PhD Dissertation full-time in all three terms in the graduate program. No part-time graduate programs are offered

DEPARTMENT SEMINARS - ADDITIONAL INFORMATION ABOUT BCMB 580/680

Objective, Timelines & Expectations:

The objective of BCMB 580/680 is to give every graduate student an opportunity to present their research to the Department in the form of an oral seminar. Oral presentation of one's research is a fundamental skill that all scientists must develop, and these seminars provide students an

opportunity to hone their presentation and questioning skills in front of a broad scientific audience. Further, BCMB 580/680 allows fellow students, post-doctoral fellows and faculty members to keep abreast of research in the Department and to provide critical feedback.

BCMB 580 seminars:

All MSc and PhD students are expected to give at least one BCMB 580 seminar during their studies:

- ***Students in the MSc program on track for a MSc degree*** must present their 580 seminar within 18 months of entering the program, and before making a formal Request for Oral Examination (please take note of the “scheduling” section below). Seminars should be structured to give a comprehensive review of the work in the thesis, including an introduction suitable for a general scientific audience that clearly identifies the research question(s) under study, hypotheses and objectives, research methods, major findings and conclusions. The expectation is that students will display an advanced knowledge of their field.
- ***Students in the MSc program seeking to transfer into the PhD program*** must present their 580 seminar within the first 18 months of study, and before formal scheduling of their Candidacy Examination. The seminar should be a comprehensive review of the work to date, including an introduction suitable for a general scientific audience that clearly identifies the research question(s) under study, hypotheses and objectives, research methods, major findings and conclusions, and long-range objectives to be explored over the remaining course of study. The expectation is that students will display an advanced knowledge of their field, a critical analysis of their research progress, and clear strategies to achieve their long-term objectives.

Students who seek transfer and anticipate that their research directions will be changing should speak of the work completed to date, and outline the potential research strategies that may be pursued by other investigators. There is no requirement to discuss their upcoming PhD project, as this will be explored during their Candidacy Examination.

- ***Students who hold a MSc degree when they enter the PhD program*** must present their 580 seminar within the first 15 months of study, and before scheduling their Candidacy Examination. The expectations are the same as transfer students, where the seminar should be a comprehensive review of the work to date, including an introduction suitable for a general scientific audience that clearly identifies the research question(s) under study, hypotheses and objectives, research methods, major findings and conclusions, and long-range objectives to be explored over the remaining course of study. The expectation is that students will display an advanced knowledge of their field, a critical analysis of their research progress, and clear strategies to achieve their long-term objectives.

BCMB 680 seminars:

All PhD students are expected to give at least one BCMB 680 seminar near the completion of their studies. Students must present their 680 seminar before making a formal Request for Oral Examination (please take note of the “scheduling” section below). The talk should be a comprehensive review of the work in the thesis, including an introduction suitable for a general scientific audience that clearly identifies the research question(s) under study, hypotheses and objectives, research methods, major findings, conclusions, and potential future directions. The expectation is that students will present an original contribution to science in the form of a cohesive synthesis of hypotheses, methods and conclusions that demonstrates the student’s ability to analyze their data critically to test the stated hypotheses.

Seminar preparation and procedures:

Students will submit a seminar title and appropriate abstract (approximately 200-250 words) to the Graduate Program Assistant no later than 2 weeks before their scheduled talk. For MSc and PhD students completing their degree the abstract submitted should be the thesis abstract. If this is not available, the abstract must be a fair representation of their thesis work. For PhD transfer students preparing for their BCMB 580 seminar, the abstract should be a fair representation of the work completed thus far.

Content & Timing

Students may exclude thesis material from their 580/680 seminars only under exceptional circumstances (such as protection of intellectual property rights), and only with the consent of their supervisory committee.

BCMB580 seminars should last 20 minutes and BCMB680 seminars should last between 45 and 50 minutes. All students will be expected to discuss their research in a question period immediately following the seminar. Students must take care to properly attribute all internal and external contributions to their research. This would include, for example, specialized reagents, cell lines or animals, expert assistance in performing and interpreting experiments, and any figures, charts and graphs.

Scheduling

When possible, the BCMB 580/680 course coordinator will assign students time slots in the regularly scheduled department research seminar series. When insufficient numbers of slots are available the course coordinator will arrange for slots outside the regular schedule.

BCMB 580/680 seminars will not be scheduled during the summer term (May - August).

Students who anticipate defending their thesis in this term must take care to schedule their 580/680 seminar during the months prior.

