

THE UNIVERSITY OF BRITISH COLUMBIA
THE FACULTY OF MEDICINE

Graduate Course Structure in Pharmacology
(<http://apt.med.ubc.ca/pharmacology/programs/graduate-program/>)

1. Admissions

The Department of Anesthesiology, Pharmacology & Therapeutics encourages applications for graduate study from highly qualified students with a background in pharmacology or closely related subjects. Students with a science background but are not exposed to pharmacology are required to take, in their first year of graduate study, an undergraduate pharmacology course offered by the department. If students with no background in science want to apply for graduate study in our department, they are required to take the necessary science courses from a reputed university to prepare them for pharmacology. Such students should contact the Department first to seek recommendations on taking suitable science courses. Upon successful completion of the science courses with at least a B+ average, the Department can consider them for admission. However, during the first year of graduate study, such students are required to take an undergraduate pharmacology course offered by the Department.

Applications meeting the minimal criteria for admission to the Faculty of Graduate Studies will be electronically circulated to faculty by the Graduate Program secretary (Mrs. Wynne Leung) in PDF format in order to identify potential supervisors. In the case of students who have made tentative arrangements with individual supervisors prior to (or during) their application process, the files of these prospective students will be checked for admissibility and circulated to all faculty members for information, with an indication that a tentative supervisory assignment has already been made.

Students entering the Faculty of Graduate Studies at the University of British Columbia with Bachelor's level training are usually admitted to a Master's program, except under exceptional circumstances (see the Graduate Studies web site: www.grad.ubc.ca for details). If students hold a recognized Master's degree, they can be admitted into the Ph.D. stream. However, transfer from a Master's to the Ph.D. program is possible, as outlined in section 6 below.

It is the student's responsibility to find a faculty member who is willing to supervise his/her research. Students are encouraged to become familiar with the sources of financial support, including from UBC, granting agencies like CIHR & NSERC, and prospective supervisors. Graduate students will be entitled to 3 weeks of vacation annually (in addition to statutory holidays and the time between Christmas and New Year's). Specific arrangements regarding the timing of holidays are to be made by agreement between the student and the supervisor.

Appendix A indicates the forms that will be used to establish the terms of the agreement between supervisor and prospective student. As indicated in this form, the supervisor will also be

responsible for providing for resources required to carry out the proposed research, which would include laboratory facilities and materials, as well as the cost of incidentals such as photocopying, printing and computer time.

2. Duration of Study

For M.Sc., it takes about 2-3 years to complete. For the Ph.D. degree, it normally takes 4-5 years to complete.

3. Orientation

At the beginning of each new term, an orientation session will be held for all entering students to outline departmental policies and procedures as they impact them, to make students aware of safety issues in the Department, to familiarize them with the wealth of useful information on the Faculty of Graduate Studies web site, to acquaint them with scholarship and other funding opportunities, etc. Following this “information” session, which will be given by the Graduate Student Advisor and the Graduate Student representative, there will be a social gathering at which new recruits will have the opportunity to meet fellow graduate students already in the program, as well as faculty and departmental staff.

4. First meeting of the student and the supervisor with Graduate Advisor

This meeting will be scheduled within two weeks of the student entering the Graduate Program. At this time, an assessment will be made of the student’s general knowledge of Pharmacology by reviewing prior course work taken by the student in question. All students (M.Sc. or Ph.D.) who have not taken undergraduate pharmacology courses prior to entering graduate studies in the department are expected to take a pharmacology course (recommended by the graduate advisor) in their first year.

