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# Department of Pathobiology

## Graduate Student Handbook

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This handbook is designed to be a quick reference to important university regulations and as a guideline for information specific to the Department of Pathobiology. **Please note that this document contains many hyperlinks to forms and other reference material.**

**Please report errors, broken hyperlinks or suggested revisions to: [pboerlin@uoguelph.ca](mailto:pboerlin@uoguelph.ca)**

Regulations are indicated in the Graduate Calendar, but some have additional departmental requirements as outlined in this document and the [Pathobiology Department Website](#). In addition, graduate students are responsible for being familiar with:

- University regulations regarding graduate studies and programs are described in the [Graduate Calendar](#). Note that the most up to date version of the calendar is the online version, not the pdf version which is updated only once a year.
- University policies on scientific integrity and ethical principles of research, including regulations concerning use of animals, human subjects, radioactive materials, biohazards, laboratory safety, and client confidentiality.

## Introduction

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The Department of Pathobiology offers graduate training in the PhD, DVSc, MSc and Graduate Diploma programs. Programs are offered in the fields of Comparative Pathology, Veterinary Immunology, Veterinary Infectious Diseases, and Veterinary Pathology. Graduates at the PhD level are expected to be suitable candidates for university faculty positions or for research appointments at a level requiring a high level of independence, initiative, innovation, and responsibility. MSc graduates should be capable of independent contributions to existing research programs. Graduates of the DVSc program should have the knowledge and practical ability required of a specialist in an applied veterinary laboratory or health management discipline, and be well positioned to prepare for discipline-specific certifying examinations.

## Safety and Professional Conduct

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- Environmental Health and Safety provides information and training in Biosafety, Hazardous Materials Management, Hazardous Waste Management, Radiation Safety and Health Physics, etc.
- All graduate students are required to take the following **three** online courses related to workplace safety. See the Environmental Health and Safety [WEBSITE](#) for instructions.
  1. WHMIS (Workplace Hazardous Materials Information System)
  2. Laboratory Safety
  3. Worker Health & Safety Awareness Training
- All students must have a laboratory orientation by their advisor or designate and sign a form indicating that they have done so.
- A joint AHL/Pathobiology Safety Committee, which has members from all employee groups, is there to help if you have any safety questions or concerns. (The chair's office has a list of current members).
- Animal Care Services provides information and training on use of animals in research and teaching. If you are engaged in research involving animals, you are likely required to take the [Animal User Training Program](#), including completion of "Core modules" of online training, Workshops that may be species-specific, and Mentor-facilitated Training in Study-specific Procedures. You must be provided with a copy of the Animal Utilization Protocol for your project.
- License to practice veterinary medicine. Graduate students with clinical duty including clinical or anatomic pathology duty must be licensed by the College of Veterinarians of Ontario to practice veterinary medicine in Ontario. Veterinarians cannot be on the duty roster or have any involvement with clinical case processing unless they have a license, so it is very important that a license is obtained before the start of the program. The CVO phone number is 519-824-5600. Graduate students in Pathobiology normally have an Educational Licence, and the Health Sciences Complex normally reimburses the license fee. The student is responsible for any application and examination fees. The contact person in the Health Sciences Complex is Tanis Comrie: tcomrie@ovc.uoguelph.ca
- Graduate students involved in necropsy duty must receive general orientation and safety training specific for the necropsy room. The advisor is responsible for arranging general orientation and safety training. Safety training specific for necropsy is provided in part by

the designated contact in the Animal Health Laboratory (Dr. Margaret Stalker, x54545, room 2838).

- **Rabies vaccination:** Students who work in the post-mortem room or who otherwise might be exposed to rabies virus must arrange with “Health Services” on campus for vaccination and antibody titre checks. Proof of a protective titre is required before entry to the post-mortem room is permitted.
- **Respirator inspection and annual fit testing,** for students with necropsy duty. Please arrange for this with your Advisor or necropsy room supervisor.
- **Health Sciences Centre (HSC):** students are expected to conform to the [policies of the HSC](#) including those regarding hygiene, [confidentiality of client information and medical records](#), [infection control](#), and acceptable standards of practice of veterinary medicine.
- **Students who are pregnant or have an altered immune competent state** should expect due consideration. These students should contact a physician immediately to obtain recommendations for a plan to minimize exposure to hazards associated with their graduate program. The student should provide to their advisor a signed statement from their physician that defines permitted limits of exposure to possible hazards. Students should inform their advisor as early as possible in order that steps may be taken to assist them in conforming to the plan developed by the physician and to take advantage of available options. All information will be handled in a strictly confidential manner.
- **Important: you must have training and certification before working with animals, biohazards, or radioactive material.**

## Rights and Responsibilities

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- The rights and responsibilities of graduate students, advisors, and advisory committees as well as mechanisms for dispute resolutions are outlined in considerable detail in the [Graduate Calendar](#).
- Students with temporary or permanent disabilities that may affect their graduate program should contact the [Students Accessibility Services \(SAS\)](#) and meet with their advisor, to ensure that appropriate consideration is given.
- **Frequent communication is a key to ensure optimal progress will be made and that you don't run into problems.** Discuss any concerns you have with your advisor and advisory committee and then, if that doesn't work, with the graduate coordinator.
- It is extremely important that all students understand what is meant by plagiarism and other forms of academic misconduct. Submitted work (such as assignments, essays or theses) must not contain plagiarized material, which would include phrases or sentences that are the same as or modified from that in someone else's work. Be sure that your writing is entirely original; do not copy others' phrases or groups of words in your own work. [Turnitin](#) will be used for many courses to check the originality of documents provided by students.
- **Academic Misconduct:** The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the

University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Graduate Calendar:

[https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec\\_d0e2709.shtml](https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e2709.shtml)

Additional information is available on the University website (link to [website](#)), from the [Office of Graduate Studies](#), and in the [Graduate Calendar](#).