Attendance of student supervisory committee members

The student and supervisor will invite members of the graduate student's supervisory committee to attend the 580/680 presentation.

Assessment of student performance

All available faculty members will attend BCMB 580/680 seminars to assess student presentations. Faculty are obliged to provide constructive, written feedback on any category to which they assign a rank of "needs improvement" or "unsatisfactory". This feedback will be structured in such a way as to support the student in improving their presentation or research approach.

Students can obtain an example of the 580/680 assessment form from the Graduate Program Assistant.

Faculty assessments will be submitted to the Graduate Program Assistant. The faculty assessments will be provided to the student, the student's supervisor(s) and the student's supervisory committee via e-mail within two weeks of the presentation. The supervisory committee will be responsible for integrating these assessments in the ongoing evaluation of the student and to support improved performance. In the event that the student receives a majority ranking of "unsatisfactory" in any one of the categories, the supervisory committee, in consultation with the Graduate Advisor, will review the assessments and determine if the seminar should be revised and re-presented. If it is deemed that the seminar must be re-

presented, the supervisory committee, guided by the faculty member assessments, will assist the student in developing an actionable plan to support an improved, revised seminar.

Procedures in the case of the 580/680 needing to be re-presented

Students who re-present their BCMB 580 or 680 presentations will revise their seminar based on advice from their supervisor and supervisory committee, and re-present their work no later than 4 weeks from the initial seminar. In the case where a 580/680 seminar is to be re-presented, the Graduate Advisor shall ensure by written communication that each faculty member is aware of the circumstances surrounding the need to re-present and that the revised seminar be scheduled during a time when the majority of faculty and the supervisory committee are able to attend.

If a student receives a majority “unsatisfactory” ranking within any category on the second attempt the student will meet with their supervisor(s) and supervisory committee within 7 days to assess the student’s overall performance and to form a recommendation in consultation with the Graduate Advisor and Department Chair as to whether the student shall be permitted to continue in the program or shall be required to withdraw as per Faculty of Graduate Studies directives on Academic Performance (detailed on Faculty of Graduate Studies web pages and below). Should the student receive permission to continue in the program the supervisory committee will be charged with ensuring that the student shows unambiguous improvement for each of the deficient criteria listed by the supervisory committee.

Attendance at seminars:

All graduate students are expected to attend BCMB 580/680 seminars given by their colleagues, as well as departmental research seminars given by senior scientists inside and outside the University. Exceptions are made for:

- Students with documented medical or family emergencies.
- Students who have been given permission by their supervisory committee to proceed to program completion (whose attendance is optional).
- Students who are not available as the seminar conflicts with assigned TA duties.
- Student who can provide advance documentation of extenuating circumstances (such as conference travel).

Finally, the department recognizes the time-sensitive nature of some experiments, and students may be excused from a limited number of seminars with their supervisor’s permission.

ACADEMIC PERFORMANCE & CONDITIONS REQUIRING WITHDRAWAL

Students must make satisfactory progress in their research, as assessed by the supervisory committee. Any student who fails to meet academic standards, or whose project or dissertation is not progressing satisfactorily, may be required to withdraw from their graduate studies program with the advice and consent of the Graduate Studies Committee and Chair of the Department.

- a) Students in the Faculty must achieve a grade point average of at least 5.00 (B) for every session in which they are registered. All students with a sessional or cumulative average below 5.00 will not be allowed to register in the next session until:
 - their supervisory committee has reviewed and approved their academic performance;

- the Dean has reviewed and approved their continuation in the Faculty.

Grades on courses designated FNC (for no credit - 100, 200 or 300 level) or transfer credit courses will not be used in the calculation of sessional or cumulative grade averages.

- b) Every grade of 4.0 (B-) or lower in a course taken for credit in the Faculty of Graduate Studies is reviewed by the supervisory committee and the Graduate Advisor, who will recommend to the Dean of the Faculty whether or not the student may continue. Such students will not be allowed to register in the next session until the Dean gives such approval.
- c) On the advice of the supervisory committee, the Faculty of Graduate Studies may impose special conditions that must be met within a specified time frame or the student will be required to withdraw.

