



Department of Laboratory Medicine & Pathology

GRADUATE PROGRAM HANDBOOK

2022/23
(revised January)

Dear Applicants, Graduate Students, Faculty Members and Supervisors:

The Department of Laboratory Medicine & Pathology (LMP) graduate studies program is proud to offer its students a multidisciplinary research environment where collaborations between clinical and basic research faculty promote creativity and a desire for excellence. This positive environment for scientific inquiry is supported by modern research laboratories and state-of-the-art instrumentation and resources.

This Handbook brings together guidelines and information to assist both current and prospective students as well as supervisors with the planning and management of graduate training in Laboratory Medicine & Pathology.

I hope the Handbook will serve as a valuable resource for you, but please do not hesitate to contact the LMP graduate studies office directly at any time should you have concerns or questions.

Sincerely,

Jelena Holovati, PhD
Associate Professor | Director, Graduate Studies

Table of Contents

1	GRADUATE STUDIES PROGRAM	1
1.1	Vision, Mission, and Values	1
1.2	Overview	1
2	APPLICATION AND ADMISSION	3
2.1	Requirements	4
2.1.1	<i>Academic Requirements</i>	4
2.1.2	<i>Language Requirement</i>	4
2.2	Identification of Supervisor	4
2.3	Application and Supporting Documents	5
2.3.1	<i>Application Deadlines</i>	5
2.3.2	<i>Supporting Documents</i>	5
2.4	Admission Decision	6
3	GUIDELINES AND RESPONSIBILITIES	7
3.1	Graduate Students	7
3.1.1	<i>Good Standing Policy</i>	7
3.1.2	<i>Vacation</i>	7
3.2	Conflict of Interest Guidelines	7
3.3	Graduate Student Supervisors	7
3.3.1	<i>Qualifications of Supervisor</i>	7
3.3.2	<i>Multiple Supervisors</i>	8
3.3.3	<i>Graduate Student Supervisor Responsibilities</i>	8
3.4	Graduate Student Supervisory Committee	10
3.4.1	<i>Qualification of Supervisory Committee Members</i>	10
3.4.2	<i>Graduate Student Supervisory Committee Responsibilities</i>	10
3.5	Graduate Studies Director	10
3.6	Graduate Studies Committee	12
3.7	Graduate Student Financial Support and Awards	12
3.8	Student Concerns	14
3.8.1	<i>Coursework Complaints</i>	14
3.8.2	<i>Student/Supervisor Conflicts</i>	14
4	MASTER'S PROGRAM	15
4.1	Time Limits for Program Requirements and Completion (MSc)	15
4.2	Registration Requirement	16
4.3	General Degree and Specialization	16
4.4	Required Coursework (MSc)	16
4.4.1	<i>Academic Standing and Grades</i>	17

4.5	Research and Thesis (MSc)	17
4.5.1	<i>Research Laboratory Safety</i>	17
4.6	Ethics Requirement	17
4.7	Presentation/Seminar Attendance Requirement (MSc)	18
4.8	Professional Development Requirement	18
4.9	Supervisory Committee Meetings (MSc)	19
4.10	Final Examination	19
4.11	MSc Program Timeline Chart	20
5	DOCTORAL PROGRAM	21
5.1	Time Limits for Program Requirements and Completion (PhD)	22
5.2	Registration Requirement	22
5.3	General Degree and Specialization	22
5.4	Required Coursework (PhD)	22
5.4.1	<i>Academic Standing and Grades</i>	23
5.5	Research and Thesis (PhD)	23
5.5.1	<i>Research Laboratory Safety</i>	24
5.6	Ethics Requirement	24
5.7	Presentation/Seminar Attendance Requirement (PhD)	24
5.8	Professional Development Requirement	25
5.9	Supervisory Committee Meetings (PhD)	25
5.10	PhD Proposal	26
5.10.1	<i>PhD Proposal Requirements</i>	26
5.10.2	<i>PhD Proposal</i>	26
5.10.3	<i>The PhD Proposal Package</i>	26
5.10.4	<i>Assessment of the PhD Proposal Package</i>	27
5.11	Candidacy Examination	28
5.11.1	<i>Purpose of Candidacy Examination</i>	28
5.11.2	<i>Timelines</i>	28
5.11.3	<i>Composition and Roles of the Candidacy Examining Committee</i>	29
5.11.4	<i>Candidacy Examination Document</i>	30
5.11.5	<i>Format of Examination</i>	30
5.11.6	<i>Evaluation Criteria</i>	30
5.11.7	<i>Candidacy Examination Outcomes</i>	30
5.11.8	<i>Candidacy Examination Protocol</i>	30
5.12	Final Examination	31
5.13	PhD Program Timeline Chart	32
6	SUPERVISORY COMMITTEE MEETINGS	34
6.1	Recommended Format	34
7	FINAL EXAMINATIONS AND PROGRAM COMPLETION	36
7.1	Guidelines for Thesis Preparation	37

7.2	Master’s Final Examination	37
7.2.1	<i>MSc Final Examination Timelines</i>	37
7.2.2	<i>MSc Final Examining Committee</i>	37
7.2.3	<i>MSc Final Examination Guidelines</i>	38
7.3	PhD Final Examination	38
7.3.1	<i>PhD Final Examination Timelines</i>	38
7.3.2	<i>PhD Final Examining Committee</i>	39
7.3.3	<i>PhD Final Examination Guidelines.....</i>	40
7.4	Teleconferencing and Attendance of Examiners at the Final Examination.....	41
7.5	Outcomes of MSc and PhD Final Examinations.....	41
7.6	Final Examination Protocol	42
7.7	Program Completion Procedures	44

Abbreviations

CV	Curriculum vitae
ELP	English Language Proficiency
FGSR	Faculty of Graduate Studies and Research
FoMD	Faculty of Medicine and Dentistry
GPA	Grade Point Average
IDP	Individual Development Plan
LMP	Laboratory Medicine and Pathology
PD	Professional Development
U of A	University of Alberta

1 GRADUATE STUDIES PROGRAM

1.1 Vision, Mission, and Values

Vision

To be a leader in the development of exceptional researchers and clinical scientists for meeting the health challenges of tomorrow

Mission

To deliver outstanding graduate education experiences and professional training

Values

Academic excellence: developing intellectual capacities for scholarly achievement

Research excellence: instilling independence, creativity and passion for discovery

Student-centered culture: delivering innovative education that engages active student learning, as well as offering supportive strategies to manage program requirements

Training environment: offering a stimulating multidisciplinary environment guided by dedicated faculty and staff in state-of-the-art facilities with leading-edge technologies

Communication excellence: encouraging effective dissemination of knowledge through teaching, scientific presentations and publications

Collaboration: promoting a cohesive and interactive multidisciplinary environment

Professional development: fostering networking opportunities, career development, citizenship, community service and mentoring

1.2 Overview

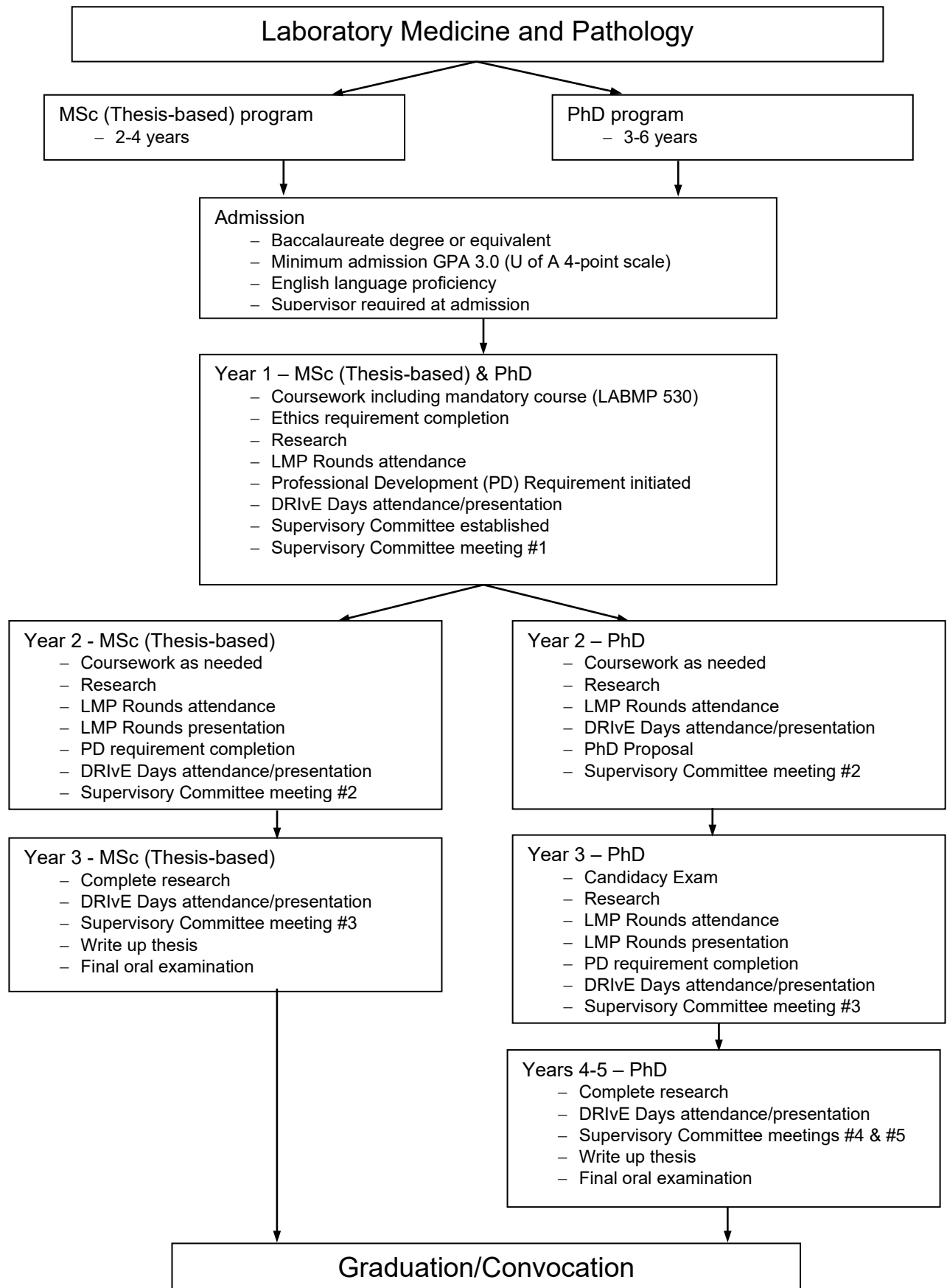
Our thesis-based Master's and PhD programs offer students a multi-disciplinary research environment that promotes creativity and leads to academic excellence. Often this takes form in collaborative thesis research between our innovative basic and clinical research faculty, thus creating opportunities for world-class research.

Program requirements include coursework, presentations and seminars, and an approved research project that culminates in a written thesis. Course requirements are flexible, allowing us to tailor our training to match the needs of our diverse students. Approved courses offered by other departments may be included in the candidate's program.

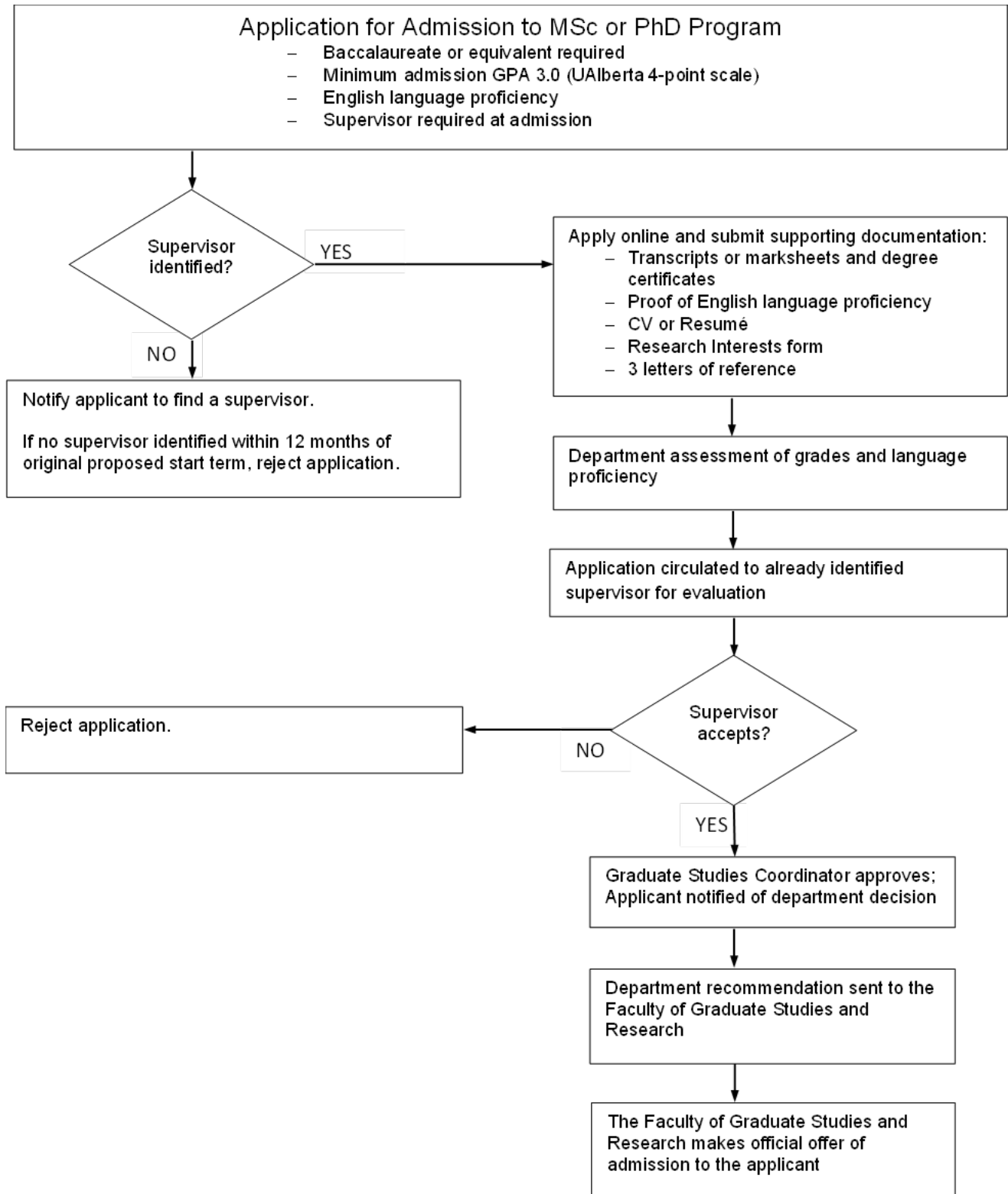
Research areas are diverse: analytical and environmental toxicology; biopreservation (cryobiology); molecular, anatomical, and cancer pathology; bioanalytical technology; virology and microbiology; and hematology, hematopathology and transfusion medicine.