- Students beginning their program must enrol in and complete UNIV 7100\*[Academic Integrity for Graduate Students](#).

## **Additional sources of information**

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- [Admissions And Progress Committee: Procedures & Guidelines](#)
- [Graduate Program Coordinator's Handbook](#)
- [A variety of forms from the Office of Graduate Studies](#)
- [Thesis/examination information](#)
- [Courses offered by the Department of Pathobiology](#)
- [Graduate Awards and Financial Assistance](#)
- [Human Rights and Equity Office](#)
- [Student Health Services](#)
- [Counselling Services](#)
- [Mental Health Resources](#)
- [Library and Learning Commons](#)
- [Student Housing](#)
- [Graduate Student's Association](#)
- [Academic staff work assignments \(including Teaching Assistants\)](#)

## **Pathobiology administrative staff**

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- Department Chair: John Lumsden (Room 3839), extension 54453, [jsl@uoguelph.ca](mailto:jsl@uoguelph.ca)
- Graduate Coordinator: Patrick Boerlin (Room 4829), extension 54647, [pboerlin@uoguelph.ca](mailto:pboerlin@uoguelph.ca)
- Graduate Program Assistant: Donna Kangas and Graduate Program Services Team (POP MED, Bldg #174), extension 54725, [pathgrad@uoguelph.ca](mailto:pathgrad@uoguelph.ca)

## Registration

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You are responsible for registering every semester: This is done in two parts.

- PART 1: Use either WebAdvisor or the [ADD and DROP Form](#) to register for:
  - UNIV\*7500 - Research and Writing
  - UNIV\*7510 - Active Full Time, or UNIV\*7520 - Active Part-Time
- PART 2: Your Graduate Settlement, for payment of tuition
  - Payroll Deduction: (The Department will need your banking information to set this up), OR
  - If you have your own funding, you will need to go to Student Financial Services to set up the payment of tuition.
  - For more information or help for Graduate Settlement and payment of tuition, please contact the OVC SAS Administrative Assistant, Human resources (Cathy Bernardi) at [cmbernardi@uoguelph.ca](mailto:cmbernardi@uoguelph.ca) (tel. 54750)

## Advisory committees, committee meetings, and evaluation reports

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All students must have an Advisory Committee that is recruited by the advisor in consultation with the student. The composition of the Advisory Committee is listed in the Graduate Calendar, and is detailed below for each graduate program. This committee, together with the student, will arrange a program of study (i.e. list of courses).

The [Advisory Committee Appointment \(Section A\)](#) and the [Program of Study \(Section B\)](#) must be submitted together to The Office of Graduate Studies before the 20th class day of the student's second registered semester. The student's registration will be blocked if both forms are not submitted. A new form is submitted for revision only. If the committee membership changes, a new Advisory Committee Appointment (Section A only, pages 1-2) must be submitted. An amended Program of Study form must be completed if the program or required courses are changed.

A [Graduate Student Progress Report](#) must be submitted to the Graduate Program Assistant for **every semester**, no later than the 15<sup>th</sup> day of the subsequent semester. Once the Advisor has completed their summary of the advisory meeting, the student will receive a copy of the report and add their own comments if they wish. It is not necessary for graduate students to add comments, unless they wish to do so, but they have to sign the report to demonstrate that they read it. The report is also **signed by all the members of the advisory committee**. A copy of the signed report goes to the Departmental Graduate Program Assistant (Donna Kangas) and if there are concerns, to the Office of Graduate Studies.

An **Advisory Committee meeting** is requested **every semester**. Normally, students should provide a report of progress to the advisory committee in advance of each meeting, and minutes are distributed after the meeting. A [template](#) for the student's report of progress and minutes of the meeting is available, if needed.

## Thesis research plan and graduate seminar course

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All MSc, PhD and DVSc students registered in the department must enrol in and complete the course PABI\*6440 “Graduate Seminar in Pathobiology”. The course coordinators are Drs. G. Wood and J. MacInnes. Please contact them directly for current course requirements.

## Time to completion of the graduate program

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The normal time to completion of the program and the maximum program duration is regulated by the Office of Graduate Studies and is outlined in the Graduate Calendar (see “[Program durations for graduate students](#)”, Table 1). Students who exceed the prescribed maximum registration completion period are required to complete a [Graduate Student Plan of Study](#), which must be approved by each member of the Advisory Committee, the Graduate Program Coordinator, and the Admissions and Progress Committee. If the program is not completed by the end of the maximum program duration, the student will have to submit an [Appeal for Extension of Maximum Program Duration](#) to the Admission and Progress Committee. If you are in a situation where you have to submit a plan of study or an appeal for extension of maximum program duration, please contact the graduate coordinator to discuss the exact procedure to follow. **Beware of deadlines for submission of these documents** (the Admission and Progress Committee meets only once a month to discuss appeals for extension), otherwise you risk to be withdrawn from your graduate program automatically.