THESES PROJECTS THAT INVOLVE INDUSTRY CONNECTIONS

The university encourages researchers to seek and enter into arrangements which provide external financial support for research in which university infrastructure is used, providing that such arrangements are compatible with the university's mission and its policies and regulations. Research Funding Agreements are agreements between the University of Victoria and the contracting agency and must not be written in the name of an individual, a department, centre, institute, school or faculty. All agreements are subject to University approval and governed under policy [RH8200](#). It is important to involve the office of Research Partnerships and Knowledge Mobilization (RPKM) early in the process to ensure obligations for protection or commercialization of intellectual property are met. A student whose thesis project has a connection with industry is encouraged to discuss the specifics with the Graduate Advisor and/or Departmental Chair to ensure the involvement is free of conflicts of interest, does not detract from their primary thesis project(s), and does not preclude them from publishing their research results in a timely manner. Conflict of interest guidelines for student faculty relations can be found in appendix E of the [Collective Agreement](#)

THESES PROJECTS THAT INVOLVE ANIMAL OR HUMAN SUBJECTS

All research involving the use of animals or human subjects requires approval from the appropriate University of Victoria Ethics committees and is governed by Policies [RH8110](#) University regulations for research involving animals and [RH8105](#) University regulations for research involving humans. For animal research approval from the Animal Care Committee is required. For human research approval from the University Human Ethics committee is required. Importantly, a student whose thesis project has a connection with animal or human research must be included and formally named on any protocol involving animals or humans. It is important that you ensure that you have been added to the relevant protocols before commencing working with animals or humans.

TRANSFER FROM THE MASTERS TO THE DOCTORAL PROGRAM

Application and requirements to transfer from the MSc to the PhD program should be completed within 18 months of starting the MSc program or within 16 months for a student already holding a MSc degree.

The Department's formal requirements for transfer from the MSc to the PhD program are:

- a) At least a B+ (6.0) average in coursework
- b) Successful completion of seminar requirements (BCMB 580)

- c) Support of the supervisor
- d) Formal endorsement by the supervisory committee

If requirements (a-d) above have been satisfied, the student can proceed with writing a PhD candidacy proposal and scheduling the candidacy exam. Please contact Graduate Program Assistant for information regarding the transfer procedure.

PHD CANDIDACY EXAMINATION PROPOSAL

Students wishing to transfer from the MSc to the PhD program, or entering directly into the PhD program, are required to write and defend a grant-like proposal describing their thesis research. The proposal outlines hypotheses or research questions to be tested, the experimental approaches that will be taken to answer these hypotheses or questions, and the overall significance of the research.

General Layout

- Page 1 is a title page including your name and student number.
- Body of the proposal – refer to “Overview of Proposal Sections”
- References
- Figures/Tables

Proposal Specifics

- The main body of the proposal can be no longer than 7 pages. Two additional pages are allowed each for figures/tables and references (11 pages total)
- Avoid using acronyms and abbreviations but, if used, give the full names the first time they are used.
- Any references cited should use a standard bibliographic format that includes the title of the referenced work.
- Figure legends should be succinct but must be complete, *i.e.* they should have enough detail to explain the figure without requiring reference to the proposal.
- Figures and Tables should each have a brief, descriptive title.
- Text must be single-spaced (*i.e.* six lines per inch).
- ¾ inch margins, 12 point font, black ink. No condensed type or spacing.
- Use white paper 8½ × 11” (21.5 cm x 28 cm), portrait format, single column.
- Print on one side of the page or submit an electronic copy to the committee.

Overview of Proposal Sections –

Section 1 – Justification of the proposed research

Approximately 2½ pages.

In this section, examiners will assess the quality of **what** is being proposed. Examiners will be considering the following questions when reading your proposal:

- Are the research questions justified?
- Is sufficient background information provided to enable interpretation of the proposed research?
- Are the overall goals and objectives of the project clearly stated and well-defined; with distinct expected outputs?
- Is the potential impact of the research well described?

Examples of subheadings relevant to Section 1:

Rationale

- A brief statement (< ½ page outlining the proposed research

Background and Significance

- This section should answer 3 questions: what is known, what is not known, and why is it essential to find out
- Critically evaluate the relevant literature
- Incorporate your preliminary data where relevant

Research Question or Hypothesis

- Should flow from questions defined in the Background section.

Overall Objective

- State the goal of the proposed research
- Tie in to the underlying question or hypothesis
- Example – “The objective of this research proposal is to establish the mechanisms by which apicomplexan parasites attach to invade host cells”

Specific Aims

- State the specific steps that will be taken to achieve the stated objectives of the grant.
- Example – Specific Aim #1 “Establish the basis for inter-genera/species specificity by mapping the AMA1-RON2 interface”

Section 2 – Execution of the proposed research

Approximately 4½ pages.