Programs and Specialization: All students are initially admitted to the general Master's or Doctoral program. In consultation with their supervisor/supervisory committee, they may later choose to specialize in Analytical & Environmental Toxicology, Biopreservation, or Molecular Pathology.

Research Facilities: The Department of Laboratory Medicine & Pathology has ample modern research space in the Heritage Medical Research Centre, the Canadian Blood Services Centre, the Clinical Sciences Building, the Medical Sciences Building, the Walter C. Mackenzie Health Sciences Centre, the Katz Group Centre for Pharmacy and Health Research, the Cross Cancer Institute, and the Li Ka Shing Centre for Health Innovation. The department is equipped for molecular biology, blood chemistry analysis, gas and high-pressure liquid chromatography, mass spectrometry, environmental analysis, fluorescence and electron microscopy, computerized image analysis and flow cytometry.



2 APPLICATION AND ADMISSION



2.1 Requirements

The Graduate Studies Committee has approved the following admission requirements for the graduate programs offered by the Department of Laboratory Medicine & Pathology (LMP). These requirements exceed the minimum requirements of the Faculty of Graduate Studies and Research (FGSR) to ensure that the best candidates are accepted and that the excellence of the program is maintained.

2.1.1 Academic Requirements

Candidates must hold a baccalaureate or its academic equivalent from an academic institution recognized by the University of Alberta to enter this program.

The required minimum admission grade point average (GPA) is 3.0 out of 4.0 on the University of Alberta-based scale (based on the last 60 units of course work or the equivalent). All transcripts that use a different grading scale will be assessed for equivalency. FGSR provides guidelines for [minimum academic requirements for international applicants](#), and applicants must meet or exceed these requirements ([University of Alberta Calendar](#)).

If accepted for admission, students without a Master's degree are generally enrolled as candidates for the degree of MSc. Transfer to the PhD program may be made before completion of the MSc when approved by the supervisor and the department. With the approval of the LMP Graduate Studies Director and prospective supervisor, direct entry to the PhD program without a Master's degree is possible for exceptional candidates.

2.1.2 Language Requirement

Proficiency in English must be demonstrated prior to acceptance in the program by meeting the following criteria which exceed those of the FGSR.

- Applicants must submit proof of English language proficiency (ELP) if they do not hold a degree from countries or international universities listed on the Faculty of Graduate Studies and Research page of [Recognized English Language Countries and Institutions](#). Four ELP examinations are recognized: TOEFL, IELTS (Academic), PTE (Academic), and CAEL.
- Minimum scores required are:
 - internet-based TOEFL score of 95 with at least 21 per section; or
 - IELTS (Academic) score of 7.0 with at least 6 on each band; or
 - PTE (Academic) score of 65 with a minimum band score of 60; or
 - CAEL score of 70 with at least 70 on each subtest.

2.2 Identification of Supervisor

LMP cannot admit an applicant until a qualified faculty member:

1. agrees to supervise and take that applicant as a student, and
2. has sufficient funding to do so.

As such, applicants are required to review [supervisors profiles/research](#) and consult directly with those whose area of research is of interest. **Only submit an application AFTER receiving a recommendation to apply by email from the supervisor(s).**

When looking for a supervisor, applicants are encouraged to email those supervisors with whom they would like to study, include transcripts and CV, and tell why they'd like to work with that particular supervisor - why that supervisor's research is of interest, what the applicant's background is, what their goals are, how they could fit in to that particular lab. The applicant should target email messages specifically to the supervisor being contacted (i.e. the same generic message sent to each researcher may not be as effective).

2.3 Application and Supporting Documents

Applications are submitted online via University of Alberta's Graduate Studies Management Solution (GSMS), accessible at FGSR's [Apply for Admission](#) web page.

2.3.1 Application Deadlines

Canadian and permanent resident applicants must submit their application and ALL supporting documentation according to the following schedule:

For Admit Term	Submission Deadline
Fall (September)	August 1
Winter (January)	November 15
Spring (May)	April 1
Summer (July)	June 1

International applicants must submit their application and ALL supporting documentation according to the following:

For Admit Term	Submission Deadline
September (Fall)	May 15
January (Winter)	September 15
May (Spring)	January 15
July (Summer)	March 15

International applicants generally need plenty of time (up to six months in some cases) to make arrangements to enter Canada and are advised to keep this in mind when applying.

In all cases, submission of application packages well in advance of the listed deadlines is encouraged.

2.3.2 Supporting Documents

Except for letters of recommendation, all supporting documentation is uploaded by the applicant during the online application process. If admitted, official academic documents must be sent directly from the applicant's educational institutions to the Faculty of Graduate Studies & Research.

Supporting Documents:

- official transcripts or mark sheets and degree certificates from all university or post-secondary institutions previously attended whether or not they are perceived as relevant to the program to which the applicant is applying. Refer to [Application Requirements for Academic Documents](#) for detailed information. Failure to list and provide complete transcripts from all institutions attended on the application may be considered an intentional omission and will lead to the cancellation of an application for admission or withdrawal of an offer of admission.
- curriculum vitae or Résumé
- completed [Research Interests form](#) (and accompanying summary of research interests).
- proof of English language proficiency (if necessary).
- three letters of recommendation. As part of the online application, the applicant supplies the names and email addresses of referees and these referees will be invited to submit references via an online form and an uploaded letter.

2.4 Admission Decision

It should be understood that **eligibility does not guarantee admission.**

After a complete application package has been received, transcripts are assessed. If the minimum academic requirement and the English language requirement (if necessary) are met, the application is sent to the identified supervisor for review and acceptance.

The identified supervisor may contact an applicant for an interview (by phone, electronically, or in person).

A faculty member wishing to take the applicant as a student notifies the LMP Graduate Program Office and confirms that he or she (1) has the required stipend support for the student, (2) has operating funds sufficient to support the student's research, and (3) has interviewed the applicant. The LMP Graduate Studies Director considers the supervisor's request and, if approved, a recommendation for admission is sent to the FGSR. The FGSR extends the official offer of admission.

If more than one faculty member is interested in taking an applicant as a student, the final decision of supervisor lies with the applicant.

If no faculty member has expressed an interest then the application is rejected.

3 GUIDELINES AND RESPONSIBILITIES

3.1 Graduate Students

Graduate students are ultimately responsible for their own programs and expected to become familiar with all regulations and deadlines relating to their program. Graduate student responsibilities are outlined in FGSR's [Graduate Program Manual 1.1](#) and in the [University of Alberta Calendar](#)

3.1.1 Good Standing Policy

This policy is effective for new students as of September 1, 2019.

Students must be in "good standing" (see the [Good Standing Policy](#)) in order to receive certain Laboratory Medicine and Pathology graduate program benefits.

3.1.2 Vacation

Students paid from their supervisor's grant are covered by the [Graduate Student Assistantship Collective Agreement](#) and, per Article 14, are entitled to one week of paid vacation for each 4-month term (Fall, Winter, Spring/Summer). This is in addition to the days when the University is closed.

LMP:

1. requires that the timing of vacations be negotiated with the supervisor well in advance of the proposed vacation dates. This timing must be acceptable to the supervisor and not adversely affect the student's duties.
2. permits unused vacation to be carried forward from one term to the next or one year to the next without written consent of the LMP Graduate Studies Director (Chair's designate) when approved by the supervisor.
3. does not require advance approval of the LMP Graduate Studies Director (Chair's designate).

LMP encourages that students not covered by the collective agreement (i.e. those who are solely supported by awards) also be permitted one week of paid vacation for each 4-month term (Fall, Winter, Spring/summer) in addition to the days when the University is closed, unless the terms of the award state otherwise.

3.2 Conflict of Interest Guidelines

The key relationships are:

- the supervisor to the student;
- the supervisor to the other committee members;
- the student to the committee members.

Conflict of interest guidelines are outlined in the [University of Alberta Calendar](#).

3.3 Graduate Student Supervisors

Faculty members undertaking supervision of a graduate student agree to abide by the principles outlined in this document.

Supervisors are established prior to admission.

3.3.1 Qualifications of Supervisor

In the Department of Laboratory Medicine & Pathology, the Graduate Studies Director recommends the suitability of individual faculty members to act as graduate student supervisors. Approval of the appointment of supervisors lies with the Faculty of Medicine and Dentistry (FoMD).

Qualifications required by FGSR are outline in the [University of Alberta Calendar](#).

FoMD's [Graduate Student Supervision by a Non-Equivalent Degree Holder Policy](#) outlines additional requirements for faculty members who are non-equivalent degree holders (i.e. those without a thesis-based MSc or PhD) and who wish to be a sole supervisor.

The following are general guidelines which complement the FGSR guidelines. The prospective supervisor:

- should have a successful record of graduate supervision;
- must have adequate time to supervise each prospective graduate student;
- must be capable of supervising the number of graduate students proposed;
- is expected to have adequate research funding for the proposed project, of a type that ensures the academic freedom of graduate students;
- must have the necessary facilities and resources available for graduate student research and provide an appropriate academic environment.

The requirement of a second supervisor for any student is subject to the discretion of the LMP Graduate Studies Director or Department Chair.

[Conflict of Interest Guidelines](#) must be followed.

3.3.2 Multiple Supervisors

For New Supervisors

For prospective supervisors lacking experience in graduate supervision, it is the policy of the Department of Laboratory Medicine & Pathology that there is a second supervisor who is an experienced faculty member. The primary supervisor is required to identify the second supervisor within the graduate student's first term and to notify the LMP Graduate Program Office. The LMP Graduate Studies Director or Department Chair must approve the choice.

- A second supervisor must be appointed for any faculty member supervising his or her first graduate student for the duration of that student's program.
- A second supervisor must also be appointed for any faculty member supervising his or her first PhD student for the duration of that student's program.
- The appointed second supervisor must have graduated a student with the equivalent graduate degree from the University of Alberta.
- The role of second supervisor is to provide an additional source of guidance and support to the student while also acting as a mentor to the new supervisor.

For Supervisors whose Primary Appointment is not LMP

- For faculty members whose primary appointment is not LMP but who are tenured, tenure-track, a retired faculty member, or a Faculty Service Officer of the University of Alberta, the same guidelines apply as for LMP faculty.
- For faculty members who are external to the University of Alberta, it is LMP policy that there be a second supervisor who is primarily appointed to Laboratory Medicine & Pathology for the duration of the graduate student's program.

3.3.3 Graduate Student Supervisor Responsibilities

The supervisor is directly responsible for the supervision of the graduate student's program. In this capacity, the supervisor assists the graduate student in planning a program, ensures that the graduate student is aware of all program requirements, degree regulations, and general regulations of the department and the Faculty of Graduate Studies and Research (FGSR), provides counsel on all aspects of the program, and stays informed about the student's research activities and progress.

The supervisor is also charged with ensuring that graduate students conduct their research in a manner that is as effective, safe, and productive as is possible.

The supervisor must prepare a program of studies for the graduate student, arrange for and attend all supervisory committee meetings and examinations, ensuring that these are scheduled and held in accordance with FGSR regulations, and must review the thesis both in draft and in final form.

Specifically, it is the responsibility of the graduate student supervisor to:

- evaluate the graduate student's previous academic experience and recommend courses the graduate student should take to ensure a solid and appropriate academic background is in place for the research to be undertaken;
- provide an environment for the graduate student that is conducive to research and in which the graduate student can grow intellectually;
 - graduate students need time to study for courses, prepare for candidacy exams, write papers and read the literature; and
 - graduate students should also be encouraged to participate in activities that enhance their academic experience such as attending seminars, meeting with seminar speakers, participating in the graduate student organizations, attending conferences, and developing their skills and experience in teaching and mentoring;
- consider a graduate student a junior colleague;
 - supervisors are reminded that graduate students are fellow academics and should be treated with respect;
 - graduate students should not be viewed as “a pair of hands” and supervised only on the technical aspects of their project;
- maintain open communication with the student concerning any problem; and in the event of a conflict in the supervisor-student relationship, discuss the issues with the student and LMP Graduate Studies Director in a timely fashion
- ensure that appropriate financial support for the graduate student's stipend is in place, or that sources of funding are available for the graduate student to apply for where applicable. (See [Graduate Student Financial Support and Awards](#).)
- ensure that there are sufficient financial and supervisory resources and materials for the research program of each graduate student being supervised.
- ensure that the graduate student is aware of his/her responsibilities (as listed previously) and, when necessary, assist the graduate student in meeting them.
- provide appropriate guidance to the student on the nature of research and the standard expected, and is accessible to give advice and constructive feedback. At the beginning of the supervisory relationship, the student should be made aware, in writing, of the expectations held by the supervisor and the department that are not already defined in the University Calendar and the FGSR Graduate Program Manual.
- establish, with the graduate student, a realistic timetable for completion of various phases of the program.
- establish, with input from the graduate student, a Supervisory Committee within eight months of the start of program.
- ensure that the Supervisory Committee maintains contact and formally meets with the graduate student at least once a year.
- communicate to the Graduate Studies Director, student and Supervisory Committee members regarding all meetings, examinations and any information relating to the student's graduate program.

- set up Committee meetings and examinations in consultation with the student, and with the graduate student's full knowledge.
- ensure that relevant forms are prepared, signed and submitted to the Graduate Studies Director.
- if going on leave or absent for an extended period, advise the Graduate Studies Director which member of the Supervisory Committee will be the acting supervisor.