**Leave of absence:** Under some circumstances where a student is unable to work on her/his program for an extended period of time a [Leave of absence](#) may be worth considering. Such circumstances may include but are not limited to a maternity leave or a major health/personal issue. A Leave of absence is usually not extended beyond three semesters and all work for the graduate program must be interrupted during that time. For more details, please consult the [graduate calendar](#).

## Degree Regulations and Expectations of MSc Students

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The primary objective of the MSc program is to provide students with training in conceptual and laboratory aspects of research, combined with advanced training in a field of knowledge relating to manifestations, basic mechanisms and host resistance for diseases of vertebrates.

### Milestones and deadlines

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- Semester 1: safety orientation by advisor and/or biosafety officer, online safety courses completion. Register in PABI 6440 Graduate Seminar course, if the course is offered this semester. Complete UNIV \* 7100 Academic Integrity for Graduate Students by the 20th class day.
- Semester 2: form an Advisory Committee and submit an Advisory Committee Appointment (Section A) and Program of Study (Section B) before the 20th class day. Register in PABI 6440 Graduate Seminar course.

- Semester 3: Register in PABI 6440; present thesis proposal to the department.
- Semester 4: Deadline for transfer to PhD program.
- Semester 5 or 6 (approximate): Submit the “Departmental Request for MSc Final Examination” form, at least 8 weeks prior to the date of the final examination. Apply to graduate, if you plan to graduate in the next convocation.
- Semester 6: normal time to completion.

### Admission requirements

Admission requirements are described in the Graduate Calendar, including [general University regulations](#) as well as requirements [specific for the Department](#).

### Advisory Committee

The Advisory Committee must include at least 2 members. It is encouraged that one or more members are from [outside the department](#), and that at least one member other than the advisor are a [regular member](#) of the Graduate Faculty at the University of Guelph. For the required forms and reports, see above ([Advisory committees, committee meetings, and evaluation reports](#)).

Advisory committee members must be Regular members or Associated members of the Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

### Course Requirements

Course requirements: Graduate seminar PABI\* 6440 course (0.5 credits) plus 1.0 credits (2 single weighted graduate courses). Students must maintain a 70 average with no course mark less than 65. Additional requirements may apply for Provisional Students.

### Final examination (Thesis defence)

Arrange the final examination with the Graduate Program Assistant, as follows:

1. At least 8 weeks prior to the date of the examination, complete the “[Departmental Request for MSc Final Examination](#)” form.
2. When the advisory committee has reviewed the thesis, complete the [Examination Request Form](#) which includes the recommendations of the advisory committee.
3. After approval by the advisory committee, submit the thesis at least 14 days (2 weeks) prior to the date of the examination. It is considered acceptable for either the student or the Graduate Program Assistant to submit the thesis to members of the examination committee.

Candidates should note that preparation of the thesis usually takes longer than expected, and a Thesis Completion Calculator is available from the Office of Graduate Studies to estimate the time needed (to download it, use “Thesis completion calculator” on the [university website’s](#) search tool). As the thesis is being written, the candidate should be in regular communication with their advisor and advisory committee, and consult the Graduate Calendar for [general regulations](#) and [formatting and submission requirements](#). Additional information is provided by the Office of Graduate Studies (see “[Thesis Information](#)” and “[MSc Thesis Submission Schedule](#)”).

The final examination committee includes the following:

1. Chair, selected by the department (not a member of the advisory committee, and normally outside of the discipline area). Information on chairing graduate examinations can be found on the Pathobiology [website](#).
2. A member of the advisory committee, normally the Advisor
3. A second member, may or may not be on the Advisory Committee
4. A third member, may not be on the Advisory Committee

It is a departmental expectation that at least one member of the examination committee should be from outside of the department.

All internal members must be Regular Graduate Faculty or Associated Graduate Faculty at the University of Guelph, or be nominated (early enough) for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

#### Time to completion (full time)

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- Normal [completion period](#): 6 semesters
- Maximum program duration: 9 semesters

## Degree Regulations and Expectations of PhD Students

The PhD program is designed primarily for students who aspire to a career involving research on the biology or mechanisms of diseases in vertebrates. The program provides advanced training in conceptual and laboratory aspects of independent research, combined with advanced training in one or more fields of knowledge. The major emphasis is on the generation and critical evaluation of scientific knowledge relating to the causes, mechanisms and/or consequences of diseases affecting a particular species, organ system or biological process or to the understanding of host resistance and basic mechanisms of health or disease in vertebrates. DVM (or equivalent) graduates may obtain some of the practical experience required for specialty certification in veterinary anatomic pathology, clinical pathology, laboratory animal science, microbiology or parasitology.