Use this section to articulate the research methodology. Examiners will be asked to assess the project’s design and plan, including **how** the project will be completed, the feasibility of the proposed research, and timelines that indicate **when** the project is expected to be completed. Examiners will be considering the following questions when reading your proposal:

- Are the methods appropriate to deliver the proposed output(s) and achieve the proposed contribution(s)?
- Are potential challenges and appropriate mitigation strategies described?
- Are the metrics for progress and success clearly defined?
- Are the timelines and related deliverables of the project realistic?

Examples of subheadings relevant to Section 2:

Research Design and Methods

- The Specific Aims have stated what you propose. Now you must describe how you propose to fulfill the Aims.
- Be focused and clear. Put the Aims in a logical and sequential order.
- It is useful to break this section down, beginning with each stated Aim (plus a one-sentence rationale for each aim) and an outline describing how each Aim will be accomplished.
 - Rough guideline – use ~3/4 of a page to present each Aim.
- Reference, but do not describe, well-known or standard procedures. Describe procedures that are unlikely to be known to the examiners.

- Explain the processes for data collection, analysis and interpretation. Include needed statistical analyses.
- Discuss relevant control experiments.
- Relate each Aim back to the overall objective of the project and clearly articulate how each Aim will advance the field of study.

Strengths and Weaknesses

- Discuss potential difficulties and limitations of the proposed procedures and give alternative procedures to achieve the aims.
- State clearly possible weaknesses and/or ambiguities.

Timeline

- Provide a brief tentative sequence and timetable for the project. Consider doing this using a diagram or table. Clearly define priorities.

CANDIDACY EXAMINATION EVALUATION PROTOCOL

Examining committee

An examining committee will be selected by the supervisor (with the approval of the Graduate Advisor) no later than four weeks prior to the exam. It is normally comprised of:

- All members of the student's supervisory committee, excluding the academic supervisor. If the current supervisory committee consists of a primary supervisor, a departmental co-supervisor and one outside member, the departmental co-supervisor may act as an examining committee member.
- Two examiners if the student is transferring from the MSc program, or one examiner if the student has entered directly into the PhD program. These examiners are drawn from Department faculty by the student's academic supervisor in consultation with the Graduate Advisor,
- An exam chair (Graduate Advisor or designate)

It is the responsibility of the student to arrange a date/time for the examination to take place that works for all the examining committee members, as well as to secure a room through the BCMB general office for the examination and arrange for the Graduate Advisor or designate to chair the examination.

Evaluation of the written proposal

The written proposal will be distributed to all members of the examining committee two weeks prior to the exam. It is recommended that students obtain guidance, feedback and mentorship from their supervisor prior to and during the drafting of their candidacy proposal. However, it is mandatory that the proposal represent an original document created by the student.

If it is deemed suitable for defense by all members, the student is considered to have passed the written component of the exam. This does not preclude examiners from requesting revisions following the oral exam.

Any examiner who requires revisions to the proposal before it can be defended must inform the Graduate Advisor or Graduate Program Assistant at least one week prior to the scheduled date of the examination. In this case, the examination will be postponed for not more than four weeks while

revisions are made. The student will be required to resubmit the proposal at least one week before the rescheduled examination.

It is expected that any committee member who wishes to delay an examination to allow for revision of the proposal will consult with the academic supervisor and at least one other member of the examining committee before making the request.

The oral exam

Examiner questions will focus on the research proposal, however, students will be expected to demonstrate broad knowledge of their field of research, to relate their proposed research to the field as a whole, and to show how the research questions or hypotheses they have formulated address critical areas of the field. They must be able to explain the technical aspects of their proposed experiments, and to defend their choice of experiments as being the best way to address their research questions or hypotheses.

Candidacy Exam Procedure

1. The candidate begins with a 10-20 minute oral presentation that highlights the main points of the research proposal.
2. The examining committee asks two rounds of questions.
 - Examiners who are not part of the student's supervisory committee begin each round, followed by
 - the outside member of the supervisory committee, followed by
 - department members of the committee (including a co-supervisor if they are acting as a member of the examining committee)
 - the supervisor will attend the examination as a silent and non-voting observer. They will not participate in questioning.

Each examiner will be allowed 15 to 20 minutes for questions in the first round, with a second round of questions as time permits. The total time allotted for questions after the candidate's presentation is normally two hours.