3.4 Graduate Student Supervisory Committee

It is recommended that the Supervisory Committees for both PhD and Master's students be established **within eight months** of the start of the student's program, but must be established within one year. The committee must have **at least three members** including the supervisor(s).

3.4.1 Qualification of Supervisory Committee Members

In the Department of Laboratory Medicine & Pathology, the Graduate Studies Director recommends the suitability of individuals to sit on Supervisory Committees.

At a minimum, supervisory committee members must be qualified to serve as Examining Committee members as they are *ex-officio* members of the examining committee.

Members of a supervisory committee are to be sufficiently competent and experienced to serve at the required level. In forming a supervisory committee, consideration is given to the rank and experience of the prospective members, their publications and other demonstrations of competence in the subject area or field of specialization, and the prospective members' experience in graduate supervision. (See [University of Alberta Calendar](#).)

[Conflict of Interest Guidelines](#) must be followed.

3.4.2 Graduate Student Supervisory Committee Responsibilities

- Is accessible to the graduate student for consultation;
- Provides guidance and advice to the graduate student based on their area of expertise;
- Participates in regular committee meetings at least once a year;
- Recommends and approves courses for the graduate student;
- Approves the graduate student's PhD research proposal before submission;
- Signs a statement approving the suitability of a thesis for examination prior to submission of the final oral examination form; and
- Participates in candidacy and/or final oral examinations.

3.5 Graduate Studies Director

The LMP Director, Graduate Studies has primary oversight over all the LMP thesis-based Master's and PhD programs and course-based MSc programs, fostering a learning environment that promotes delivery of outstanding graduate education experiences and professional training. Key qualifications include a PhD (tenured or a tenure-track faculty) with a strong understanding of LMP, FoMD and Faculty of Graduate Studies and Research (FGSR) Program policies and procedures; experience in MSc and PhD student supervision, academic administration, strategic and curriculum planning; ability to work collaboratively and build partnerships within a larger and complex organization.

The Associate Director consults with the Director on program matters and acts as the graduate coordinator when the Director cannot.

Graduate Studies Director Responsibilities:

- Responsible for the administration, organization, evaluation, continuous quality improvement, curriculum planning, and general effectiveness of the LMP graduate program
- Acts as the official graduate program representative of the Department to the FGSR and FoMD, ensuring that the regulations and requirements of the University are administered and met in a fair and equitable manner
- Maintains effective relationships and work collaboratively with other university departments, research institutes, centres, faculties, colleges, and stakeholders to support graduate research and training development
- Communicates relevant information from the FGSR and FoMD to graduate students and faculty members in the Department
- Communicates relevant information to the FGSR and FoMD regarding graduate students in the Department
- Monitors student supervision and ensures that the supervisors meet regulations and requirements of the FGSR, FoMD, and the LMP department
- Responsible for admission of students to the department. Confirms the applicants meet the admission criteria before recommendations for admission are forwarded to FGSR
- Ensures that a graduate student supervisor and a supervisory committee are set up within one year of the student starting the graduate program
- Recommends graduate student supervisors to FoMD for appointment in accordance with LMP, FoMD, and FGSR policy
- Recommends members of the doctoral supervisory committee appointment to FGSR in accordance with LMP, FoMD, and FGSR policy
- Approves members of the master's supervisory committee appointment
- Acting as an advisor concerning the appointment external examiners
- Oversees submission and distribution of the PhD Proposal package, reviewers' comments, and student responses to the LMP Graduate Studies Committee (GSC) for approval
- Assists supervisors in addressing concerns regarding graduate student progress
- Monitors the progress of all graduate students in the Department
- Acting as an advisor concerning any changes to a graduate student's status or a program
- Chairs the graduate student candidacy and final oral examinations or appropriately delegates this responsibility
- Initiates and coordinates LMP graduate student orientations activities
- Acts as the course coordinator for LABMP 540 and LABMP 620/621 or appropriately delegates this responsibility
- Approves grades for graduate level LABMP courses or appropriately delegates this responsibility
- Chairs meetings of the LMP GSC Committee, acts as a member/representative of the LMP graduate program at the LMP Awards and Education Committees and other LMP, FoMD, and FGSR committees and working groups, as requested

[Conflict of Interest Guidelines](#) must be followed.

3.6 Graduate Studies Committee

The graduate program in Laboratory Medicine and Pathology is administered by the Graduate Studies Committee which normally consists of the Department Chair, the Director of Graduate Studies, the Associate Director of Graduate Studies, the Director of the Pathologists' Assistant program, at least 4 additional faculty members (where at least 50% must be actively supervising graduate students), 1-2 graduate student representatives, and the Graduate Program Advisor who is a non-voting member. All faculty members of the Graduate Studies Committee are appointed by the Department Chair for a defined term of service. At least 3 faculty members plus the Graduate Studies Coordinator are required for quorum.

The role of the Graduate Studies Committee is to:

- promote and enhance graduate studies;
- set policy as defined in the LMP *graduate program handbooks*;
- review and make decisions as necessary regarding admissions and student awards;
- assist in monitoring graduate student progress;
- review PhD proposal packages (proposal, student progress, research environment, and committee expertise) and makes recommendations regarding a student's general readiness to proceed to the candidacy examination; and
- disseminate key information to students and supervisors.

3.7 Graduate Student Financial Support and Awards

It is the graduate student's responsibility to apply for appropriate external funding, and it is the supervisor's responsibility to facilitate those applications in a timely fashion.

See [LMP Awards and Funding](#) and [FGSR Awards and Funding](#) for awards information pertinent to LMP students. Students who are not in good standing may not be eligible for these benefits (see the LMP [Good Standing Policy](#)).

Definitions for the purposes of student financial support:

Financial support or **funding level** = total amount of stipend, or award(s), or any combination of stipend and award(s)

Stipend = payment to student from an operating grant

Award = scholarship/fellowship or award; excludes travel awards (e.g. from LMP, FGSR, or the GSA) and prizes (e.g. Andrew Stewart Prize).

Note: Per FGSR, scholarships, fellowships and awards are intended to support future work; prizes recognize past accomplishments and are not intended to support future work.

Major award = an award or scholarship of \$13,000 or greater (in agreement with FoMD guidelines)

Minor award = an award or scholarship valued at less than \$13,000. The exception is the Walter H Johns Graduate Fellowship – this award is linked to a Tri-Agency scholarship and, for the purposes of financial support, the Tri-Agency award and the Walter Johns Fellowship taken together are considered to be a single major award.

GRAF Minimum Stipend: the minimum funding levels confirmed by the Graduate Studies Committee for 2021/22 are:

\$25,654.08/year (\$2,137.84/month) for MSc students
\$26,762.16/year (\$2,230.18/month) for PhD students

While the department sets the funding policy, supervisors are responsible for the financial support of graduate students under their supervision according to the following:

- The supervisor must ensure that the student receives financial support in the form of a stipend, award(s), or combination of these which equals the GRAF Minimum Stipend. Specific guidelines follow.
- Expected duration of funding:
 - For Master's students: 2.5 years minimum
 - For Doctoral students: 5 years minimum
 - Student funding beyond the expected duration is subject to satisfactory performance and availability of funding.
- Self-funding by students who are within the expected funding periods may not replace the required level of funding support.

Funding of students with no award(s):

Supervisor ensures student receives a stipend which at least equals the GRAF Minimum Stipend.

Funding of students earning major and minor awards:

Major awards only:

Major awards are administered according to the rules of the awarding agency. However, if the student earns a **major award of a value less than the GRAF Minimum Stipend**, the supervisor must ensure that the student receives a stipend (top-up) which ensures an annual funding level at least \$1500 more than the GRAF Minimum Stipend for the duration of the major award.

Minor awards only:

For each minor award earned:

- If ($\text{\$value of the award} - \$1,500$) is ≤ 0 , there is no change to the student's current stipend; student funding level increases by the value of the award for that year
- If ($\text{\$value of the award} - \$1,500$) is > 0 , then the supervisor may opt to adjust the student's stipend as follows:

$$\text{revised stipend} = \text{current stipend} - x (\text{\$value of award} - \$1,500)$$

where x = percentage of reduction set by the supervisor

$x = 50\%$ is suggested so as to encourage students to apply for awards while also recognizing the needs of supervisors to fund laboratory activities in support of the student's research, but any percentage may be used

0% = no reduction

100% = reduction of all but \$1,500

$$\text{revised funding level for that year} = \text{revised stipend} + \text{value of award}$$

- In all cases, the student's overall funding level increases.

Major and minor awards:

- If a student holding a major award subsequently earns a minor award, the student (1) keeps the entire value of the minor award(s) if permitted by both awarding agencies, and (2) there is no reduction to the stipend.

- If the student holding a minor award subsequently earns a major award, the student may keep the entire value of the minor award if permitted by both awarding agencies. If the student cannot keep the minor award due to awarding agency guidelines, then the “major awards only” guideline is followed.

For a student holding major and/or minor awards, **funding level may decrease the following year** if additional awards are not earned.

Supervisors must make students aware of their financial situation and their ability to support the graduate student during their graduate career.

3.8 Student Concerns

3.8.1 Coursework Complaints

Concerns regarding coursework or grades should be addressed first with the course instructor and, if that proves unsatisfactory, then with the chair of the department where the course is taught, and finally with the dean of the faculty in which the course is taught or that dean's designate (usually the associate dean).

For detailed guidelines of the informal and formal grade appeals process see the Faculty of Medicine and Dentistry's Policy and Procedure on [Academic Appeals](#). Specific timelines apply.

Grades cannot be appealed beyond the Faculty level.

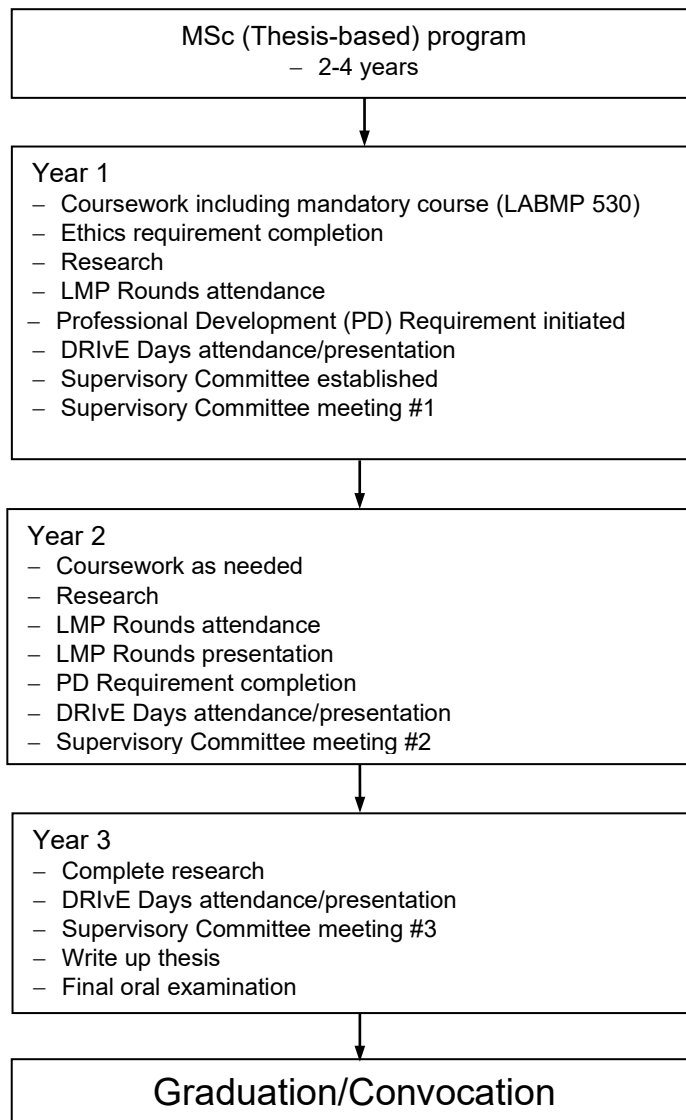
The [Office of the Student Ombuds](#) may be consulted for advice at any time.

3.8.2 Student/Supervisor Conflicts

The relationship between students and supervisors is normally close and long-lasting. At times, conflicts may arise between a student and the supervisor.

- The first step is to try to resolve the conflict or misunderstanding informally. The supervisor and student should discuss the problem together. See the [University of Alberta Calendar](#).
- If resolution is unsuccessful, the Graduate Studies Director should be notified as early as possible. It is the responsibility of the Graduate Studies Director to arrange for consultation and mediation.
- Assistance/advice of the supervisory committee or other appropriate resources may be requested.
- Finally, assistance of the FGSR may be requested
- The [Office of the Student Ombuds](#) may be consulted for advice at any time.
- The Faculty of Medicine & Dentistry's [Office of Advocacy & Wellbeing](#) may also be contacted regarding issues pertaining to the health and well-being of learners, including graduate students and also advocates on their behalf. It is a safe and confidential place to seek out resources and support for any situation that might affect a student's ability to perform at his or her best.

4 MASTER'S PROGRAM



4.1 Time Limits for Program Requirements and Completion (MSc)

Laboratory Medicine & Pathology requires that thesis-based Master's students complete all program requirements *other than the thesis* within two years of the commencement of their program.

The time limit for program completion as established by FGSR is four years from their start date ([University of Alberta Calendar](#)). The minimum length of time is determined by registration requirements: students must pay the equivalent of at least one full year of program fees ([University of Alberta Calendar](#)). Notwithstanding this, students are required to fulfill the department's program requirements; a minimum of two years is a realistic expectation for Master's students in LMP.

4.2 Registration Requirement

All students in Laboratory Medicine & Pathology graduate programs must be full time.

Per the [University of Alberta Calendar](#), to be considered full time, Master's students must:

- register in 9 units of course weight each Fall and Winter term of their programs; these 9 units may consist of a combination of courses and thesis research.
- register in THES 906 (6 units) for each of the Spring and Summer terms.

4.3 General Degree and Specialization

All Master's students are initially admitted to the general program. The degree certificate/parchment for the general program will read: Master of Science in Laboratory Medicine and Pathology.

In consultation with their supervisor/supervisory committee, student may choose to specialize in one of the following three areas and must successfully complete the course(s) associated with their chosen specialization (see [Required Coursework \(MSc\)](#)).