### Milestones and deadlines for PhD students having completed an MSc

- Semester 1: safety orientation by advisor and/or biosafety officer, online safety courses completion. Register in PABI 6440 Graduate Seminar course, if the course is offered this semester.
- Semester 2: form an Advisory Committee and submit an Advisory Committee Appointment (Section A) and Program of Study (Section B) before the 20th class day. Register in PABI 6440 Graduate Seminar course. Identify the general area of study, for the qualifying examination.
- Semester 3: Register in PABI 6440; present thesis proposal to the department.
- Semester 4 (approximate): Submit the “Request for PhD Qualifying Examination Form”.
- Semester 5: Qualifying examination.
- Semester 6-9: Present the PhD seminar to the department.
- Semester 11 or 12 (approximate): submit the “Departmental Request for PhD Final Examination” form and the “Nomination of External Examiner” form, at least 8 weeks prior to the date of the final examination. Apply to graduate, if you plan to graduate in the next convocation.
- Semester 12: normal time to completion.

### Milestones and deadlines for PhD students, direct entry or transfer from MSc

- Semester 1: safety orientation by advisor and/or biosafety officer, WHMIS training. Complete UNIV \* 7100 Academic Integrity for Graduate Students by the 20th class day. Register in PABI 6440 Graduate Seminar course, if the course is offered this semester.
- Semester 2: form an Advisory Committee and submit an Advisory Committee Appointment (Section A) and Program of Study (Section B) before the 20th class day. Register in PABI 6440 Graduate Seminar course. Identify the general area of study, for the qualifying exam.
- Semester 3: Register in PABI 6440; present thesis proposal to the department.
- Semester 6 (approximate): Submit the “Request for PhD Qualifying Examination Form”.

- Semester 7: Qualifying examination.
- Semester 6-9: Present the PhD seminar to the department.
- Semester 15 or 16 (approximate): submit the “Departmental Request for PhD Final Examination” form and the “Nomination of External Examiner” form, at least 8 weeks prior to the date of the final examination. Apply to graduate, if you plan to graduate in the next convocation.
- Semester 16: normal time to completion.

### Admission requirements

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Admission requirements are described in the Graduate Calendar, including [general University regulations](#) as well as requirements [specific for the Department](#). Note that the deadline to apply for transfer from the MSc to PhD must be made between the end of the second semester and the end of the fourth semester.

### Advisory Committee

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The Advisory Committee must include at least 3 members. It is recommended that one or more members are from outside the department, and that at least one member other than the advisor are a regular member of the Graduate Faculty at the University of Guelph. For the required forms and reports, see above ([Advisory committees, committee meetings, and evaluation reports](#)).

Advisory committee members must be Regular members or Associated members of the Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

### Course Requirements

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Students must successfully complete the department's graduate seminar course, PABI\*6440. There are no other specific course requirements, although one or two additional courses are usually taken. Students must maintain a 70 average with no course mark less than 65. Additional requirements may apply for Provisional Students.

### PhD qualifying examination

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Students are required to satisfactorily complete a qualifying examination before the end of the fifth semester if they possess an MSc degree (or equivalent such as an MPH), or before the end of the seventh semester if they possess an honours baccalaureate or DVM degree (eg., transferred from an MSc).

By the end of the second semester of the PhD program, the student and the Advisory Committee will identify one “General area” for which a broad understanding is expected. No more than two “Specific areas”, for which current and in-depth understanding is required, are identified either at the same time, or later in the program. The usual practice is not for students to devote extended periods of time solely for preparation for the qualifying examination, and instead this preparation should take place from the beginning of the graduate program, concurrent with their other responsibilities.

The “[Request for PhD Qualifying Examination Form](#)” must be submitted three months prior to the

date of the qualifying examination, to ensure that the composition of the exam committee, the topic areas, and the advice to the student are available in a timely manner.

The purpose of the PhD Qualifying Examination is to assess whether the student has met the Departmental standards required for candidacy for the PhD degree. To succeed in the qualifying examination, students must demonstrate:

1. a working knowledge of the breadth of information which is basic to the major field of study
2. an in-depth understanding of specific area(s) relevant to their project and program
3. the ability to integrate material from his/her studies, and
4. the ability to find and use scientific information to solve problems.

The examination committee includes the Department Chair or designate who is the chair of the examination, two advisory committee members (one is normally the advisor), and two members of the Graduate Faculty who are not members of the student's advisory committee. Normally, at least one of the examiners will be from outside of the department; that person may be a member of the advisory committee. Information on chairing graduate examinations can be found on the Pathobiology [website](#).

All members of the qualifying examination committee must be Regular Graduate Faculty or Associated Graduate Faculty at the University of Guelph.

Each examiner should provide verbal and **written** advice that clarifies the topic area and scope of their area of the examination. This advice must be provided to the student in writing, such as by email, and copied to the Graduate Coordinator and to the Chair of the examination, **no later than 2 months** before the examination. This advice may, for example, take the form of a list of topic areas, one or more specific aspects of the discipline area, or a reading list that is developed by the examiner and/or the student. If a list of topics is given, it is up to the candidate to research those topics.

The PhD qualifying examination in the Dept. of Pathobiology has three parts:

1. The student's demonstrated ability and promise in research which is judged on the basis of a letter from the Advisory Committee.
2. A written "closed book" examination that can be answered in 8 hours or less without access to any outside material. Students normally answer one of two or more questions from each examiner.
3. An oral examination is held one week after completion of the written portion. Typically, there is one round of questions with 20 minutes per examiner, followed by a shorter second round. Questions are not limited to those in the written part of the examination, but may cover any topic in the agreed upon areas.