3. The candidate will withdraw at the conclusion of the questioning. The chair will then ask each member of the committee to review the performance of the student and assign a grade of pass, adjourn, or fail.
4. Possible outcomes:
 - *Pass*

A unanimous vote of pass or, only one vote to fail or to adjourn, will conclude the examination and the student will receive permission to remain in the PhD program. *Passing the candidacy examination does not guarantee the attainment of a PhD degree.*
 - *Adjourn*

If two or more members of the committee determine that the oral portion did not constitute a pass the exam is adjourned. In this case the committee will give the student an appraisal of weak areas that will be specifically addressed when the examination is resumed. Note that it will remain the responsibility of the student to defend all aspects of

their proposal in the resumed examination, which will follow the format of the first examination and take place within two months.

Under Faculty of Graduate Studies guidelines, the outcome of the second oral exam is final. In this exam the grade of pass or fail is determined by majority vote of the examining committee members. A tie vote will constitute a fail.

- *Withdraw*

Students who fail the second oral examination may complete a MSc degree, but will be required to withdraw from the PhD program.

REQUIRED THESIS AND DISSERTATION FORMATS

Expectations for MSc and PhD candidates' Thesis and Final Oral Examination

Thesis Structure

Although a student can exercise considerable discretion in composing their thesis, in general it must conform to the structure outlined below.

Introduction

The Introduction should provide the relevant background to the thesis work. The introduction should familiarize the reader with what is known about the topic, and identify the key outstanding questions in the field, especially those that are addressed by the thesis research. The goal of this section is to lead the reader to the hypothesis and questions that will be addressed in the thesis. The Introduction should contain a "Research hypotheses/questions and objectives" subsection, and should generally not exceed 30 pages overall.

Data Chapters

Although the classic manner to write a thesis is in the passive voice, the Department recognizes that modern scientific writing is frequently in the active voice and will accept theses in either style.

It is permissible for data chapters to closely resemble publications but, in general, they should not be identical. In particular, the introduction to a data chapter should not repeat material already presented in the general introduction of the thesis. Students should try to make the thesis flow as a single cohesive document.

The treatment of collaborations is a particularly important point, as data chapters should describe the experiments performed primarily by the student. The work of collaborators may be included when it is crucial to understanding the student's own data; however, there must be a clear delineation between work done by the student and work done by the collaborators with a statement at the beginning of each chapter indicating those experiments that were performed by the student and those that were performed by collaborators. If the publication on which a data chapter is based describes a highly collaborative project, then the chapter should not track the publication closely but should be written to emphasize the student's own work. In addition, relevant experiments not incorporated in the publication (or placed in supplementary material) should be included in the chapter rather than an appendix. Inclusion of these additional experiments will be useful to future researchers in the field.

Concluding Chapter

This chapter should begin with an overall summary of the work that explains how it has advanced the field. Students should refer to questions and hypotheses raised in the Introduction and explain how the research has contributed to our understanding of these problems. As in your Introduction, the concluding chapter can propose hypotheses and models, and should emphasize the student's own view of the field. The thesis should finish by suggesting future investigations that address the key issues in the field.

Citations and References

The thesis must be a summation of the student's own work. The work and ideas of others must be properly cited and referenced. In addition, it is unacceptable to misquote or take out of context the ideas or words of others. This most commonly occurs when one cites review articles instead of original works. Reproduction of published work frequently requires the permission of the publisher, and every journal includes appropriate instructions in their 'information to authors' section. Students are responsible for obtaining this permission, and any resulting letters from the publisher should be included as an appendix. The Department of Biochemistry and Microbiology allows the review and editing of graduate student theses and publications by peers, qualified scientists or journal editorial staff.

Expectations for a Master's Thesis

- A Master's thesis consists of an introduction, at least one data chapter containing results & discussion, conclusions and references.
- The thesis must describe the student's own work.
- The student must show that they have an advanced knowledge of the literature pertaining to their thesis topic, and that they are able to design and execute experiments appropriate to the topic.
- Although data chapters do not have to be published papers, it is expected that they be of a quality equivalent to or exceeding that of current peer-reviewed publications in the student's field.

Expectations for a Doctoral Thesis

- A PhD thesis consists of an introduction, at least two data chapters containing results & discussion, conclusions and references.
- The thesis should be an original work that advances the field of study.
- The student should display a mastery of their thesis topic.
- The department expects that PhD candidates will have written first-author publications during their studies.
- Although data chapters do not have to be published papers, it is expected that they be of a quality equivalent to or exceeding that of current peer-reviewed publications in the student's field.