- Analytical & Environmental Toxicology
- Biopreservation
- Molecular Pathology

Specialization can be established after completion of at least one of the associated courses. Students must advise the LMP Graduate Program Office of their decision to specialize; the LMP Graduate Program Office will advise FGSR by submitting the "Recommendation for Change of Category or Academic Probation" form.

The degree certificate/parchment for the specialized programs will read:

Master of Science in Analytical and Environmental Toxicology, Department of Laboratory Medicine and Pathology

Master of Science in Biopreservation, Department of Laboratory Medicine and Pathology

Master of Science in Molecular Pathology, Department of Laboratory Medicine and Pathology

4.4 Required Coursework (MSc)

The minimum required coursework for MSc students in Laboratory Medicine & Pathology is 9 units of course weight of graded, graduate-level courses, or approved equivalent; this is typically three 3 courses.

LABMP 530 is mandatory for all students.

Students who choose to specialize must also successfully complete the course(s) associated with their chosen specialization:

Specialization	Associated Courses
Analytical & Environmental Toxicology	<i>must take</i> LABMP 550 <i>recommended to take</i> LABMP 551 also
Biopreservation	<i>must take</i> LABMP 510 <i>recommended to take</i> LABMP 511 also
Molecular Pathology	<i>must take</i> LABMP 581 <i>recommended to take</i> LABMP 500 also

The supervisor and the supervisory committee will establish the courses that a graduate student must complete during their program. Graduate students may be required to take more than the minimum number of courses in order to address deficiencies in their prior training, or to provide background training that is essential for the completion of their degree programs.

Any University of Alberta graduate level graded course may be taken if it has been approved by the student's supervisor/supervisory committee.

Specific courses required for the MSc or PhD degree that have been taken to satisfy the requirements of a previous degree can be substituted with another course at the same level, subject to recommendation by the supervisor and supervisory committee, and Departmental approval.

4.4.1 Academic Standing and Grades

LMP's requirement exceeds that of the FGSR.

- LMP graduate students must maintain a cumulative program GPA of 3.0
- The passing grade for graduate courses is C+ (2.3)
- If the cumulative grade point average falls between 2.3 and 3.0, termination of program or continuation in the program for a specified probationary period may be recommended.
- Notwithstanding the above, a graduate student whose academic standing falls below a grade point average of 3.0 may be required to withdraw at any time.

4.5 Research and Thesis (MSc)

An experiment-based research project is required and is the major component of the student's program. All candidates must present a thesis embodying the results of their research and the topic must be approved by the candidate's supervisor and Supervisory Committee.

- A Master's thesis, at a minimum, should reveal that the candidate is able to work in a scholarly manner and is acquainted with the principal works published on the subject of the thesis. As far as possible, it should be an original contribution ([University of Alberta Calendar](#)).

For further information on Thesis Preparation please see [LMP Guidelines and Considerations for Thesis Preparation](#) and FGSR's [Thesis Preparation, Requirements & Deadlines](#).

4.5.1 Research Laboratory Safety

The University of Alberta undertakes regular safety audits and, in consideration of this, the department of Laboratory Medicine and Pathology asks that the graduate program track graduate student safety training, demonstrating due diligence in this important area. At a minimum, all students must complete three online laboratory safety training courses offered by [Human Resources, Health, Safety and Environment](#): WHMIS, Laboratory and Chemical Safety, and Concepts in Biosafety. In addition to these, lab specific training must be completed prior to performing any laboratory work. Students must complete the training and submit the [Graduate Student Safety Training form](#) to the LMP Graduate Program Office preferably within one month of beginning their programs but no later than the end of the first term.

4.6 Ethics Requirement

An ethics requirement is mandatory for all newly admitted University of Alberta graduate students.

Effective Fall 2022, the [Ethics and Academic Citizenship Requirement](#) replaces the former Ethics and Academic Integrity Training requirement.

For thesis-based Master's students, the Ethics and Academic Citizenship Requirement consists of one zero-credit, self-paced online course: [INT D 710: Ethics and Academic Citizenship](#). New students are automatically registered in INT D 170 and must complete it within their first term.

Students enrolled prior to September 2022 and who did not complete the former Ethics and Academic Integrity Training requirement must register in Bear Tracks to complete INT D 710.

4.7 Presentation/Seminar Attendance Requirement (MSc)

1. Master's students are required to make one oral presentation to the department at LMP Rounds. Student LMP Rounds presentations are scheduled for 25 minutes, generally a 20 minute presentation followed by a short question period. Students are expected to present their own research data.
2. It is expected that graduate students attend LMP Rounds in order to obtain a broad perspective on a wide range of topics in laboratory medicine and pathology. Attendance at 60% of Rounds presentations each year for the first two years of the Master's program is required to ensure continuation in the student's program.

To record attendance when Rounds are in-person, students are responsible for signing the log book that will be found in the seminar room. When Rounds are remote, instructions for recording attendance will be provided in advance of the session(s). Failure to record attendance will not be accepted as a reason for failing to meet the attendance requirement.

The Department of Laboratory Medicine & Pathology's [DRIVE](#) (Discovery, Research, InnoVation and Education) is held annually in conjunction with the Dr. John W. Macgregor Memorial Lecture and the Dr. RE Bell Memorial Lecture. Although not mandatory, grad students (and other trainees) are invited to attend and make either oral or poster presentations. Various prizes are awarded in the Research & Discovery category as well as the Innovation category.

4.8 Professional Development Requirement

FGSR recognizes that professional development (PD) for graduate students is becoming an increasingly important factor to funding agencies and future employers. Many valuable resources for students can be found on FGSR's [Professional Development](#) site and [Events and Training](#) site, including the [Graduate Teaching and Learning Program](#) in which students may take advantage of opportunities to develop their teaching skills.

As of Fall 2016, all incoming graduate students must complete a professional development requirement, which includes the *Individual Development Plan (IDP)* and a minimum of 8 hours of professional development activities. The professional development requirement is not mandatory for graduate students who began their programs prior to Fall 2016, but all are encouraged to do so.

There is a recognized need for graduate students and their supervisors to be more aware of professional development, and the diversity of skills to be developed during graduate programs that go far beyond the ability to complete academic and research requirements. During completion of the IDP, students are expected to identify 3 [possible career paths](#), and map appropriate professional development activities to support development of skills to enhance employment opportunities after graduation. Accordingly, students are expected to:

1. Begin developing the IDP by the start of the second term of the first year. FGSR's [Professional Development Requirement](#) website provides guidance.
2. Identify a career mentor before the end of the second term of the first year.

The career mentor does not have to be the supervisor, but must have an official academic position. *Plan to meet with the career advisor periodically – at least annually* – to discuss the IDP and appropriate professional development activities.

3. Submit LMP's [Professional Development Requirement \(template\)](#), which includes the IDP and a plan for a *minimum of 8 hours* of professional development activities to the LMP Graduate Program Office *within 12 months of program commencement*.

See FGSR's [Eight Hours of Professional Development Activities: Guidelines](#) for guidance.

4. Provide evidence of completion of the professional development requirement to the LMP Graduate Program Office *by the end of year 2*.

The student must meet with the career mentor to review the evidence of completion of the professional development requirement; if met, the career mentor will sign the [Individual Development Plan & Professional Development Completion Form](#). The student will then submit this documentation to the LMP Graduate Studies Director for review and signature. The form is then retained in the student's file as evidence for the *Completion of Thesis & Program Requirements* form.

4.9 Supervisory Committee Meetings (MSc)

It is ultimately the responsibility of the supervisor to ensure that the graduate student has annual supervisory committee meetings.

Annual meetings are considered to be minimal and, if possible, more frequent meetings are encouraged.

See [Supervisory Committee Meetings](#) for guidelines.

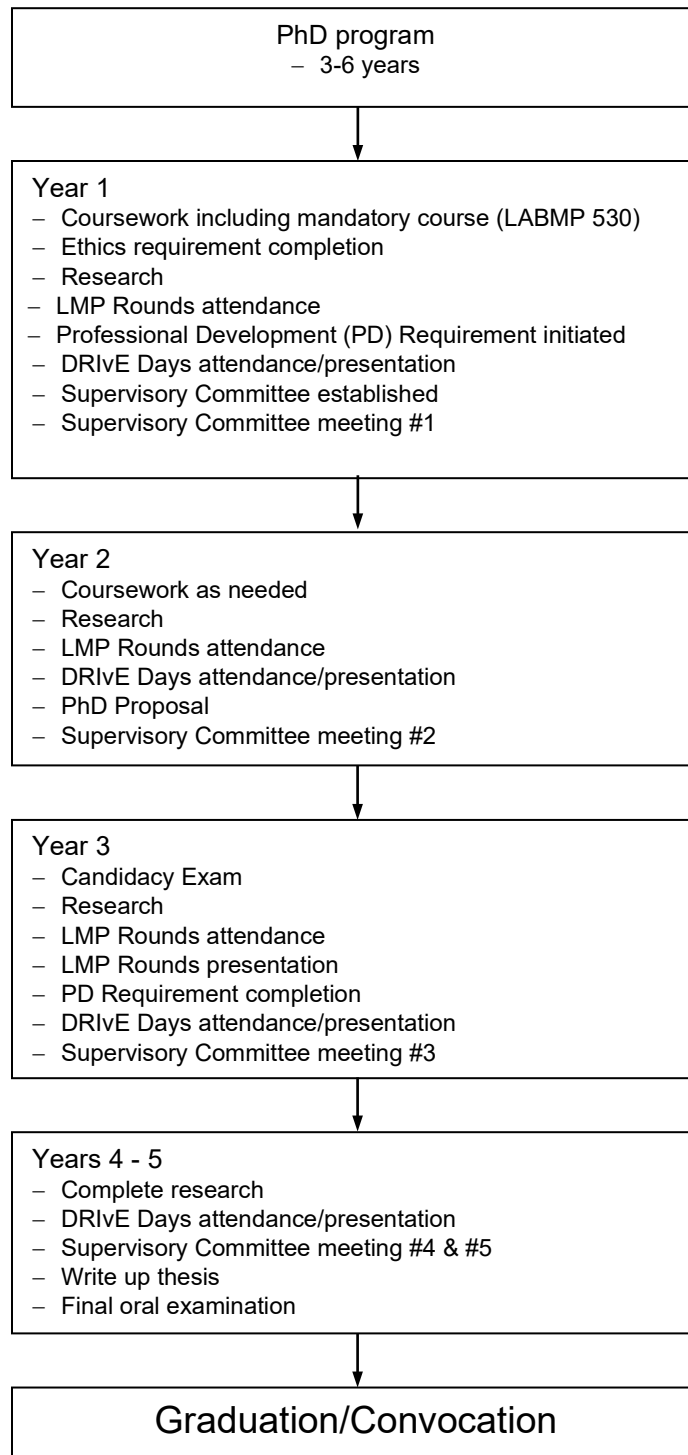
4.10 Final Examination

After the completion of all program requirements, including an acceptable draft of the [thesis](#), the final examination can be planned. See [Final Examinations and Program Completion](#) for guidelines.

4.11 MSc Program Timeline Chart

	Action	Department Timeline
SUPERVISOR	Nominate supervisor	<ul style="list-style-type: none"> Supervisor identified prior to offer of admission LMP Graduate Program Office submits Appointment of Supervisor(s) and Supervisory Committee after student has registered
SUPERVISORY COMMITTEE	Nominates Supervisory Committee members via email or memo to LMP Graduate Program Office	<ul style="list-style-type: none"> Within the first 8 months and no later than the end of the first year
	Supervisory Committee meets with student to review program and progress; submits report to FGSR and LMP Graduate Program Office	<ul style="list-style-type: none"> Annually, or more often as deemed appropriate by the supervisor
SPECIALIZATION	Choose specialization, if any. Notify LMP Graduate Program Office. Office advises FGSR by submitting Recommendation for Change of Category or Academic Probation .	<ul style="list-style-type: none"> After completion of the mandatory associated course
PROGRAM REQUIREMENTS	Course work (9 units)	<ul style="list-style-type: none"> All requirements due within the first two years, except the IDP which is due within 12 months of program start
	Ethics training	
	Professional Development requirement <ul style="list-style-type: none"> IDP and 8 hours of professional development activities 	
	Rounds presentation	
	Rounds attendance (≥60% in each of year 1 and 2)	
FINAL ORAL EXAMINATION	Supervisory committee signs and submits the Departmental Acceptance of Thesis	<ul style="list-style-type: none"> Prior to setting examination date and before the thesis is sent to the examiners
	Supervisor submits recommendation of Examining Committee and exam date/time/location to LMP Graduate Program Office	<ul style="list-style-type: none"> More than four weeks prior to examination
	LMP Graduate Program Office submits signed Notice of Examining Committee & Examination Date to FGSR	<ul style="list-style-type: none"> at least four weeks prior to exam
	Student submits exam copy (pdf format) of thesis to LMP Graduate Program Office.	<ul style="list-style-type: none"> More than four weeks prior to examination
	LMP Graduate Program Office sends the time, date, and location of the exam and exam copy of the thesis to examiners and exam chair. LMP Graduate Program Office sends the student's CV to examiners and exam chair. LMP Graduate Program Office sends the student's Student file snapshot to exam chair.	<ul style="list-style-type: none"> At least four weeks prior to examination At least two days prior to examination
	Exam chair reports examining committee's decision on Thesis Approval / Program Completion form	<ul style="list-style-type: none"> Submit immediately after all signatures are obtained and within six months of the exam
	If required, submit Restrict Thesis Access Form	<ul style="list-style-type: none"> Request must be made prior to or at the same time as submission of the <i>Thesis Approval/Program Completion</i> form to FGSR, for a period of up to two years
	Student submits an electronic copy of the thesis to FGSR	<ul style="list-style-type: none"> Within six months of examination

5 Doctoral Program



5.1 Time Limits for Program Requirements and Completion (PhD)

Doctoral students are required to complete all program requirements *other than the thesis* within three years of the commencement of their program.