The student is deemed to have passed the qualifying examination if not more than one of the examiners votes negatively. If unsuccessful, the student may be given a second opportunity to take the examination, but this must be done within 6 months of the first attempt. Failure on the second attempt will result in a recommendation that the student be requested to withdraw from the program.

## Seminar to the department

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PhD candidates are required to present a 45 to 50 minute seminar, between the 6<sup>th</sup> and 9<sup>th</sup> semesters of the program. Students who have transferred directly from an MSc or DVSc into the PhD program should aim to present the seminar between the 6<sup>th</sup> and 9<sup>th</sup> semesters, but in some circumstances this can be delayed until the 10<sup>th</sup> or 11<sup>th</sup> semester. It is important that the seminar is given well before the final examination / thesis defence. The seminar will give a brief overview of the research field followed by a presentation and discussion of the student's research activities to date. After the seminar the student will address questions from the audience.

## Final examination (Thesis defence)

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Arrange the final examination with the Graduate Program Assistant, as follows:

1. At least 8 weeks prior to the date of the examination, complete the “[Departmental Request for PhD Final Examination](#)” form and the “[Nomination of External Examiner](#)” form.
2. When the advisory committee has reviewed the thesis, complete the [Examination Request Form](#) which includes the recommendations of the advisory committee.
3. After approval by the advisory committee, submit the thesis at least 28 days (4 weeks) prior to the date of the examination. The student must submit the thesis to the Graduate Program Assistant, who forwards it to the external examiner. Contact between the student or Advisor and the external examiner must be avoided, before the examination. It is considered acceptable for either the student or the Graduate Program Assistant to submit the thesis to other members of the examination committee.
4. Provide the candidate's CV information to the Graduate Program Assistant, at least 3 weeks prior to the examination.
5. The Graduate Program Assistant completes the [Doctoral Final Examination Arrangements Form](#) at least 14 days prior to the date of the examination.

Candidates should note that preparation of the thesis usually takes longer than expected, and a Thesis Completion Calculator is available from the Office of Graduate Studies to estimate the time needed (to download it, use “Thesis completion calculator” on the [university website's](#) search tool). As the thesis is being written, the candidate should be in regular communication with their advisor and advisory committee, and consult the Graduate Calendar for [general regulations](#) and [formatting and submission requirements](#). Additional information is provided by the Office of Graduate Studies (see “[Thesis Information](#)” and “[Doctoral Thesis Submission Schedule](#)”).

The final examination committee includes the following members:

1. Chair, selected by the department (not a member of the advisory committee, and normally outside of the discipline area). Information on chairing graduate examinations can be found on the Pathobiology [website](#).
2. External examiner
  - a. There must not be a conflict of interest between the advisor and the external examiner, as defined in the [Graduate Calendar](#), and the external examiner must not have been a student or member of the Graduate Faculty at the University in the last five years.
  - b. Any individual who serves as an External Examiner may not serve again until a period of 3 years has passed. The Graduate Program Assistant has access to a list of

ineligible external examiners.

- c. The advisor nominates three external examiners, using the [Nomination of External Examiner Form](#).
3. Member of the Graduate Faculty not on advisory committee
4. A member of the advisory committee
5. A second member of the advisory committee, normally the advisor

In addition, it is a departmental expectation that at least one member of the examination committee should be from outside of the department.

All internal members must be Regular Graduate Faculty or Associated Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

#### Time to completion (full time)

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- Normal [completion period](#): 12 semesters for students with an MSc; 16 semesters for students entering directly from BSc/DVM program or transferring from an MSc program.
- Maximum program duration: 18 semesters for students with an MSc; 22 semesters for students entering directly from BSc/DVM program or transferring from an MSc program.

## Degree Regulations and Expectations of DVSc Students

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The Department of Pathobiology participates in the DVSc program which provides advanced training in a specialty discipline of veterinary medicine, combined with course work and a thesis-based research project. Specialty training is offered in the areas of veterinary anatomic pathology, veterinary clinical pathology, veterinary clinical microbiology, laboratory animal science, wildlife and zoo animal medicine and pathology, avian medicine and pathology, and fish pathology. The DVSc program provides practical training towards specialty certification in veterinary anatomic pathology, veterinary clinical pathology, laboratory animal science, veterinary clinical microbiology or veterinary parasitology. The research project addresses an important disease problem in vertebrates. The research project is an essential component of the DVSc program, and is expected that the student will engage in the research project early in the program.

### Milestones and deadlines

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- Semester 1: safety orientation by advisor and/or biosafety officer, online safety courses completion. Register in PABI 6440 Graduate Seminar course, if the course is offered this semester. Complete UNIV \* 7100 Academic Integrity for Graduate Students by the 20th class day.
- Semester 2: form an Advisory Committee and submit an Advisory Committee Appointment (Section A) and Program of Study (Section B) before the 20th class day. Register in PABI 6440 Graduate Seminar course. Identify the general area of study, for the qualifying exam.
- Semester 3: Register in PABI 6440; present thesis proposal to the department.
- Semester 4: Deadline to apply for transfer to PhD.
- Semester 5 (approximate): Submit the “Request for DVSc Qualifying Examination Form”.
- Semester 6: Qualifying examination.
- Semester 8 or 9 (approximate): submit the “Departmental Request for DVSc Final Examination” form and the “Nomination of External Examiner” form, at least 8 weeks prior to the date of the final examination. Apply to graduate, if you plan to graduate in the next convocation.
- Semester 9: normal time to completion.