A new digital resource is available for all graduate students writing theses, or dissertations, called the **Thesis Writing Starter Kit**. This document is the result of a collaborative effort among numerous UVic services, and will be permanently housed here:

<https://www.uvic.ca/graduatestudies/home/home/news/current/thesis-starter-kit.php>

PREPARATION FOR THESIS/DISSERTATION DEFENSE

All students are required to submit a MSc or PhD thesis that must be defended orally before an examining committee. For the MSc degree, the thesis examining committee consists of the supervisory committee and an external examiner from outside the Department.

For the PhD degree an external examiner:

- must be selected from another institution, and
- must be an authority in the student's field of research, and
- be declared by the supervisor as having 'arm's length' status.

The candidate's academic supervisor normally chooses the external examiner. A representative of the Dean of Graduate Studies will appoint the Chair for the defense.

A student may proceed to an oral examination once the supervisory committee is satisfied that the dissertation or thesis represents an examinable document for the degree requirements. The supervisory committee confirms their satisfaction by signing the "[Request for Final Oral Examination](#)" form. The supervisory committee normally receives a copy of the thesis at least two weeks prior to being asked to sign this form, which enables each committee member to determine if the thesis is examinable. This form must be submitted to the Dean of Graduate Studies at least **twenty working days** (MSc) or **thirty working days** (PhD) before the anticipated date of the oral examination. Guidelines for setting up oral examinations and regulations governing the format of thesis and the dissertation are found at the Faculty of Graduate Studies [website](#).

The decision of the examining committee shall be based on the content of the dissertation or thesis as well as on the student's ability to defend it. Procedures to be followed in the event of a failure in either the written or oral defense portion of the thesis are defined by the Faculty of Graduate Studies.

Expectations for MSc and PhD Oral Examinations

- The oral examination begins with a brief presentation by the student (10-20 minutes) of a summary of their work.
- The oral examination centers about the thesis; however, examiners may occasionally ask questions of a more general nature. Students must be familiar not only with their stated hypotheses, but with the foundations upon which they rest. Students should be prepared to defend the formulation of their hypotheses in the context of the current literature and to demonstrate why a particular experiment will settle an outstanding scientific question. An examiner who is not convinced by a hypothesis, by the interpretation of an experiment, or by a stated conclusion will often ask the student to expand on what is written in their thesis by explaining concepts and methods at a fundamental level.
- Students must be intimately familiar with the details of their own experimental methods and findings, and must be able to rationalize such things as the choice of controls, reagents and approaches. The question is often asked, 'Why did you do it this way?' Students must be familiar with any potential weaknesses of their methods and be able to discuss the relative merits of potential alternate approaches.
- Students must be able to answer questions based on data generated by others that was included in their thesis.

- Students should be familiar with the important literature cited in their thesis, and should be able to describe the outlines of important relevant papers and the relative contributions of prominent investigators in their field.

DEGREE COMPLETION AND GRADUATION REQUIREMENTS

The University grants degrees in November (Fall) and May/June (Spring) each year. Each candidate for a degree must complete a formal application for graduation. Application forms are available at <https://www.uvic.ca/current-students/home/graduating/>. A graduation fee is assessed at the time of application, and is payable by the end of the month in which the application is made. Deadline dates for graduation and convocation can be verified with the Graduate Admissions and Records Office

<https://www.uvic.ca/graduatestudies/resourcesfor/students/gradreq/index.php>.

The following items will help the student in finalizing their thesis, but it is the responsibility of the student to ensure that all requirements of the Faculty of Graduate Studies have been satisfied including but not necessarily limited to:

- a) Regulations governing the proper submission procedures are set out in the "[Thesis and dissertation format requirements for final submission to the Faculty of Graduate Studies via UVicSpace](#)". Only the latest version of these instructions is valid.
- b) Register for UVicSpace and digitally submit your final thesis. See the [library website](#) for details and guidelines.
- c) Payment of all outstanding fees. Students who have outstanding accounts will not receive a diploma or be issued any transcripts. Students should be especially aware of the minimum program fee for graduate degrees as outlined in the Graduate Studies Calendar. See [Completing your degree requirements](#) on the Faculty of Graduate Studies website for the complete check list.

LEAVE OF ABSENCE

If a leave of absence from your program is required, students should complete a [Graduate Academic Concession form](#), which should be submitted to the BCMB Graduate Secretary, who will forward the form to the Graduate Admissions and Records Officer for approval. Leaves are available to students after completion of a minimum of one term. All courses taken during a period of leave will be dropped- a separate course drop request is not required. Students cannot undertake any form of academic work or use any of the university's resources during a leave. Tuition fees are not assessed during leaves. If the leave is approved, fees already assessed for the relevant term will be reversed.