The time limit for program completion as established by FGSR is six years from their start date ([University of Alberta Calendar](#)). The minimum length of time is determined by registration requirements: students must pay the equivalent of at least three full years of program fees ([University of Alberta Calendar](#)). Notwithstanding this, students are required to fulfill the department's thesis-based program requirements and a realistic expectation for doctoral students to complete their program in LMP is four to six years.

Note: Master's students who are reclassified as doctoral students must complete all degree requirements within six (6) years from their first term of registration as a Master's student.

5.2 Registration Requirement

All students in Laboratory Medicine & Pathology graduate programs must be full time.

Per the [University of Alberta Calendar](#), to be considered full time, doctoral students must:

- register in 9 units of course weight each Fall and Winter term of their programs; these 9 units may consist of a combination of courses and thesis research.
- register in Thesis 906 for each of the Spring and Summer terms.

5.3 General Degree and Specialization

All doctoral students are initially admitted to the general program. The degree certificate/parchment for the general program will read: Doctor of Philosophy in Laboratory Medicine and Pathology.

In consultation with their supervisor/Supervisory Committee, students may choose to specialize in one of the following three areas and must successfully complete the course(s) associated with their chosen specialization (see [Required Coursework \(PhD\)](#)).

- Analytical & Environmental Toxicology
- Biopreservation
- Molecular Pathology

Specialization can be established after completion of at least one of the associated courses. Students must advise the LMP Graduate Program Office of their decision to specialize; the LMP Graduate Program Office will advise FGSR by submitting the "Recommendation for Change of Category or Academic Probation" form.

The degree certificate/parchment for the specialized programs will read:

Doctor of Philosophy in Analytical and Environmental Toxicology, Department of Laboratory Medicine and Pathology

Doctor of Philosophy in Biopreservation, Department of Laboratory Medicine and Pathology

Doctor of Philosophy in Molecular Pathology, Department of Laboratory Medicine and Pathology

5.4 Required Coursework (PhD)

The minimum required coursework for PhD students in Laboratory Medicine & Pathology is:

- at least 12 *graded* units of course weight at the graduate level (typically 4 courses) for students who do not have a Master's degree, or
- at least 6 *graded* units at the graduate level (typically 2 courses) for students who do have a Master's degree.

LABMP 530 is mandatory for all students.

Students who choose to specialize must also successfully complete the course(s) associated with their chosen specialization:

Specialization	Associated Courses
Analytical & Environmental Toxicology	<i>must take</i> LABMP 550 <i>recommended to take</i> LABMP 551 also
Bio-preservation	<i>must take</i> LABMP 510 <i>recommended to take</i> LABMP 511 also
Molecular Pathology	<i>must take</i> LABMP 581 <i>recommended to take</i> LABMP 500 also

The supervisor and the supervisory committee will establish the courses that a graduate student must complete during their program. Graduate students may be required to take more than the minimum number of courses in order to address deficiencies in their prior training, or to provide background training that is essential for the completion of their degree programs.

Any University of Alberta graduate level graded course may be taken if it has been approved by the student's supervisor/supervisory committee.

Specific courses required for the MSc or PhD degree that have been taken to satisfy the requirements of a previous degree can be substituted with another course at the same level, subject to recommendation by the supervisor and supervisory committee, and Departmental approval.

5.4.1 Academic Standing and Grades

LMP's requirement exceeds that of the FGSR.

- LMP graduate students must maintain a cumulative program GPA of 3.0
- The passing grade for graduate courses is C+ (2.3)
- If the cumulative grade point average falls between 2.3 and 3.0, termination of program or continuation in the program for a specified probationary period may be recommended.
- Notwithstanding the above, a graduate student whose academic standing falls below a grade point average of 3.0 may be required to withdraw at any time.

5.5 Research and Thesis (PhD)

An experiment-based research project is required and is the major component of the student's program. All candidates must present a thesis embodying the results of their research and the topic must be approved by the candidate's supervisor and Supervisory Committee.

- A doctoral thesis, at a minimum, must embody the results of original investigations and analyses and be of such quality as to merit publication, meeting the standards of reputable scholarly publications. It must constitute a substantial contribution to the knowledge in the student's field of study ([University of Alberta Calendar](#)).

For further information on Thesis Preparation please see [LMP Guidelines and Considerations for Thesis Preparation](#) and FGSR's [Thesis Preparation, Requirements & Deadlines](#).

5.5.1 Research Laboratory Safety

The University of Alberta undertakes regular safety audits and, in consideration of this, the department of Laboratory Medicine and Pathology asks that the graduate program track graduate student safety training, demonstrating due diligence in this important area. At a minimum, all students must complete three online laboratory safety training courses offered by [Human Resources, Health, Safety and Environment](#): WHMIS, Laboratory and Chemical Safety, and Concepts in Biosafety. In addition to these, lab specific training must be completed prior to performing any laboratory work. Students must complete the training and submit the [Graduate Student Safety Training form](#) to the LMP Graduate Program Office preferably within one month of beginning their programs but no later than the end of the first term.

5.6 Ethics Requirement

An ethics requirement is mandatory for all newly-admitted University of Alberta graduate students.

Effective Fall 2022, the [Ethics and Academic Citizenship Requirement](#) replaces the former Ethics and Academic Integrity Training requirement.

For doctoral students, the Ethics and Academic Citizenship Requirement consists of two zero-credit, self-paced online courses: [INT D 710: Ethics and Academic Citizenship](#) and [INT D 720: Advanced Ethics and Academic Citizenship](#). New students are automatically registered in INT D 170 and INT D 720 and must complete them within their first term.

Students enrolled prior to September 2022 and who did not complete the former Ethics and Academic Integrity Training requirement must register in Bear Tracks to complete INT D 710 and INT D 720.

5.7 Presentation/Seminar Attendance Requirement (PhD)

1. PhD students, in addition to the public presentation which is part of their final exam, must make one oral presentation to the Department at LMP Rounds. Student LMP Rounds presentations are scheduled for 25 minutes, generally a 20-minute presentation followed by a short question period. Students are expected to present their own research data.
2. It is expected that graduate students attend LMP Rounds in order to obtain a broad perspective on a wide range of topics in laboratory medicine and pathology. Attendance at 60% of Rounds presentations each year for the first three years of the doctoral program is required to ensure continuation in the student's program.

To record attendance when Rounds are in-person, students are responsible for signing the log book that will be found in the seminar room. When Rounds are remote, instructions for recording attendance will be provided in advance of the session(s). Failure to record attendance will not be accepted as a reason for failing to meet the attendance requirement.

The Department of Laboratory Medicine & Pathology's [DRIVE](#) (Discovery, Research, Innovation and Education) is held annually in conjunction with the Dr. John W. Macgregor Memorial Lecture and the Dr. RE Bell Memorial Lecture. Although not mandatory, grad students (and other trainees) are invited to attend and make either oral or poster presentations. Various prizes are awarded in the Research & Discovery category as well as the Innovation category.

5.8 Professional Development Requirement

FGSR recognizes that professional development (PD) for graduate students is becoming an increasingly important factor to funding agencies and future employers. Many valuable resources for students can be found on FGSR's [Professional Development](#) site and [Events and Training](#) site, including the [Graduate Teaching and Learning Program](#) in which students may take advantage of opportunities to develop their teaching skills.

As of Fall 2016, all incoming graduate students must complete a **professional development requirement**, which includes the *Individual Development Plan (IDP)* and a minimum of 8 hours of professional development activities. The professional development requirement is not mandatory for graduate students who began their programs prior to Fall 2016, but all are encouraged to do so.

There is a recognized need for graduate students and their supervisors to be more aware of professional development, and the diversity of skills to be developed during graduate programs that go far beyond the ability to complete academic and research requirements. During completion of the IDP, students are expected to identify 3 [possible career paths](#), and map appropriate professional development activities to support development of skills to enhance employment opportunities after graduation. Accordingly, students are expected to:

1. Begin developing the IDP by the start of the second term of the first year. FGSR's [Professional Development Requirement](#) website provides guidance.
2. Identify a career mentor before the end of the second term of the first year.

The career mentor does not have to be the supervisor, but must have an official academic position. *Plan to meet with the career advisor periodically – at least annually* – to discuss the IDP and appropriate professional development activities.

3. Submit LMP's [Professional Development Requirement \(template\)](#), which includes the IDP and a plan for a minimum of 8 hours of professional development activities to the LMP Graduate Program Office within 18 months of program commencement.

See FGSR's [Eight Hours of Professional Development Activities: Guidelines](#) for guidance.

4. Provide evidence of completion of the professional development requirement to the LMP Graduate Program Office the end of year 3.

The student must meet with the career mentor to review the evidence of completion of the professional development requirement. If met, the career mentor will sign the [Individual Development Plan & Professional Development Completion Form](#). The student will then submit this documentation to the LMP Graduate Studies Director for review and signature. The form is retained in the student's file as evidence for the *Completion of Thesis & Program Requirements* form.

5.9 Supervisory Committee Meetings (PhD)

It is ultimately the responsibility of the supervisor to ensure that the graduate student has annual supervisory committee meetings.

Annual meetings are considered to be minimal and, if possible, more frequent meetings are encouraged.

If the annual supervisory committee meeting would normally occur within the 3 month period before or the 3-month period following the candidacy examination, the examination may serve in lieu of the committee meeting, however, a Supervisory Committee meeting report and supporting documentation must still be submitted. This may require a brief meeting immediately following the examination to discuss any points not addressed during the examination. The report and documentation are to be submitted within 7 days of the candidacy examination.

See [Supervisory Committee Meetings](#) for guidelines.

5.10 PhD Proposal

Laboratory Medicine & Pathology strives for excellence in graduate studies, where graduate students are highly motivated to make original contributions in science and to complete their PhD program with peer-reviewed publications. The department utilizes the expertise of external reviewers to review all proposals from PhD students registered in our program.

5.10.1 PhD Proposal Requirements

PhD students must submit a PhD Proposal package following the completion of the majority of their course work and within the first 2 years of the start of their program. If the proposal is not submitted within this timeframe, a written explanation and timeline for submission should be forwarded to the LMP Graduate Studies Director from the student with a supporting statement from the supervisor.

5.10.2 PhD Proposal

The proposal will contain:

- a review of the pertinent literature,
- the research hypothesis,
- the specific objectives of the research,
- a review of the relevant work done previously by the student or the research group on the subject,
- a detailed presentation of the planned experimental approach, and
- the significance of the anticipated results.

The planned experimental approach will present the actual work proposed by the student and will not contain work or anticipated work that will not be conducted by the student.

The thesis proposal is to be written by the student. The thesis proposal must be entirely the student's own creation, although she/he can utilize the supervisor's guidance and/or the expertise in the department or on campus to explore ideas and obtain specific background or technical information.

5.10.3 The PhD Proposal Package

The student's proposal package consists of the following 5 documents:

1. The [PhD Proposal Form](#) which includes:
 - Title of Proposal
 - Student's coursework (completed, in progress, and planned)
 - Ethics Training
 - Professional Development Requirement
 - Student honours and awards
 - Student publications
 - Student presentations
 - Timeline of the PhD program, indicating Supervisory Committee meetings, proposed month of the candidacy examination and final oral examination
 - Student's signature
 - The signatures of the student's supervisor and the supervisory committee members to indicate approval of the proposal package.
2. A written statement from the supervisor (maximum of 200 words) outlining the potential contribution to science of the student's PhD project.

3. A written statement from the supervisor on the expertise of the supervisory committee members (one or two sentences per committee member), as well as the resources (facilities, equipment, personnel) available to support the student's program relevant to the PhD proposal.
4. A proposal outlining the scope of the research project:
 - **A written proposal.** This must be completed independently by the student and should clearly and precisely outline his/her role in the research.
 - Length: Must not exceed four (4) pages, excluding appendices.
 - Format: single spaced with 1.0 inch (2.5 cm) margins.
 - Font: Times New Roman, size 12.
 - **Appendices.** These are limited to 10 pages with not more than 2 figures per page, and should be restricted to figures, legends, references, questionnaires and tables.

Please Note: Anything exceeding these guidelines will be returned to the student and not be included for review.
5. Proposals must be accompanied by a list of **five potential reviewers** from outside our department (include name, department/institution, contact information). These reviewers must not be collaborators on the student's project. The list is to be submitted by the student's supervisor directly to the Graduate Studies Director at LMPgrad@ualberta.ca. Reviewers names are not be identified to the student.

The proposal package documents are not to be combined into a single file. The package is submitted to the LMP Graduate Program Office at LMPgrad@ualberta.ca.

Submissions are accepted at any time.

5.10.4 Assessment of the PhD Proposal Package

The Graduate Studies Director reviews the PhD proposal package and may request a meeting with the student. The signature of the Graduate Studies Director on the PhD Proposal form indicates the PhD proposal package is complete and the PhD proposal may be sent for external review.

At least two independent experts review the graduate student's PhD proposal. They are asked to respond within two weeks to the following three questions and provide comments to support their responses:

Does the proposal encompass sufficient scope for a PhD degree?

Is there the potential for original contribution to science?

Is the proposal well-articulated?

If any reviewer provides a negative response to any of these questions, the reviews and a letter of guidance from the Graduate Studies Director will be provided to the student.

- The student submits a revised proposal along with a letter that explains how concerns were addressed for each reviewer. The same reviewer(s) is then asked to reconsider the proposal. A different reviewer is used only if the original reviewer is unavailable or unwilling to participate further.

If there are subsequent negative responses, the reviews are provided to the student with a letter from the Graduate Studies Director advising that the student must meet with his or her Supervisory Committee to determine how best to proceed.

If all reviewers answer all three questions positively, the student will be provided the reviewers' comments and may be asked to respond in writing to the Graduate Studies Director before the proposal is sent for consideration to the GSC. The Graduate Studies Director submits the PhD Proposal package, reviewers' comments, and student responses to faculty members of the Graduate Studies

Committee for review and discussion at its next meeting. The GSC may provide recommendations to promote the student's success in his/her graduate program.

- The external reviews will be sent to the student and all members of the supervisory committee with a letter from the Graduate Studies Director indicating the **PhD Proposal is approved** and the student may proceed to planning the candidacy examination. Specific recommendations from the GSC would be included in this letter.

5.11 Candidacy Examination

Supervisors are expected to provide a *minimum of two to three weeks protected time* (away from lab work) prior to the candidacy examination date for students to make final preparations for this important examination. This is meant as a final preparation time only, as it is expected that students are studying well in advance of this period.