5. Supervisory committee meetings

The first supervisory committee meeting is to take place within the first 6-9 months of the student entering the graduate program. However, it is expected that the composition of the supervisory committee will have been established well before this time. For Master’s students, the supervisory committee will consist of the supervisor and at least two other faculty members. For Ph.D. students, the committee will consist of the supervisor and at least two faculty members – at least one committee member must be from outside the Department. In both cases, meetings will include the supervisor and will be chaired by the Graduate Program Advisor (or a designated member of the Graduate Program Committee). Minutes will be taken by the Chair, and these records of the committee’s deliberations will be kept in the student’s file, following sign-off by both supervisor and student. The task of the committee at the first supervisory committee meeting will be to assess the student’s research proposal and identify any courses that might be helpful to the student in acquiring or refining the expertise required to carry out the proposed research. (See later section on graduate courses). At subsequent meetings (held at least yearly), students will submit a progress report (at least 2 weeks before the scheduled meeting) in order that the committee is able to assess the progress in the research project. The format of the

meeting will typically involve an oral presentation outlining the main results and possible problems, followed by a question/discussion period with members of the committee. Again, a record of the committee's deliberations will be taken by the Chair, and kept in the student's file following sign-off by both student and supervisor.

At the second and subsequent meetings, evaluation forms are to be completed by both supervisor and student in order to monitor the effectiveness of the student-supervisor relationship and identify areas of possible improvement. Although individuals may be reluctant to share negative criticisms, there is a need for transparency in this process of mutual assessment – the discussion should be open and frank, and individuals on both sides must be accountable for their written comments on the assessment forms. Sample forms are included in Appendix B.

6. Transfer from M.Sc. to Ph.D.

The Faculty of Graduate Studies policy for admission to the Ph.D. program allows for a transfer from the Master's into the doctoral stream. The requirements for such a transfer are as follows: a bachelor's degree with one year of study in a master's program with 12 credits of first class average, of which 9 credits must be at the 500-level or above and at least 9 credits must be of first class standing. There must also be "clear evidence of research ability or potential". It is further stipulated: "transfer into a doctoral program should be accomplished after the first year of study at the master's level and will not be permitted after completion of the second year". Therefore, in accordance with the Faculty of Graduate Studies policy, the decision to transfer a student from the Master's to the Ph.D. stream would most appropriately be made at the second supervisory committee meeting.

7. Comprehensive examination

The Faculty of Graduate and Post-doctoral Studies (GPS) requires that each Ph.D. student pass a comprehensive examination in her or his discipline. Although GPS has some directives regarding this examination (a detailed section dealing with Comprehensive exams can be found on their web site), departments are given considerable flexibility as to its exact format.

Graduate students in the department of Anesthesiology, Pharmacology & Therapeutics are responsible in ensuring that they take the comprehensive examination within 18 months into their Ph.D. program. Students transferring from a Master's into a Ph.D. program will need to organize the comprehensive examination within 6 months of receiving official approval for the transfer.

The CIHR-type grant application format will be used for writing the proposal for the comprehensive examination. The grant proposal can be in the general area of the student's thesis research but not solely the thesis research itself, and should not be based on a grant previously written by the supervisor. When the topic of the proposal has been selected, a detailed draft should be submitted to the supervisory committee for their approval, to ensure that the student is "on the right track". Students are required to submit the title and a short summary of their "grant proposal" to the departmental graduate program. After receiving the above summary, the departmental graduate program advises the student's supervisor to select an external examiner

from outside the department in consultation with the student's committee. The completed grant proposal should be handed in to the student's examination committee (at least 2 weeks in advance) and the oral component of the comprehensive examination will consist of an oral presentation of the proposal by the student, followed by questioning on areas relevant to the proposed work, and on the student's knowledge of pharmacology & therapeutics. The comprehensive examination committee will consist of the student's supervisory committee (including the supervisor) and the external examiner. The examination, conducted in the oral format, will be chaired by the Graduate Program Advisor (or a member of the departmental Graduate Program Committee). Both the supervisor and the Chair will be allowed to ask questions and also to participate in the voting process. Students will be granted either an unconditional pass, or a conditional pass, with clearly stipulated requirements (such as a written assignment, for example). Students who are unsuccessful in passing the comprehensive examination may have their examination adjourned and can be examined again within a 6-month period. If a student is unsuccessful the second time, he/she will be asked to withdraw from the Ph.D. program.