Parental Leave

Graduate students are able to request a leave of absence from their program for the purposes of parental leave, through completing a [Graduate Academic Concession form](#). It is strongly recommended that you speak to your supervisor and/or the Graduate Advisor about the timing of your parental leave as soon as it is possible for you to do so. There are potential funding sources available to provide some financial support during parental leave, but the amount and the duration of financial support available may depend on the current source(s) of your stipend and/or the funding sources held by your supervisor. To maximise the amount and duration of potential supports available, some arrangements may need to be made to enable this, and thus some advanced discussions with your supervisor/Graduate Advisor (ideally 6

months prior to planned leave, or as soon as possible) is recommended to ensure all possible financial supports are in place.

SAFE WORKING ENVIRONMENT

The Building Safety Committee regularly inspects laboratories, but students are encouraged and required to report any safety concerns either to their supervisor or by bringing it to the attention of the Department's administrative officer. The department is strongly committed to both excellence and equity and to increasing the diversity of perspectives in teaching and research. All students are entitled to a physically and emotionally safe working environment. For details of procedures and expectations please refer to [GV-0205](#) Discrimination and Harassment Policy and [GV-0245](#) Sexualized Violence Prevention and Response Policy. In brief, the Department of Biochemistry and Microbiology does not tolerate harassment. Any student who perceives that they have experienced bullying or any form of harassment is encouraged to seek confidential advice from the Graduate Advisor or Department Chair who can recommend appropriate remedies and/or avenues of redress. Students can also directly approach the [office of Equity and Human Rights](#). In addition, students are free to consult with the Faculty of Graduate Studies on any aspect of their program.

Any student may occasionally have difficulty in coping with lab life. The University of Victoria offers significant [counselling resources](#) to all students.

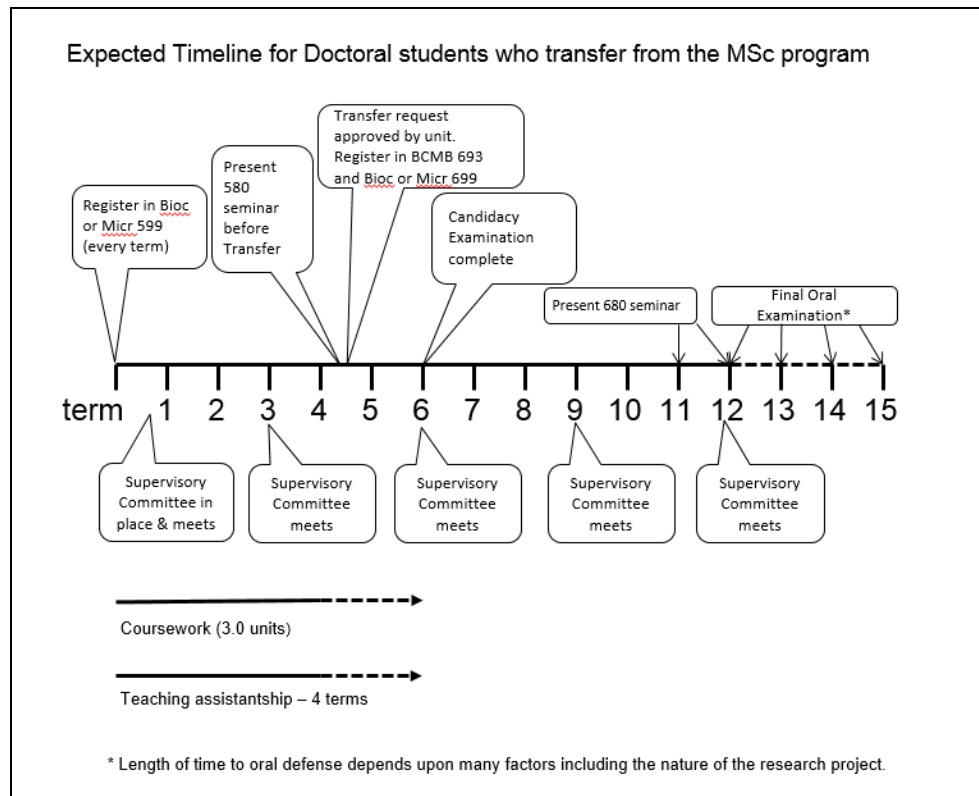
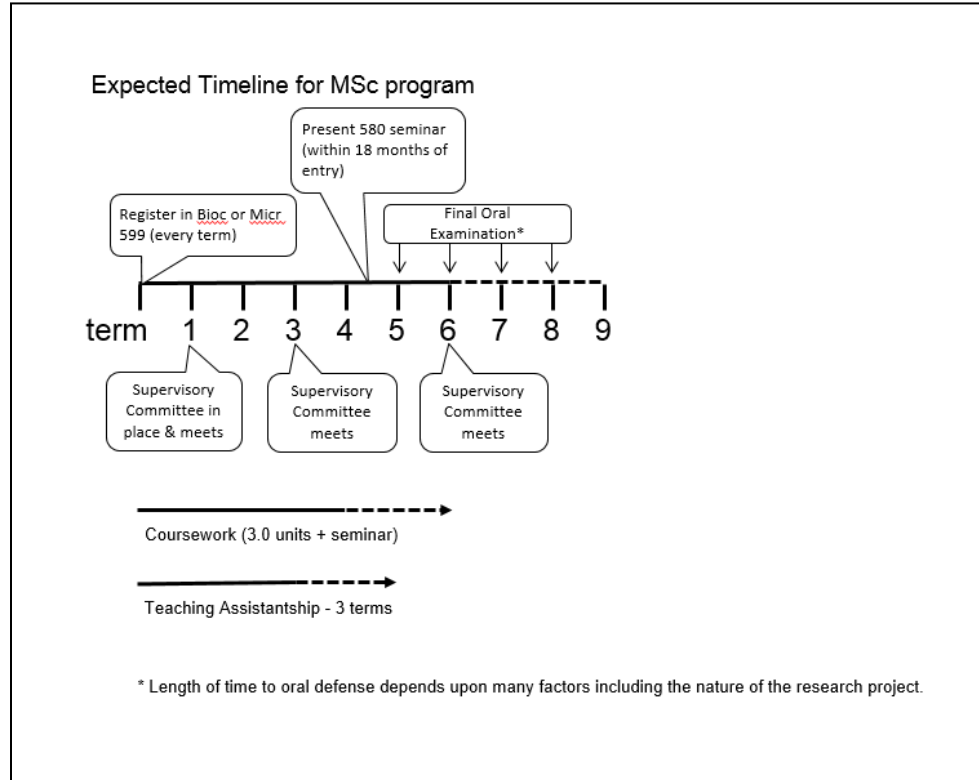
CONFLICT RESOLUTION