Students are encouraged to review the posted [Examinations: Tips and Strategies](#) when preparing for their exam.

Only in certain circumstances may the candidacy examination serve in lieu of a scheduled Supervisory Committee meeting. See [Supervisory Committee Meetings \(PhD\)](#).

5.11.1 Purpose of Candidacy Examination

The candidacy examination is comprehensive and addresses the qualifications of the doctoral graduate student in terms of his/her ability to pursue and complete original research at an advanced level. The purpose of the exam is to assess the breadth of the candidate's knowledge in her/his general field of research, the candidate's knowledge of the technical aspects of the proposed thesis research and the candidate's reasoning and critical thinking abilities ([University of Alberta Calendar](#)).

5.11.2 Timelines

Graduate students are eligible to take the candidacy examination after the LMP Graduate Studies Committee (GSC) approves their [PhD Proposal](#).

Graduate students must complete the candidacy examination within 6 months of their PhD proposal being approved by the GSC. If the examination does not occur within this timeframe, a written explanation and timeline for submission should be forwarded to the Graduate Studies Director. Normally, the candidacy examination will occur within the first 30 months of the student's graduate program. Pursuant to FGSR policy, students must pass the candidacy examination no less than 6 months before their final examination.

Once the schedule for the examination is agreed upon by the supervisory committee, the following steps will need to be taken:

1. The supervisor notifies the LMP Graduate Program Office of the composition of the candidacy examining committee, the exam chair, the date, time and location. The LMP Graduate Program Office will generate and obtain signatures on the [Notice of Examining Committee & Examination Date at least 4 weeks](#) prior to the proposed examination date and submit the completed form to FGSR.
2. A copy of [Instructions To Candidacy Examining Committee](#) will be provided to all members of the Candidacy Examining Committee;
3. The Candidacy Exam document must be submitted by the student to all Candidacy Examining Committee members and Examination Chair **at least 2 weeks** before the scheduled examination; and
4. One week prior to the candidacy examination, it is the graduate student's responsibility to meet with the Examination Chair to review the logistics of the examination.

The Chair of the Examining Committee will submit the completed [Report of Completion of Candidacy Examination](#) form and the minutes of the examination to the Graduate Program Office within 7 days of the completion of the Candidacy Examination.

The report and minutes from successful examinations will be sent to the student and supervisor(s).

5.11.3 Composition and Roles of the Candidacy Examining Committee

The Graduate Studies Director will consider the recommendation of the student's Supervisory Committee when appointing the arm's length examiners.

The Candidacy Examining Committee will consist of a minimum of five faculty members meeting the following requirements. The maximum size is seven examiners.

- The Supervisory Committee and a minimum of two arm's length members (normally two other faculty members)
- An arm's length examiner is knowledgeable in the field and comes fresh to the examination. They must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the University, nor be related to the student or supervisor(s).

The arm's length examiners should not be a former supervisor or student of the supervisor(s).

Except in special circumstances (fully justified in writing to the Dean of the department's Faculty), an arm's length examiner should not be an active collaborator of the supervisor(s)

- Arm's length examiners who have served on a student's Candidacy Examining Committee do not lose their arm's length status as a result, and are eligible to serve as arm's length examiners on the student's doctoral final examination if the other conditions of being arm's length remain unchanged.
- **At least half** of the examiners on every Examining Committee must hold a degree which is equivalent to or higher than the degree being examined.
- **At least half** of the examiners on every Examining Committee must meet the employment requirement: current or retired tenured or tenure-track Faculty, current or retired Faculty Service Officer, or current Special Continuing ([Academic Staff Categories A1.1, A1.3, C1.1](#)). Examiners with clinical appointments are permitted, but do not satisfy this employment requirement.
- The exam is chaired by the LMP Graduate Studies Director or designate. A designate must be a faculty member in the Department of Laboratory Medicine & Pathology who is not the student's supervisor.
- The Chair is not an examiner.
- [Conflict of interest guidelines](#) must be followed. It is a best practice to request examiners and the chair declare any potential conflicts of interest prior to approval of the examination committee. Where potential conflicts of interest emerge, the matter may be referred to an Associate Dean at FGSR for advice on how best to manage unavoidable conflicts of interest ([University of Alberta Calendar](#)).

All members must attend the examination.

The Examination Chair's role is to moderate discussion and direct questions, keep a record of the examination process and the questions asked to the student (but not the student responses), ensure that a fair examination occurs, ensure that departmental and FGSR regulations relating to the examination are followed, and file the necessary report concerning the outcome of the examination.

5.11.4 Candidacy Examination Document

The candidacy examination document is the approved [PhD proposal](#) which may be expanded to 5 pages address comments from the external reviewers of the proposal and the GSC.

5.11.5 Format of Examination

The candidacy examination will normally last 2 to 4 hours, after which the voting members of the Candidacy Examining Committee will make a decision. Students will be given 20 minutes at the start of the examination to give an oral presentation that summarizes the thesis proposal. The oral presentation will be followed by questions from the Candidacy Examining Committee. See the recommended [Candidacy Examination Protocol](#) for details. Each member of the Candidacy Examining Committee should assess the student's performance using the evaluation criteria in the following section.

5.11.6 Evaluation Criteria

FGSR stipulates that the graduate students must demonstrate "an adequate knowledge of the discipline and of the subject matter relevant to the thesis" and "the ability to pursue and complete original research at an advanced level." Members of the Candidacy Examining Committee will evaluate the graduate student against the following four general criteria:

- a. The graduate student has demonstrated effective written and verbal communication skills;
For example,
 - The graduate student answered questions with confidence and authority;
- b. The graduate student demonstrated an adequate knowledge of the scientific and technical concepts and principles in areas relevant to the proposed thesis;
- c. The graduate student demonstrated the critical thinking skills required to conduct original research;
For example,
 - The graduate student demonstrated understanding of how experimental design can be used to test hypotheses;
 - The graduate student demonstrated good problem-solving/reasoning skills;
- d. The graduate student demonstrated an understanding of the significance and relevance of their proposed research.

5.11.7 Candidacy Examination Outcomes

The candidacy examination may result in one of the following outcomes:

- Adjourned (requires the majority of examiners)
- Pass (requires all but one examiner)
- Conditional pass (requires the majority of examiners)
- Fail and repeat the candidacy (requires the majority of examiners)
- Fail with a recommendation to terminate the doctoral program or for a change of category to a Master's program (requires all but one examiner).

Outcomes are detailed in the [University of Alberta Calendar](#).

5.11.8 Candidacy Examination Protocol

The Department recommends the Examining Committee use the following protocol for the Candidacy Exam:

1. At the beginning of the exam, the Chair introduces the graduate student and the Candidacy Examining Committee members.

2. The candidate will then be asked to leave the room. Copies of the student's CV and University of Alberta transcript are distributed, and the committee reviews his/her undergraduate background and graduate program. Note: There is no substantial input from the supervisor at this time. The discussion of the graduate student's research and progress to date will occur at the conclusion of the exam.
3. The Candidacy Examining Committee discusses and agrees upon how the exam will be run, specifying the sequence of the events including:
 - a. The number of rounds of questioning (normally two),
 - b. The order of questioning: Normally,
 - i. the arm's length members;
 - ii. the Supervisory Committee members; and
 - iii. the graduate student's supervisor.
 - c. The length of time each examiner has for each questioning in each round (normally 15-20 minutes).
4. The graduate student is then asked to rejoin the committee, the exam format decided on in Step 3 is explained to the student, and the examination begins. The graduate student delivers his/her 20 minute presentation.
5. The agreed upon number of rounds of questioning follows, after which the student is asked to leave the room taking their personal belongings including electronic devices with them.
6. The Chair poses two rounds of questions to the Examining Committee, the first being their opinion on the performance of the student during the examination and the quality of the written material (as per the stated [evaluation criteria](#)), and the second, their recommendation for the outcome.
7. A general discussion ensues with the Chair recording observations that would be of help to the student.
8. A formal vote is conducted as to the outcome of the examination. The [possible outcomes](#) are Pass, Conditional Pass, Adjourned, or Fail (with several subsequent options).
9. The graduate student is recalled and the decision explained and feedback given.
10. The Chair completes the required paperwork and submits it to the Graduate Program Office within 5 working days of the examination.

5.12 Final Examination

After the completion of all program requirements, including an acceptable draft of the [thesis](#), the final examination can be planned. See [Final Examination and Program Completion](#) for guidelines.

5.13 PhD Program Timeline Chart

	<i>Event/Forms</i>	<i>Department Timeline</i>
SUPERVISOR	Nominate supervisor	<ul style="list-style-type: none"> Supervisor identified prior to offer of admission
SUPERVISORY COMMITTEE	Nominates Supervisory Committee members via email or memo to LMP Graduate Program Office	<ul style="list-style-type: none"> Within the first 8 months and no later than the end of the first year LMP Graduate Program Office submits Appointment of Supervisor(s) and Supervisory Committee after the committee members are identified
	Supervisory Committee meets with student to review program and progress; submits report to FGSR and LMP Graduate Program Office	<ul style="list-style-type: none"> Annually, or more often as deemed appropriate by the supervisor
SPECIALIZATION	Choose specialization, if any. Notify LMP Graduate Program Office. Office advises FGSR by submitting Recommendation for Change of Category or Academic Probation .	<ul style="list-style-type: none"> After completion of the mandatory associated courses
PROGRAM REQUIREMENTS	Course work (6 or 12 units)	<ul style="list-style-type: none"> all requirements due within the first 3 years, except the IDP which is due within 18 months of program start
	Ethics training	
	Professional Development requirement <ul style="list-style-type: none"> IDP and 8 hours of professional development activities 	
	Rounds presentation	
	Rounds attendance (≥60% in each of year 1,2 and 3)	
PhD PROPOSAL	Student must submit a PhD proposal to the LMP Graduate Studies Committee	<ul style="list-style-type: none"> Within the first 2 years
CANDIDACY EXAMINATION	Candidacy examination	<ul style="list-style-type: none"> Within the first 3 years LMP expects completion within 6 months of acceptance of the PhD proposal Must be no less than six months prior to final examination
	Supervisor submits recommendation of Examining Committee and exam date/time/location to LMP Graduate Program Office	<ul style="list-style-type: none"> More than four weeks prior to exam
	LMP Graduate Program Office submits Notice of Examining Committee & Examination Date to FGSR	<ul style="list-style-type: none"> At least four weeks prior to the exam Copy of the Exam Notice and Instructions to Candidacy Examining Committee are sent to examiners and student
	Student submits Candidacy Exam document to the Examining Committee	<ul style="list-style-type: none"> At least two weeks prior to the exam
	After successful examination, submit Report of Completion of Candidacy Examination form	<ul style="list-style-type: none"> Within 7 days
	After an unsuccessful examination, department recommends course of action in writing to FGSR	<ul style="list-style-type: none"> Within 7 days

FINAL ORAL EXAMINATION	All Supervisory Committee members declare in writing that the thesis is adequate to proceed to the final oral examination by signing the Departmental Acceptance of Thesis	<ul style="list-style-type: none"> Submit prior to setting examination date and before the thesis is sent to the external examiners
	Supervisor should make contact with a potential External Examiner to gauge willingness to participate and determine availability. Thought should be given to the composition of the rest of the examining committee members and their availability.	<ul style="list-style-type: none"> Approximately three months prior to examination
	Supervisor submits Approve External Reader or Examiner for Final Doctoral Oral Examination form, the FoMD PhD External Examiner Conflict of Interest Checklist and examiner's CV to the LMP Graduate Program Office.	<ul style="list-style-type: none"> LMP Graduate Program Office submit form and supporting documents to Faculty of Medicine & Dentistry (Associate Dean, Research, Graduate Studies) at least 8 weeks prior to exam LMP Graduate Studies Director invites external examiner after approval by FoMD
	Supervisor submits recommendation of Examining Committee and exam date/time/location to LMP Graduate Program Office	<ul style="list-style-type: none"> More than four weeks prior to examination
	Student submits exam copy (pdf format) of thesis to LMP Graduate Program Office.	<ul style="list-style-type: none"> More than four weeks prior to examination
	LMP Graduate Program Office submits Notice of Examining Committee & Examination Date to FGSR	<ul style="list-style-type: none"> At least four weeks prior to the exam
	LMP Graduate Program Office sends the time, date, and location of the exam and exam copy of the thesis to examiners and exam chair. LMP Graduate Program Office sends the student's CV to examiners and exam chair. LMP Graduate Program Office sends the student's Student file snapshot to exam chair.	<ul style="list-style-type: none"> At least four weeks prior to examination At least two days prior to examination
	Exam chair reports examining committee's decision on Thesis Approval/Program Completion form	<ul style="list-style-type: none"> Submit form immediately after all signatures are obtained and within six months of the exam
	If required, submit Restrict Thesis Access Form	<ul style="list-style-type: none"> Request must be made prior to or at the same time as submission of the <i>Thesis Approval/Program Completion</i> form to FGSR, for a period of up to two years
Student submits an electronic copy of the thesis to FGSR	<ul style="list-style-type: none"> Within six months of examination 	

6 Supervisory Committee Meetings

It is ultimately the responsibility of the supervisor to ensure that the graduate student has annual supervisory committee meetings. All supervisory committee members are expected to attend.

The objectives of the meeting are to keep committee members apprised of progress, assess the project results and progress, define problems in the project and, in a positive fashion, find creative solutions and review the project objectives and focus.

Annual meetings are the minimum and, if possible, more frequent meetings are encouraged.

To report on the meeting, complete the FGSR Progress Report. (The FGSR Progress Report replaces the former LMP Graduate Student Supervisory Committee Meeting Report form.)

Within 7 days of the meeting, the student must submit the following to LMPgrad@ualberta.ca:

- pdf of completed FGSR Progress Report;

Note 1: The report goes to the student first. The student enters their information. Then the report goes to the supervisor(s). After the student and supervisor(s) agree on the report's content, the report goes to other supervisory committee members to read and add optional comments. Then the completed report goes to FGSR.