### Admission requirements

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Admission requirements are described in the Graduate Calendar, including [general University regulations](#) as well as requirements [specific for the Department](#).

### Advisory Committee

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The Advisory Committee must include at least 3 members. One or more members must be from outside the department, and at least one member other than the advisor should be a regular member

of the Graduate Faculty at the University of Guelph. For the required forms and reports, see above ([Advisory committees, committee meetings, and evaluation reports](#)).

Advisory committee members must be Regular members or Associated members of the Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

### Course Requirements

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Course requirements: Graduate seminar PABI\* 6440 course (0.5 credits) plus 2.0 additional credits (4 single weighted graduate courses). No more than 1.0 credits may be in Special Topics courses. Students must maintain a 70 average with no course mark less than 65. Additional requirements may apply for Provisional Students.

### DVSc qualifying examination

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Students are required to satisfactorily complete a qualifying examination before the end of the sixth semester. The DVSc qualifying examination is run by the Department, but the examination committee is appointed by the Interdepartmental DVSc Program Committee.

The qualifying examination will primarily assess the student's knowledge of the area of specialization, the student's area of research, and to a lesser extent, the basic sciences supporting these areas. The student's ability to integrate and apply knowledge is also assessed. In addition, the examination committee will take into account a written submission from the student's advisory committee regarding the quality of the student's applied skills and performance to date in the program.

By the end of the second semester of the DVSc program, the student and the Advisory Committee will identify one "General area" for which a broad understanding is expected. This normally represents the breadth of the student's discipline area. No more than two "Specific areas", for which current and in-depth understanding is required, are identified either at the same time, or later in the program. The usual practice is not for students to devote extended periods of time solely for preparation for the qualifying examination, and instead this preparation should take place from the beginning of the graduate program, concurrent with their other responsibilities.

The "[Request for DVSc Qualifying Examination Form](#)" must be submitted three months prior to the date of the qualifying examination, to ensure that the composition of the exam committee, the topic areas, and the reading list are available to the student in a timely manner.

The examination committee includes the Department Chair or designate who is the chair of the examination, two advisory committee members (one is normally the advisor), and two members of the Graduate Faculty who are not members of the student's advisory committee. One of the examiners who are not on the advisory committee must be regular graduate faculty in the Department of Pathobiology. Information on chairing graduate examinations can be found on the Pathobiology [website](#).

All members of the qualifying examination committee must be Regular Graduate Faculty or Associated Graduate Faculty at the University of Guelph.

Each examiner should provide verbal and **written** advice that clarifies the topic area and scope of their area of the examination. This advice must be provided to the student in writing, such as by

email, and copied to the Graduate Coordinator and to the Chair of the examination, no later than 2 months before the examination. This advice may, for example, take the form of a list of topic areas, one or more specific aspects of the discipline area, or a reading list that is developed by the examiner and/or the student. If a list of topics is given, it is up to the candidate to research those topics.

The DVSc qualifying examination in the Department of Pathobiology has three parts:

1. The student's demonstrated ability and promise in research which is judged on the basis of a letter from the Advisory Committee.
2. A written "closed book" examination that can be answered in 8 hours or less without access to any outside material. Students normally answer one of two or more questions from each examiner.
3. An oral examination is held one week after completion of the written portion. Typically, there is one round of questions with 15 or 20 minutes per examiner, followed by a shorter second round. Questions are not limited to those in the written part of the examination, but may cover any topic in the agreed upon areas.

The student is deemed to have passed the qualifying examination if not more than one of the examiners votes negatively. If unsuccessful, the student may be given a second opportunity to take the examination, but this must be done within 6 months of the first attempt. Failure on the second attempt will result in a recommendation that the student be requested to withdraw from the program.

#### DVSc Final examination (Thesis defence)

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Arrange the final examination with the Graduate Program Assistant, as follows:

1. At least 8 weeks prior to the date of the examination, complete the "[Departmental Request for DVSc Final Examination](#)" form and the "[Nomination of External Examiner](#)" form.
2. When the advisory committee has reviewed the thesis, complete the [Examination Request Form](#) which includes the recommendations of the advisory committee.
3. After approval by the advisory committee, submit the thesis at least 28 days (4 weeks) prior to the date of the examination. The student must submit the thesis to the Graduate Program Assistant, who forwards it to the external examiner. Contact between the student and the external examiner must be avoided, before the examination. It is considered acceptable for either the student or the Graduate Program Assistant to submit the thesis to other members of the examination committee.
4. Provide the candidate's CV information to the Graduate Program Assistant, at least 3 weeks prior to the examination.
5. The Graduate Program Assistant completes the [Doctoral Final Examination Arrangements Form](#) at least 14 days prior to the date of the examination.

Candidates should note that preparation of the thesis usually takes longer than expected, and a Thesis Completion Calculator is available from the Office of Graduate Studies to estimate the time needed (to download it, use "Thesis completion calculator" on the [university website's](#) search tool). As the thesis is being written, the candidate should be in regular communication with their advisor and advisory committee, and consult the Graduate Calendar for [general regulations](#) and

[formatting and submission requirements](#). Additional information is provided by the Office of Graduate Studies (see “[Thesis Information](#)” and “[Thesis Submission Schedule](#)”).