8. Graduate Courses

Assuming graduate students have an adequate level of general pharmacological knowledge (as discussed in section 4 above) – there will be considerable flexibility in the choice of graduate courses each student should take – so that a mixture of offerings from within and outside the Department can be selected, with input from the supervisor, the supervisory committee and the graduate advisor. The only compulsory courses all students will be required to take are PCTH 514, the Graduate Seminar (see section 9 below) and PCTH 548F (Research Methods in Pharmacology (see section 10 below)). As mentioned in section #4, for students without a background in pharmacology, a departmental undergraduate course recommended by the graduate advisor is compulsory whether student is in the M.Sc. or the Ph.D. program. The selection of graduate courses by Master's students will be guided by the program requirements stipulated by the Faculty of Graduate Studies (see web site) as follows: "The minimum course requirements are 30 credits, of which at least 24 must be numbered 500 to 699. A maximum of 6 credits at the undergraduate level in courses numbered 300 to 499 may be counted toward the requirements of a Master's degree." It should be noted that the 30 credits referred to includes the 12 credits given for the M.Sc. thesis. It should also be noted that the Faculty of Graduate Studies allows M.Sc. students to carry a maximum of 6 credits of undergraduate courses towards the 30-credit requirement. While there are no formal course requirements from the Faculty of Graduate Studies for PhD students, the departmental requirements for compulsory courses are mandatory.

9. PCTH 514 – Graduate Seminar

All graduate students are required to participate in this 1 credit graduate program (by attending the weekly sessions and giving one presentation per year) which will mainly consist of graduate student presentations, but may also include talks by individuals other than graduate students on such topics as "how to give a scientific talk", "tips to effective teaching", "how to write a successful grant", "how to optimally use the reference resources of the library", "opportunities for pharmacologists in the pharmaceutical industry", to mention a few. Faculty members will be expected to attend these sessions to provide constructive feedback to the presenters. For

presentations given by first year students, a topic can be assigned by their research supervisor in their area of research or they can present work done previously or present on a topic they reviewed in literature. It should be noted that all students approaching the completion of their graduate program are required to give a full seminar on their work to members of the Department prior to their M.Sc. or Ph.D. thesis defense.

10. PCTH 548F – Research Methods in Pharmacology, (implemented in 2010W)

Course Structure: Five discrete modules designed to cover aspects of generic research methods common to Pharmacology and Therapeutics. Note that Modules 1 & 3 and 2 & 4 will run concurrently in the Fall and Winter, respectively, but in alternate weeks so that it is possible for students to take both modules at once, if desired. Module 5 is compulsory for ALL students.

11. Two required department forms before thesis submission

i. Thesis Text Approval Form

This form must be signed by all thesis supervisory committee members including the supervisor prior to finalizing the MSc or PhD thesis (Appendix C).

ii. Thesis Submission Approval Form

This form will be signed by Departmental Graduate Advisor or Graduate Secretary and given to the graduate student after the Department receives the duly signed “thesis text approval forms”. A graduate student may then submit the final thesis to G+PS (in the case of Ph.D.) and, through the departmental graduate secretary, to the chairman of the examination committee (in the case of M.Sc.) (Appendix D).

12. Exit Survey

Upon completion of their graduate program, students will be asked to complete a form requesting feedback in a variety of areas, including the process of application, research culture of the Department, curriculum, administration, etc. (see Appendix E).

13. Implementation

The policies and procedures described herein will apply to all incoming students and will be incorporated as soon as practically possible into the programs of our current graduate students – most notably those aspects relating to the timing and format of supervisory committee meetings, the comprehensive examination and minimum stipends. For individuals already in our graduate program, the aim is that within a 12-month period, all will be in compliance with the policies and procedures put forward in this document.