Note 2: The Progress Report is particularly important when decisions such as when to write the thesis are made. Filling out the report can save the supervisor and graduate student from potential conflicts later

- student's updated CV; and

- student's update on their progress (see 6.1 below) or slide presentation.

This package will be forwarded by the Graduate Program Office to the Graduate Studies Director if there are any issues or concerns. The package is added to the student's permanent file.

Progress Report – Additional Information

The FGSR Progress Report was launched in 2022 and is described in the [University of Alberta Calendar](#) (scroll down to "Progress Report").

Students in thesis-based programs must complete the FGSR Progress Report at least once every 12 months of the student's original program start date. A FGSR Progress Report form may be completed more than once annually; however, a maximum of one progress report can be submitted every four months.

The student and supervisor(s) will receive reminders from FGSR to complete the FGSR Progress Report in advance of any deadlines.

If a student has completed the annual FGSR Progress Report and wishes to complete another within the intervening 12 months, the student can request an additional Progress Report by emailing FGSR at graddean@ualberta.ca. In the email, include the student's name, CCID, and ID #; supervisor's name and CCID; and once established, the supervisory committee members' names and CCIDs.

The FGSR Progress Report is new for all. If you have any questions, please contact LMPgrad@ualberta.ca.

6.1 Recommended Format

Seven days prior to the meeting the student will provide all members of the Supervisory Committee with a

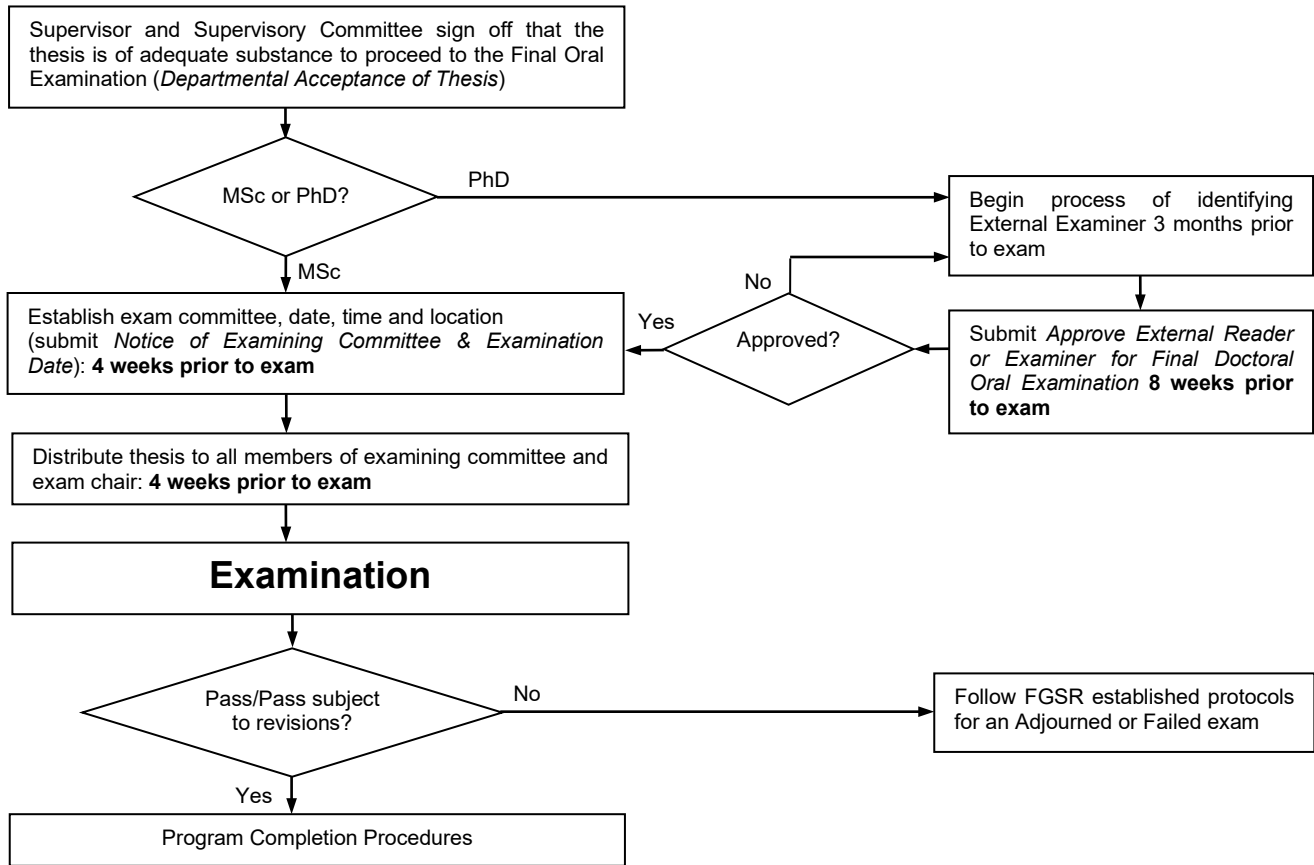
short update on their progress. This document should be approximately four pages in length and deal succinctly with the following issues:

- Background
- Project objective
- Hypotheses being tested since the last meeting
- Summary of research progress
- Difficulties or issues that have impeded progress (if any)
- Hypotheses to be tested in next 6-12 months
- Append list of courses taken (or being taken with grade attained)
- Copies of title page and abstract of any published papers, submitted manuscripts or abstracts written since last meeting.

The meeting format should generally follow the format described below:

- Brief overview of graduate student's progress by the supervisor (~5 minutes)
- Graduate student's presentation of research results (~20 minutes)
- Questions and answers
- Graduate student presentation of hypothesis to be tested in the following 6-12 months
- Discussion of the objectives and proposed approaches
- Graduate student presentation of proposed difficulties
- Discussion of how best to deal with the issues raised above
- Other points of discussion, e.g. professional development, etc.

7 FINAL EXAMINATIONS AND PROGRAM COMPLETION



When a graduate student has completed the research project and has developed a body of scientific data, the graduate student should, after explicit approval by the Supervisory Committee, begin writing the thesis.

Doctoral students are strongly encouraged to have peer-reviewed publications before completion of their degree. However, publication of thesis work is not a requirement for graduation.

There are two general formats available for a thesis: the traditional and the paper format. See FGSR's [Thesis Preparation, Requirements & Deadlines](#) for required thesis specifications (structure of the thesis, paper, margins, etc.).

The following should be noted regarding a graduate student's thesis:

- Only work done by the graduate student can be included in the thesis.
- Since many papers have multiple authors, the graduate student's contribution to each paper must be delineated.
- All collaborative efforts and technical assistance must be acknowledged in the thesis.

The final examination can be planned after completing an acceptable draft of the thesis.

7.1 Guidelines for Thesis Preparation

Students are encouraged to consult both [LMP Guidelines and Considerations for Thesis Preparation](#) as well as FGSR's [Thesis Preparation, Requirements & Deadlines](#).

7.2 Master's Final Examination

7.2.1 MSc Final Examination Timelines

The timeline for planning the final examination is long and it is important to consider the following points:

It is the responsibility of the supervisor to ensure that the student does not make exam arrangements.

- After the completion of an acceptable draft of the thesis (normally determined by the graduate student's supervisor but in exceptional circumstances by the Chair of the Department of Laboratory Medicine & Pathology or the Dean of the Faculty of Graduate Studies and Research), the thesis is submitted to the other members of the Supervisory Committee for their review (normally allow 1 to 2 weeks for the review of the thesis).
- Students are expected to use the [Thesis Preparation Checklist](#) and submit a copy of the checklist along with their thesis to their Supervisory Committee.
- The supervisor and all members of the Supervisory Committee must then certify, in writing, that they believe that the thesis is of sufficient quality to proceed to a thesis examination by signing the [Departmental Acceptance of Thesis](#) before the examination can be scheduled.
- Upon acceptance of the thesis, the Examining Committee is appointed. **More than 4 weeks prior to the exam**, the supervisor notifies the LMP Graduate Program Office of the composition of the Examining Committee, the exam chair, the date, time and location. *If the student wishes the exam presentation to be public (optional), this must be declared to the LMP Graduate Program Office at the time the exam is booked.*
- The LMP Graduate Program Office will generate and obtain signatures on the [Notice of Examining Committee & Examination Date](#) at **least 4 weeks** prior to the proposed examination date and submit the completed form to FGSR.
- LMP requires that the Members of the Examining Committee, including the chair, must receive the thesis **4 weeks prior to the examination**. The LMP Graduate Program Office undertakes distribution of the thesis; to facilitate this, the student sends the thesis (pdf format) to the LMP Graduate Program (LMPgrad@ualberta.ca) **more than 4 weeks before the exam**.
- After a successful exam, the graduate student should be aware of deadlines for submitting the thesis to the Faculty of Graduate Studies and Research for Spring or Fall convocations.

7.2.2 MSc Final Examining Committee

- In Laboratory Medicine & Pathology, the MSc Examining Committee has a minimum of four examiners who must all attend the examination, and consists of the graduate student's Supervisory Committee plus an additional arm's length examiner. The maximum size is five examiners ([University of Alberta Calendar](#)).
- An arm's length examiner ([University of Alberta Calendar](#)) is knowledgeable in the field and comes fresh to the examination. They must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the University, nor be related to the student or supervisor(s).

The arm's length examiners should not be a former supervisor or student of the supervisor(s).

Except in special circumstances (fully justified in writing to the Dean of the department's Faculty), an arm's length examiner should not be an active collaborator of the supervisor(s)

- **At least half** of the examiners on every examining committee must hold a degree that is equivalent to or higher than the degree being examined.
- **At least half** of the examiners on every examining committee must meet the employment requirement: current or retired tenured or tenure-track Faculty, current or retired Faculty Service Officer, or current Special Continuing ([Academic Staff Categories A1.1, A1.3, C1.1](#)). Note: Examiners with clinical appointments are permitted, but do not satisfy this employment requirement.
- The exam is chaired by the LMP Graduate Studies Director or designate. A designate must be a faculty member in the Department of Laboratory Medicine & Pathology who is not the student's supervisor or a member of the examining committee.

[Conflict of interest guidelines](#) must be followed. It is a best practice to request examiners and the chair declare any potential conflicts of interest prior to approval of the examination committee. Where potential conflicts of interest emerge, the matter may be referred to an Associate Dean at FGSR for advice on how best to manage unavoidable conflicts of interest ([University of Alberta Calendar](#)).

7.2.3 MSc Final Examination Guidelines

- The MSc final exam (thesis defense) normally involves an initial 20 - 30 minute presentation by the graduate student of their thesis work followed by two rounds of questions. A public presentation is optional and should be declared at the time the exam is booked.
- The role of the Chair of Examining Committee is to:
 - Moderate the proceedings;
 - Ensure that a fair examination occurs; and
 - Submit the exam report, minutes, and *Thesis Acceptance/Program Completion* form to the LMP Graduate Program Office.
- Exam questions usually are concerned with the thesis, but not exclusively so.
- The questions are set to enable the Examining Committee to form an opinion on the quality of the candidate's thesis work as well as his/her capability to comprehend its significance in the context of the field.
- Thus, both the document and the candidate are being examined.

7.3 PhD Final Examination

7.3.1 PhD Final Examination Timelines

The timeline for planning the final examination is long and it is important to consider the following points:

It is the responsibility of the supervisor to ensure that the student does not make exam arrangements.

- After the completion of an acceptable draft of the thesis (normally determined by the graduate student's supervisor but in exceptional circumstances by the Chair of the Department of Laboratory Medicine & Pathology or the Dean of the Faculty of Graduate Studies and Research), the thesis is submitted to the other members of the Supervisory Committee for their review (normally allow 1 to 2 weeks for the review of the thesis).

- Students are expected to use the [Thesis Preparation Checklist](#) and submit a copy of the checklist along with their thesis to their supervisory committee.
- The supervisor and all members of the Supervisory Committee must then certify in writing that they believe that the thesis is of sufficient quality to proceed to a thesis examination by signing the [Departmental Acceptance of Thesis](#) before the examination can be scheduled. The Faculty of Graduate Studies and Research requires this certification and it should be done before an external examiner is selected or a date for the exam is set.

The interpretation endorsed by the Department of Laboratory Medicine & Pathology is that the thesis is of a textual quality equivalent to that of a manuscript being submitted for publication to a high quality journal and that the committee members are comfortable with the scientific content of the thesis.

- Once the thesis has been approved by the Supervisory Committee, and **approximately 3 months prior to the examination**, an External Examiner can be identified by the graduate student and supervisor. The supervisor contacts the potential examiner to determine whether they would be prepared to act as an examiner for this thesis and determine approximate dates for the exam.
- **A lead-time of two months** before the exam date should be allowed for the approval of a prospective external examiner.
- The supervisor nominates the External Examiner submitting the [Approve External Reader or Examiner for Final Doctoral Oral Examination](#), the potential examiner's CV (electronic format), as well as the [FoMD PhD External Examiner Conflict of Interest Checklist](#) to the LMP Graduate Program Office. The examiner's CV documents research competence and experience in supervising graduate students at the PhD level. The Faculty of Medicine and Dentistry approves the nomination; the LMP Graduate Studies Director sends the letter of invitation.
- The student or supervisor may not communicate directly with the external examiner about thesis content prior to the examination.
- After approval of the external examiner has been received, the Examining Committee should be appointed. The supervisor notifies the LMP Graduate Program Office of the composition of the Examining Committee, the exam Chair, the date, time and location. The LMP Graduate Program Office will generate and obtain signatures on the [Notice of Examining Committee & Examination Date](#) **at least 4 weeks** prior to the proposed examination date and submit the completed form to FGSR.
- The Members of the Examining Committee, including the chair, must receive the thesis **4 weeks** prior to the examination. The LMP Graduate Program Office undertakes distribution of the thesis; to facilitate this, the student sends the thesis (pdf format) to the LMP Graduate Program (LMPgrad@ualberta.ca) **more than 4 weeks before the exam**.
- The graduate student should be aware of deadlines to be met for submitting the final document to the Faculty of Graduate Studies and Research for Spring or Fall convocations.