Students who encounter situations of conflict or dispute are encouraged to seek confidential assistance from their Supervisor, the Graduate Advisor, or the Departmental Chair to mediate conflict resolution.

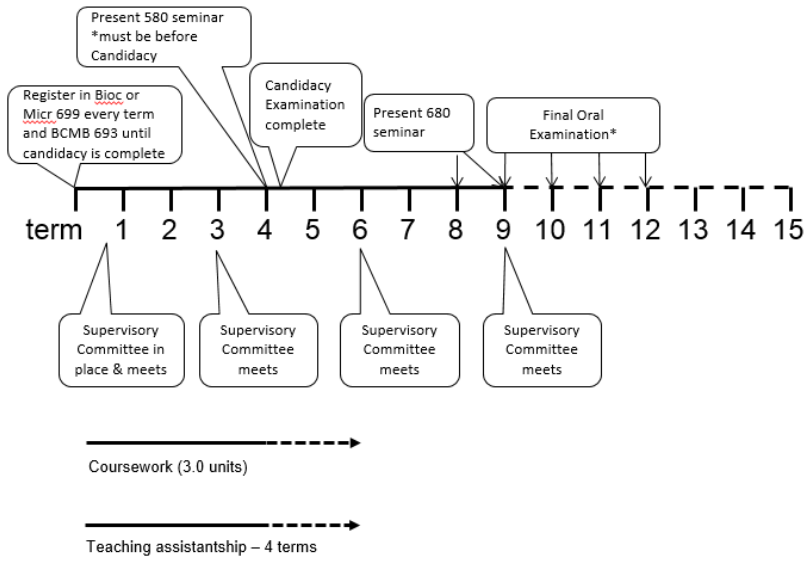
APPEAL AND REDRESS

Students who perceive that they are unjustly treated within the Department are encouraged to seek appropriate avenues of redress or appeal. Both non-academic and academic matters may be brought to the attention of the supervisor, any member of the student's supervisory committee, the Graduate Advisor, or the Department Chair, until appropriate solutions are found.

EXPECTED TIMELINES FOR COMPLETION



Expected Timeline for Doctoral students who enter with a MSc degree



* Length of time to oral defense depends upon many factors including the nature of the research project