14. Graduate Support Initiative (GSI) Awards

Eligible students will be awarded Graduate Support Initiative (GSI) Awards based on recommendation from the Departmental Graduate Program.

For more information please contact:

Wynne Leung (Mrs.)

Graduate & Undergraduate Secretary of Pharmacology Program

Email: wynne.leung@ubc.ca

Tel: 604-827- 3289

Forms: (also downloadable at website:

<http://apt.med.ubc.ca/pharmacology/programs/graduate-program/>

[Appendix A – Graduate Student Expectations Agreement](#)

[Appendix A – Supervisor Expectations Agreement](#)

[Appendix B: Supervisor/Grad Student Relationship Evaluation – completed by the Supervisor](#)

[Appendix B: Supervisor/Grad Student Relationship Evaluation – completed by the Student](#)

[Appendix C: Thesis Text Approval Form – completed by the student](#)

[Appendix D: Thesis Submission Approval Form – completed by Graduate Advisor or Graduate Secretary](#)

[Appendix E – Exit Survey](#)

Appendix A - Graduate Student Expectations Agreement

Research and experience have shown that a mutual understanding of expectations between students and their supervisors is critical to the success of a graduate program. To facilitate the communication of these expectations, the following list was created, to be read and discussed by both the student and his/her supervisor at the onset of the student's program, to be added to if necessary, and to be initialed by both parties. This list may be re-visited and modified over time as necessary, and a copy should be kept in the student's departmental file.

Students can expect their supervisor to:

- Be committed to their research and educational program, and offer stimulation, respect and consistent encouragement.
- Not assign tasks or research unrelated to their thesis topic except by mutual agreement.
- Be accessible for consultation and discussion of their academic progress and research.
- Establish a supervisory committee that will meet at least once a year to review progress and provide guidance for future work.
- Respond thoroughly and in a timely fashion to submitted written work. (normally 2 weeks)
- Make every effort to ensure that sufficient resources needed for the thesis project are available (including resources for photocopying, printing, computer time, etc.)
- Ensure that the research environment is safe and free from harassment and conflict.
- Help them to be aware of their program requirements, deadlines, etc.
- Encourage students to present their research results within and outside the University.
- Assist them in planning their research program, setting a time frame, and adhering as much as possible to the schedule, and encouraging them to complete their thesis requirements in a timely fashion.
- Acknowledge their contributions, when appropriate, in published material and oral presentations.
- Provide in writing the conditions of employment agreed upon - specifically, the salary to be paid (students **must** receive the **minimum** level of financial support of \$17,500 per year and the duration of the commitment (a minimum of 2 years guaranteed support). Supervisors are encouraged to "top up" the minimum salary scale when possible and as appropriate, depending on performance, seniority, etc. (It should be noted that the difference in salary scales between Master's and Doctoral CIHR traineeship award recipients is \$3,500.)
- Other:

Student

Supervisor

Appendix A - Supervisor Expectations Agreement

Graduate students under my supervision are expected to:

- Be committed and show dedicated effort in gaining the necessary background knowledge and in carrying out their research project.
- Develop, in conjunction with me, a plan and a timetable for completing each stage of the thesis project, and to work assiduously to adhere to a schedule and to meet deadlines.
- Meet with me when requested and to report fully and regularly on progress.
- Give serious consideration to and respond to advice and criticisms received from myself and other members of the supervisory committee.
- Contribute to the maintenance of a workplace that is tidy and safe, and where each individual shows tolerance and respect for the rights of others.
- Be thoughtful and reasonably frugal in using resources.
- Conform to departmental requirements for their program - this includes the student meeting at least yearly with their supervisory committee.
- Meet agreed (specified??) standards and deadlines of the funding organization to the extent possible when financing has been provided under a contract or grant.
- Keep orderly records of their research data and to leave the original records in the lab when they leave UBC.
- Develop a clear understanding concerning ownership of intellectual property (refer to UBC policy on Patents and Licensing, www.policy.ubc.ca/policy88.htm, and the University Industry Liaison Office, www.uilo.ubc.ca)
- Take the required safety training programs (if applicable).
- Apply to the University or to granting agencies for financial awards, if not already done.
- Work at least regular workday hours on their research project after course-work has been completed, with at least 3 weeks vacation annually.
- Other:

Student

Supervisor

Student	Supervisor	Date
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Research Supervisor / Graduate Student Relationship Evaluation

To be completed by the supervisor

UBC and The Department of Anesthesiology, Pharmacology & Therapeutics believe that the quality of a supervisor-student relationship is a critical element affecting graduate education. This form, using statements derived from the Faculty of Graduate Studies guidelines for graduate student research, was devised as a tool to increase communication between supervisors and students, to provide a framework for enhancing the relationship, and to identify problems and exemplary performance.

Please indicate: strongly disagree (SD), disagree (D), uncertain (U), agree (A), strongly agree (SA), not applicable (NA) for each of the items below and provide a brief explanatory note.

1. The student has shown commitment and dedication to gain the background knowledge and skills needed to pursue the research project successfully.
2. The student has worked with me to develop a plan and timetable for completion of all stages of the thesis project.
3. The student adheres to the agreed schedule and meets appropriate deadlines.
4. The student meets with me when requested and reports fully and regularly on progress and results.
5. The student gives a reasoned response to criticism and advice from me and other members of the supervisory committee.
6. The student contributes to the maintenance of a workplace which is tidy, safe and healthy, and where each individual shows tolerance and respect for the rights of others.

7. The student is thoughtful and reasonably frugal in using resources I have provided.
8. The student demonstrates recognition that I and other members of the supervisory committee may have other teaching, research and service obligations that may preclude immediate responses.
9. The student conforms to the strictest standards of honesty in order to assure academic integrity and professionalism in order to assure academic integrity and professionalism, including acknowledging assistance, materials and/or data provided by others
10. The Faculty of Graduate Studies guidelines state that you have the right to expect from your student substantial effort, initiative, respect and receptiveness to suggestions and criticisms. Comment on specific strengths or weaknesses that you have experienced with respect to these expectations.

SUGGESTIONS FOR IMPROVEMENT:

Student's signature

Supervisor's signature

Chair's signature

Student

Supervisor

Date

Research Supervisor / Graduate Student Relationship Evaluation

To be completed by the student

UBC and The Department of Anesthesiology, Pharmacology & Therapeutics believe that the quality of a supervisor-student relationship is a critical element affecting graduate education. This form, using statements derived from the Faculty of Graduate Studies guidelines for graduate student research, was devised as a tool to increase communication between supervisors and students, to provide a framework for enhancing the relationship, and to identify problems and exemplary performance. **Please indicate: strongly disagree (SD), disagree (D), uncertain (U), agree (A), strongly agree (SA), not applicable (NA) for each of the items below and provide a brief explanatory note.**

1. My research supervisor is accessible for consultation and discussion of my academic progress and research.
2. My supervisor responds in a timely and thorough manner to any written work I submit.
3. The research and administrative resources needed for my project are available to me.
4. My research environment is safe, healthy and free from harassment, discrimination and conflict.
5. My supervisor helps me to be aware of my program requirements, deadlines, sources of funding, etc.
6. I am encouraged to make presentations of my results both within the University and to outside scholarly bodies.
7. My supervisor provides me with appropriate guidance with respect to planning and analyzing my research and identifying important goals.

8. My contributions are appropriately credited in publications and presentations.
9. I am encouraged to think and work independently.
10. I do not have problems with my Supervisory Committee (conflicting advice, different expectations, etc.)
11. I am provided with an adequate stipend.

The Faculty of Graduate Studies guidelines state that you have the right to expect reasonable commitment, accessibility, professionalism, stimulation, guidance, respect and consistent encouragement from your supervisor. Please comment on specific strengths or weaknesses that you have experienced with respect to these expectations.