The final examination committee includes the following members:

1. Chair, selected by the department (not a member of the advisory committee, and normally outside of the discipline area). Information on chairing graduate examinations can be found on the Pathobiology [website](#).
2. External examiner
  - a. There must not be a conflict of interest between the advisor and the external examiner, as defined in the [Graduate Calendar](#), and the external examiner must not have been a student or member of the graduate faculty at the University in the last five years.
  - b. Any individual who serves as an External Examiner may not serve again until a period of 3 years has passed. The Graduate Program Assistant has access to a list of ineligible external examiners.
  - c. The advisor nominates three external examiners, using the Nomination of [External Examiner Form](#).
3. Member of the Graduate Faculty not on advisory committee
4. A member of the advisory committee
5. A second member of the advisory committee, normally the advisor

All internal members must be Regular Graduate Faculty or Associated Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

#### Time to completion (full time)

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- Normal [completion period](#): 9 semesters
- Maximum program duration: 12 semesters

## Degree Regulations and Expectations of Diploma Students

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The objective of the diploma program is to provide advanced practical training in a field of veterinary pathology to veterinarians working in industry, government or in private practice. The program emphasizes practical and course-based applied training in anatomic pathology, clinical pathology, avian medicine and pathology, laboratory animal science, or wildlife and zoo animal pathology. The Diploma program does not normally result in eligibility for specialty certification.

### Milestones and deadlines

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- Semester 1: safety orientation by advisor and/or biosafety officer, online safety courses completion. Complete UNIV \* 7100 Academic Integrity for Graduate Students by the 20th class day.
- Semester 2: form an Advisory Committee and submit an Advisory Committee Appointment (Section A) and Program of Study (Section B) before the 20th class day.
- Semester 2 or 3: submit the “Departmental Request for Graduate Diploma Final Examination” form, at least 6 weeks prior to the date of the final examination. Apply to graduate, if you plan to graduate in the next convocation.
- Semester 3: normal time to completion.

### Admission requirements

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Admission requirements are described in the Graduate Calendar, including [general University regulations](#) and [specific degree regulations](#) as well as requirements [specific for the Department](#).

### Advisory Committee

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The advisory committee must include at least 2 members. For the required forms and reports, see above ([Advisory committees, committee meetings, and evaluation reports](#)).

Advisory committee members must be Regular members or Associated members of the Graduate Faculty at the University of Guelph, or be nominated for this specific task as Special Graduate Faculty using the [Graduate Faculty Nomination Form](#).

### Course Requirements

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Course requirements: The diploma requires three semesters of full time study, and satisfactory completion of at least 1.5 credits in applied pathology courses and 0.5 credits in other graduate courses. Diploma students are not required to take the Graduate seminar PABI\* 6440 course. Students must maintain a 70 average with no course mark less than 65. Additional requirements may apply for Provisional Students.

### Final examination

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Diploma students must satisfactorily pass a final oral comprehensive examination on general knowledge in the field of study. It will be conducted by faculty members in the Department of Pathobiology. There is no thesis, but students are required to write a paper such as a case report that the advisor considers ready for submission to a peer reviewed scientific journal.

At least 6 weeks prior to the date of the examination, complete the “[Departmental Request for Graduate Diploma Final Examination](#)” form. Information on chairing graduate examinations can be found on the Pathobiology [website](#).

Time to completion (full time)

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- Normal completion period: 3 full time semesters

## Theses

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Students should consult with their advisory committee regarding the expected style and format of the thesis, as well as information provided by the [Office of Graduate Studies](#). Since the thesis research (in part or in whole) should be published, it is advisable to write the thesis in chapters which correspond to a selected “journal format” if possible. The thesis still requires an Introduction, a detailed Review of the Literature, and a General Discussion. It is recommended that the references be collected into a single reference section and that citations be placed in the text. Particularly if the “paper format” is used for the thesis, particular attention should be paid to the attribution of work done by others. Such contributions should be clearly indicated in a “A Declaration of Work Done” which should appear on the page immediately after the Abstract.

## Departmental activities

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### Departmental Seminars and Journal Clubs

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Students are expected to attend at least the majority of Departmental seminars. In addition to their thesis proposal and their final examination/defence, PhD candidates are also required to present a seminar to the Department before the end of their 9<sup>th</sup> semester. Students are also expected to actively participate in relevant journal clubs and research group meetings. Contributions to both formal and informal academic exchanges are considered to be manifestations of scholarly maturity, and graduate students are encouraged to regard these types of activity as an important part of their education program.

### Attendance at oral examinations and thesis defences

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Qualifying examinations and thesis defences are open to all members of the University. Students are encouraged to attend these examinations and defences, especially those related to their own area of study.

### Publication

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The graduate research projects of MSc and DVSc students are expected to produce sufficient data for presentation at one or more meetings and for the publication of at least one peer-reviewed paper. Research done by PhD students should usually be sufficient for several peer-reviewed manuscripts. Normally, the student is the first author on at least one manuscript, with the advisor and possibly others as co-authors. It is the student’s responsibility to draft the paper or meeting abstract and to make sure that all coauthors have approved its content before it is submitted.