7.3.2 PhD Final Examining Committee

- According to FGSR policy, the PhD final Examining Committee will consist of the Supervisory Committee (*ex-officio* examiners), to which at least two arm's length members are added, for a **minimum of five**. The maximum size is seven examiners ([University of Alberta Calendar](#)).
- An arm's length examiner ([University of Alberta Calendar](#)) is knowledgeable in the field and comes fresh to the examination. They must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the University, nor be related to the student or supervisor(s).

The arm's length examiners should not be a former supervisor or student of the supervisor(s).

Except in special circumstances (fully justified in writing to the Dean of the department's Faculty), an arm's length examiner should not be an active collaborator of the supervisor(s)

- One of the arm's length examiners must be an **external examiner** (a member from outside the University who attends the exam in person or via teleconference). External readers are not permitted by the Faculty of Medicine & Dentistry.

The External ([University of Alberta Calendar](#)):

Will be a recognized authority in the specific field of research of the student's thesis;

Will be experienced in evaluating doctoral area work; and

Must be in a position to review the thesis objectively and to provide a critical analysis of the work and the presentation.

It is essential that the External not have an association with the student, the supervisor, or the department within the last six years as this could hinder objective analysis. For example, a proposed External who has within the last six years been associated with the student as a research collaborator or coauthor would not be eligible. Also, a proposed External must not have had an association within the last six years with the doctoral student's supervisor (as a former student, supervisor, or close collaborator, for instance).

Under normal circumstances the same person will not be used as an External at the University of Alberta if that External has served in the same capacity in the same department at this University within the preceding two years; this does not preclude an External serving in another department.

- The exam is chaired by the Graduate Studies Director or designate. A designate must be a faculty member in the Department of Laboratory Medicine & Pathology.
- Examination chairs for doctoral examinations are not to be examiners and their sole role is as chair of the examination.
- **At least half** of the examiners on every examining committee must hold a degree which is equivalent to or higher than the degree being examined.
- **At least half** of the examiners on every Examining Committee must meet the employment requirement: current or retired tenured or tenure-track Faculty, current or retired Faculty Service Officer, or current Special Continuing ([Academic Staff Categories A1.1, A1.3, C1.1](#)). Note: examiners with clinical appointments are permitted, but do not satisfy this employment requirement.

[Conflict of interest guidelines](#) must be followed. It is a best practice to request examiners and the chair declare any potential conflicts of interest prior to approval of the examination committee. Where potential conflicts of interest emerge, the matter may be referred to an Associate Dean at FGSR for advice on how to best manage unavoidable conflicts of interest ([University of Alberta Calendar](#)).

7.3.3 PhD Final Examination Guidelines

- The candidate is required to present a public seminar based on the thesis, usually just prior to the final exam.
 - Members of the Examining Committee must attend the public seminar and any member of the University community and other guests are free to attend the seminar and question the candidate on any aspect of the presented research during the question period following the seminar.
 - The Chair of the examination will moderate the question period so that it does not result

- in the discussion of material that is more appropriate for the examination.
 - The presentation plus questions is generally approximately one hour long.
 - Members of the Examining Committee (including the supervisor) must refrain from questions and comments during the presentation and question period.
 - Immediately after the seminar, the Examining Committee convenes for the examination, which typically lasts 2-3 hours.
- Exam questions usually are concerned with the thesis but do not need to deal exclusively with the thesis.
 - The questions are set to enable the committee to form an opinion on the quality of the candidate's thesis work as well as his/her capability to comprehend its significance in the context of the field;
 - Thus, both the document and the candidate are being examined.
- The role of the Chair of Examining Committee is to
 - Moderate the proceedings;
 - Ensure that a fair examination occurs; and
 - Submit the exam report, minutes, and *Thesis Acceptance/Program Completion* form to the LMP Graduate Program Office.

7.4 Teleconferencing and Attendance of Examiners at the Final Examination

- All examiners must be present at the final examination ([University of Alberta Calendar](#)).
- The presence of all examiners "in person" is, however, not necessary. Prior arrangements may be made to allow an examiner (frequently the External Examiner in the case of PhD final exams) to participate through teleconferencing, recognizing that the teleconferencing examiner does not have the opportunity to visually inspect diagrams or documents that are produced during the examination. The term 'teleconferencing' is used here generically to include all forms of distance conference facilitation including telephone, video and electronic communication. Examiners participating in examinations by this means are considered to be in attendance.
- If the department has warning that any member of the examining committee cannot attend the examination, the department should contact the Graduate Program Director or Associate Dean of the FGSR for advice. The situation will be dealt with on a case-by-case basis, but it may be necessary that the examination be postponed, or the examiner replaced.

7.5 Outcomes of MSc and PhD Final Examinations

The decision of the Examining Committee will be based both on the content of the thesis and on the student's ability to defend it. The final examination may result in one of the following outcomes:

- Adjourned
- Pass
- Pass subject to revisions
- Fail

There is no provision for a final examination to be "passed subject to major revisions".

If the Examining Committee fails to reach a decision, the department will refer the matter to the Dean, FGSR, who will determine an appropriate course of action.

Outcomes are detailed in the University of Alberta Calendar:

- [Master's exam](#)
- [PhD exam](#).

7.6 Final Examination Protocol

For Master's final examinations:

- a. there is no requirement for a public presentation of their research. MSc students deliver a brief presentation (20-30 minutes) of their research during the closed examination.

OR

- b. students may choose an optional public presentation of their research (20-30 minutes). The department must be advised of the public presentation when the exam is booked, i.e. at the time the exam notice is signed by the supervisor. The presentation can be open to the public with a department notice sent to faculty and trainees, or can be limited to a smaller group.

For PhD final examinations, a public presentation (~45 minutes) is required and precedes the closed portion of the examination.

LMP recommends the following protocol for the Final Examination:

1. At the beginning of the exam, the Chair introduces the graduate student and the Examining Committee members.

PhD students, and MSc students who have opted for a public presentation, deliver their presentation at this time. Only members of the public are invited to ask questions at the end of the presentation. After the question period, they are asked to leave the room.

2. The student is then asked to leave the room. Copies of the student's CV and University of Alberta transcript are distributed, and the committee reviews his/her undergraduate background and graduate program.
3. The Examining Committee discusses and agrees upon the examination format, specifying the sequence of the events including:

- a. the order of questioning (usually, the most external to least external):
 - i. the arm's length member(s),
 - ii. the Supervisory Committee members, and
 - iii. the graduate student's supervisor(s).

The supervisor does not usually ask questions except for the purpose of clarification.

The Chair primarily moderates the examination process, but may ask questions as well.

- b. the number of rounds of questioning and the length of each round:

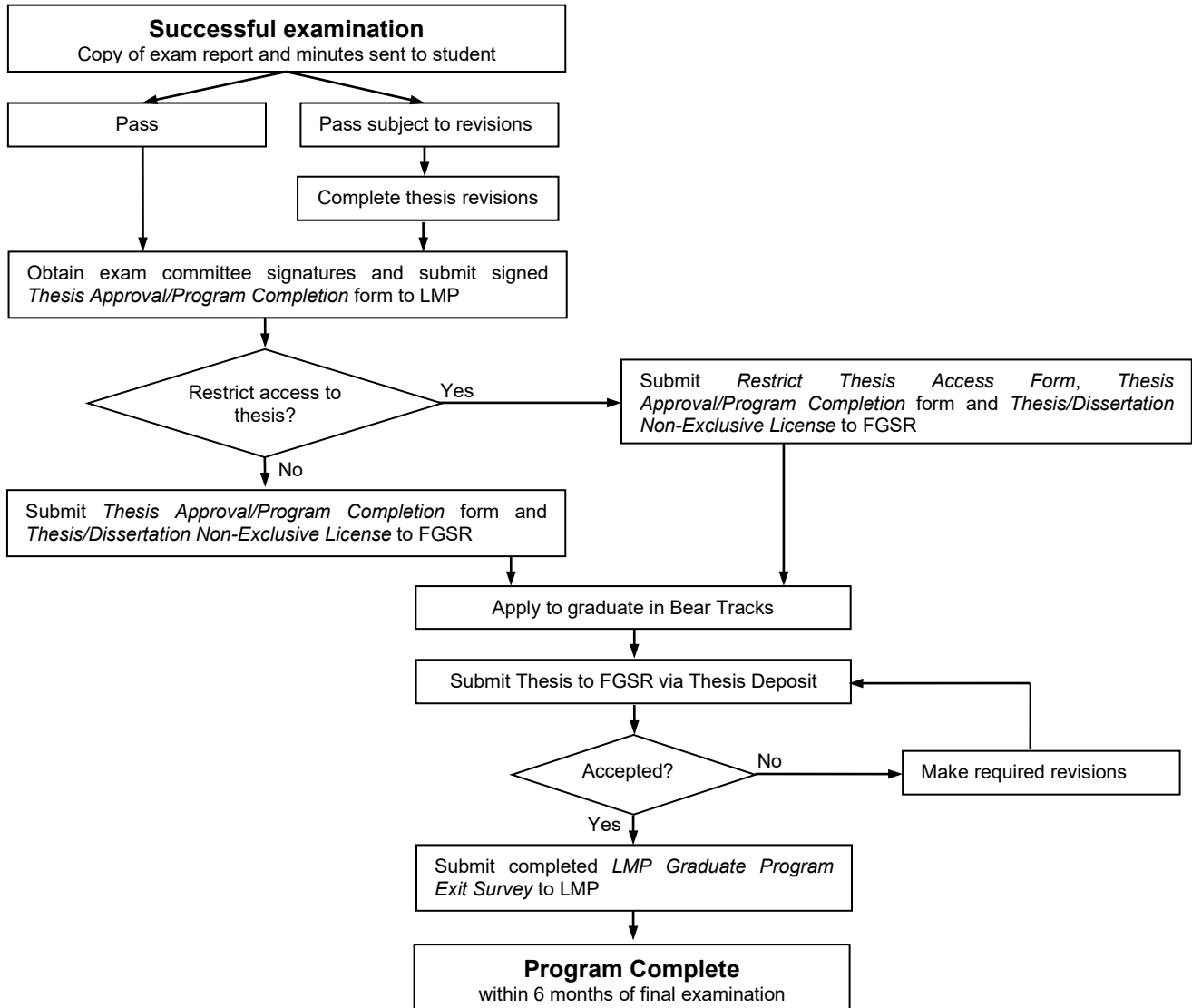
Usually two rounds of questions, with 15 minutes per examiner for the first round and 5 minutes for the second round. Additional rounds of questions are optional. There will be a brief break (5-10 min) after the first round of questions.

The committee also determines whether interruptions by other examiners will be permitted. If yes: when a pertinent point arises, another examiner may interrupt with a question/brief comment. This time will count as part of that examiner's time allotment.

4. The graduate student is then asked to rejoin the Examining Committee, the examination format is explained to the student, and the examination begins.
 - a. MSc students who did not opt for a public presentation deliver their research presentation (20-30 min).

- b. For PhD students and MSc students who opted for a public presentation, questioning begins immediately following the explanation of the examination format.
5. The agreed upon number of rounds of questioning follows (with the Chair keeping a record of the questions asked), after which the student may ask questions and offer comments or clarifications regarding the examination.
6. The student is asked to leave the room taking their personal belongings including electronic devices with them.
7. The Chair poses two rounds of questions to the Examining Committee:
 - a. First round: What is the opinion of each examiner (strengths and weaknesses) on the quality of the thesis, the oral presentation, and the defence?
 - b. Second round: What is the recommendation of each examiner for the outcome?
8. A formal vote is conducted as to the outcome of the examination. The [possible outcomes](#) are Adjourned, Pass, Pass with revisions, or Fail (with several subsequent options).
9. The graduate student is recalled and given the outcome and feedback on the examination.
10. The Chair completes the required paperwork and submits it to the LMP Graduate Program Office within 5 working days of the examination.

7.7 Program Completion Procedures



Throughout this program completion period, the student is reminded to watch for [pertinent deadlines](#), both those relating to registration/tuition costs, and those relating to convocation.

Subsequent to a successful final examination:

- The LMP Graduate Program Office will provide the student with a copy of the final exam report and minutes.
- When the exam outcome is “Pass”, the *Thesis Approval/Program Completion* form is signed by all committee members at the time of the exam and submitted to the LMP Graduate Program Office immediately thereafter.
- When the exam outcome is “Pass subject to revisions”, the student completes the final thesis revisions as outlined in the exam report.

When final thesis revisions have been approved by the supervisor(s) and any other committee member who withheld signature at the time of the exam, obtain the required signature(s) on the *Thesis Approval/Program Completion* form and submit the form to the LMP Graduate Program Office. (The *Thesis Approval/Program Completion* form is held by the Graduate Program Office

until needed for signatures.)

- The LMP Graduate Program Office submits *Thesis Approval/Program Completion* form to FGSR or the student may arrange to pick the form up and deliver to FGSR in person.
- If there is a need to restrict access to the thesis, the [Restrict Thesis Access Form](#) must be submitted prior to or at the same time as the *Thesis Approval/Program Completion* form.
- Apply to graduate in [Bear Tracks](#) (before submission of thesis).
- Once the *Thesis Approval/Program Completion* form has reached FGSR, the student may submit the [University of Alberta Thesis/Dissertation Non-Exclusive License](#) form to FGSR. Alternatively, the student may choose to take the *Thesis Approval/Program Completion* form, the Request to Restrict Access to a Thesis form (if needed), and the non-exclusive license form to FGSR in person at the same time, after which the thesis can be submitted.
- After submission of all forms to FGSR, the thesis can be submitted to [Thesis Deposit](#). If FGSR requires revisions to the thesis (typically formatting issues), the student will receive an email with instructions for modifications and re-submission.
- Once approved, the thesis will be available in [ERA](#) (Education & Research Archive--the University of Alberta Libraries' digital repository), but only \after the student's convocation ceremony or after the date approved on the *Restrict Thesis Access Form*.
- Students will be invited to participate in an exit survey. Their input and feedback will help to improve the overall learning experience of future students in the LMP graduate program.

Students are encouraged to attend the [convocation ceremony](#) held in their honour. The student's degree is conferred at this ceremony. The parchment (the official documentation of the student's academic credential containing the student's name, degree/specialization and academic honors if applicable) is given at this time. Students unable to attend Convocation may pick up their parchment in person during specified dates following the ceremony; if it is not picked up, it will be mailed to the current address on the student record.