SUGGESTIONS FOR IMPROVEMENT:

Student's signature

Supervisor's signature

Chair's signature

Appendix C –

**GRADUATE STUDIES
DEPARTMENT OF ANESTHESIOLOGY, PHARMACOLOGY &
THERAPEUTICS**

THESIS TEXT APPROVAL FORM

This form must be signed by all supervisory committee members including the thesis supervisor prior to finalizing the MSc or PhD thesis.

NAME OF STUDENT:

DEGREE SOUGHT (MSC OR PHD):

TITLE OF THESIS:

	ACCEPTABLE	NEEDS REVISION
1. INTRODUCTION, HYPOTHESIS, OBJECTIVES & SPECIFIC AIMS		
2. RESEARCH METHODOLOGY		
3. PRESENTATION AND QUALITY OF RESULTS		
4. VALIDITY OF CONCLUSIONS		
5. GENERAL ORGANIZATION AND LITERACY		

COMMENTS (IF REVISIONS ARE RECOMMENDED, PLEASE SPECIFY THEM HERE; ADD ADDITIONAL PAGES, IF NEEDED).

VERIFICATION (PLEASE CHECK ONE BOX)

THIS THESIS IS NOW READY FOR SUBMISSION

THIS THESIS IS NOT READY FOR SUBMISSION UNTIL
REVISIONS ARE MADE

SIGNATURE OF COMMITTEE MEMBER/RESEARCH SUPERVISOR

DATE

IT IS THE STUDENT'S RESPONSIBILITY TO COLLECT THE SIGNED FORMS & RETURN TO MS WYNNE LEUNG'S OFFICE. THE THESIS CAN BE SUBMITTED AFTER THE STUDENT RECEIVES THE "THESIS SUBMISSION APPROVAL FORM" FROM MS LEUNG.

Appendix D –

**GRADUATE STUDIES
DEPARTMENT OF ANESTHESIOLOGY, PHARMACOLOGY & THERAPEUTICS**

Thesis Submission Approval Form

NAME OF STUDENT:

DEGREE SOUGHT (MSC OR PHD):

TITLE OF THESIS:

I HAVE RECEIVED THE SIGNED “Thesis text approval forms” FROM THE SUPERVISORY COMMITTEE MEMBERS AND THE SUPERVISOR. THE THESIS CAN NOW BE SUBMITTED.

SIGNATURE OF GRADUATE ADVISOR/GRADUATE SECRETARY

DATE

COPIES TO: THE GRADUATE STUDENT & THESIS SUPERVISOR.

Appendix E – Exit Survey

Application process	Disagree strongly	Disagree	Uncertain	Agree	Agree strongly	Does not apply
The application package and/or web site gave sufficient information about the program and application process.						
I was able to obtain sufficient information about the research interests of possible supervisors when I needed to choose a supervisor.						
Beginning the program						
When I began, I had a clear understanding of:						
The expectations and roles of the supervisor.						
What was expected of me.						
The program requirements and procedures.						
The resources and facilities available to me.						
Research culture						
The program ensured that:						
Students do not feel isolated.						
I was given opportunities to meet with other students as a group.						

I was given sufficient opportunities to present my research.						
Any conflicts that arose were resolved satisfactorily.						
I have a good knowledge of the careers available to me.						
Curriculum	Disagree	Disagree	Uncertain	Agree	Agree	Does not apply
	strongly			strongly		
The required courses provided an excellent grounding for the field of pharmacology.						
I was able to take elective courses that helped provide me with a significant foundation of knowledge for my field.						
The comprehensive examination was a valuable learning experience.						
My comprehensive exam allowed a fair assessment of my knowledge and research design abilities.						
My final exam was carried out in a fair manner.						
Administration						
My questions and concerns were addressed satisfactorily.						
I had no significant problems with regard to registering, exam scheduling, etc.						

I would highly recommend this program to interested students.						