Students are encouraged to collaborate with other researchers on non-thesis work with the expressed approval of the advisory committee.

## Financial support

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### Stipends

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Except in very extraordinary cases, MSc students are guaranteed support for 6 semesters and PhD/DVSc students for 9. Support for longer periods is at the discretion of the advisor and subject to the receipt of funds from sponsoring agencies. The recommended minimum stipend is \$16,500 for MSc and \$19,000 for PhD). Stipend support may be from fellowships, scholarships, or grants held by the advisor, or students may be supported independently by government agencies, grants, or employers. Some graduate students are self-supported, and documentation of adequate financial resources must be provided to the department prior to acceptance into the program.

### Teaching assistantships (TA)

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Graduate students should discuss the advisability of undertaking a TA position with their Advisor/Advisory Committee.

Some useful resources for teaching can be found on the UofG Open Education and Learning Support (Open Ed)

Open Education and Learning Support ([Open Ed](#)) offers a number of resources to support graduate students and in their [Graduate Student Development webpage](#). They can also be contacted for more information by email at: [gtc@uoguelph.ca](mailto:gtc@uoguelph.ca). Finally, [The Ultimate TA Guide](#) will give you plenty of useful advice and ideas to prepare for your teaching experience. However, don't forget that [the Course Coordinator is the definitive ultimate guide for your specific teaching assignment](#).

### OVC Awards

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Awards are listed in the [Graduate Calendar](#), although specific awards offered vary from year to year. There is a wide range of awards; some are ACCESS awards that take into consideration financial need. Some awards are very narrowly targeted, so the odds of success can be comparatively high. The deadlines for these awards may vary from year to year and you should be on the look for these and other scholarships/fellowships on the [OVC Research Webpage](#) and for email notifications from the Graduate Program Assistant.

### External awards

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Students are **strongly** encouraged to apply for both [external and internal awards](#). Remember to give your referees at least one week to prepare a letter of reference.

The major external awards that Pathobiology Students most often apply for are:

1. Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarships ([NSERC-PGS](#))
  - a. must be Canadians or permanent residents and have at least an 'A-' average (first-class standing) in each of the last two years of full-time study
  - b. must have completed more than 12 months of graduate studies at time of application
2. Ontario Graduate Scholarships ([OGS](#))
  - a. Canadians or permanent residents plus some awards for visa students

- b. Must have a first-class (A-) standing in each of the last two years of full-time study
- 3. [Canadian Institute of Health Research](#)
  - a. must be a Canadian citizen or a permanent resident
  - b. must have been registered for no more than ten months
  - c. persons with a health professional degree are eligible to apply for a post doctoral fellowship but not to both in the same year (i.e., September through August). program.
- 4. [University wide internal sources](#)
  - a. Wide range of awards; some are ACCESS awards that take into consideration financial need.

## **Resources for graduate students**

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- The [Library at the University of Guelph](#) and the [Graduate Student Learning Initiative \(GSLI\)](#) offer a variety of information, workshops and short courses on:
  - [Writing skills](#) including general writing skills, organization and effective presentation of ideas, writing skills focused on thesis preparation, and writing skills for students for whom English is a second language.
  - Handouts and fact sheets on use of references; grammar and writing style; writing literature reviews, scientific manuscripts and theses ([link](#)).
  - An overview of writing for scientific communication ([link](#)).
  - [Reading](#) critically and reading large volumes of material, [time management](#), [presentation skills](#).
  - The library has an “English as a Second Language/ Additional Language (ESL/EAL) Specialist” to assist students for whom English is not a first language. Students can make individual appointments or sign up for the variety of workshops offered to meet their needs. Contact [Writing and Learning Services](#), [Learning Commons](#), [McLaughlin Library](#).
- References on writing style and preparation of scientific manuscripts
  - How to write and publish a scientific paper. 7<sup>th</sup> edition, (2011) Robert A. Day and Barbara Gastel, Greenwood/ABC-CLIO, LLC (also available as e-book).
  - ASM Style Manual (1991) ASM Press and others
  - Instructions to authors for many journals can contain a lot of useful information
- Scientific Integrity. An Introductory Text with Cases in Responsible Conduct of Research. Macrina, F.L. (2014, 4<sup>th</sup> edition) ASM Press: Washington, DC
- At the Bench: A Laboratory Navigator, Updated Edition, Kathy Barker (2005) Cold Spring Harbor Laboratory Press

## **List of updates of this document**

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17/October 2016 / 14 October 2016 / 1 September 2015 / 16 October 2012 / 28 September 2012 / 29 September 2012.

## **Graduate students: confirmation of having read the handbook**

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It is required that all graduate students in the Department of Pathobiology read and understand the contents of the *Pathobiology Graduate Student Handbook*. Please confirm that you have finished this task by completing the form below, and submitting this form to the Graduate Program Assistant, Donna Kangas.

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I have read and understand the contents of the Pathobiology Graduate Student Handbook.

The date of last revision for this version of the Handbook (listed after the table of contents) was October 14<sup>th</sup> 2016.

**Graduate student's printed name:** \_\_\_\_\_.

**Signature:** \_\_\_\_\_.

**Date:** \_\_\_\_\_.