

PROGRAM MILESTONES

Year 1:

Within the 1st month:

- Read the Department of Pathology Graduate Program Supplementary Regulations- (Appendix A)
- Decide on courses to be taken (in consultation with supervisor)
- Establish advisory committee membership

Within 3 months:

- Hold first committee meeting to discuss project outline/first steps and course choices

6 month-1 year:

- Complete 6-9 credits of coursework including Introduction to Pathology PATH7020 which is offered every other year in the winter term.
- Apply for external studentship funding
- Hold second committee meeting to assess progress

Year 2:

- Complete 0-6 credits of coursework, including Introduction to Pathology PATH7020 which is offered every other year in the winter term.
- Present at the Department of Pathology research rounds
- Hold third committee meeting to discuss M.Sc. thesis outline
- Finish experimental work and thesis writing
- Write and defend M.Sc. thesis (may spill over into 3rd year)

Year 3:

- Finish experimental work and thesis writing
- Present at the Department of Pathology research rounds
- Write and defend M.Sc. thesis

THE ADVISOR (from the Academic Graduate Calendar 2014)

4.5 Student's Advisor/Co-Advisor

Each student should have an advisor upon entry into the program, and must have one assigned no later than one term following registration. The advisor must:

- ***hold at least a Master's degree or equivalent***
- ***be a member of the Faculty of Graduate Studies,***
- ***have expertise in a discipline related to the student's program, and***
- ***must hold an appointment in the student's unit.***

It is the responsibility of the unit Head to determine whether faculty members meet these criteria, and also to report to the Dean of the Faculty of Graduate Studies on equivalency as necessary. Any exceptions or special circumstances must be recommended by the unit Head and approved by the Dean of the Faculty of Graduate Studies who considers each case on an individual basis.

In special circumstances, an advisor and co-advisor, upon approval of the unit Head may advise a student. The co-advisor must meet all of the same qualifications and expectations as the advisor. Together the advisor/co-advisor shall fulfill the role of advisor. When an advisor and co-advisor are assigned, together they shall fulfill the role of the advisor (that is, neither shall fulfill any other advisory or examining committee membership requirements for that student). One advisor must be identified as the primary advisor; however, both co-advisors' signatures are required on all documents where the advisor's signature is required.

The advisor/co-advisor will advise the student on a program of study, direct research, and supervise the thesis or practicum work.

The advisor and student must discuss, and complete, the Faculty of Graduate Studies Advisor Student Guidelines (ASG) prior to the commencement of any research and no later than the submission of the first Progress Report for the student. The advisor and the student are required to sign the agreement; if the parties cannot agree on any component(s) of the ASG, the matter should be referred to the unit Graduate Chair, Head of the unit or the Dean of the Faculty of Graduate Studies.

Should, during the student's program, the relationship between the student and advisor significantly deteriorate, the matter should be referred to the unit Graduate Chair, the Head of the unit or to the Dean of the Faculty of Graduate Studies.

All students should consult unit supplemental regulations for specific details regarding advisor/co-advisor requirements.

THESIS ADVISORY COMMITTEE

4.6.1 Thesis/Practicum Route

Advisory committees are normally selected by the advisor in consultation with the student and should consist of individuals whose expertise is consistent with that necessary to provide additional advice to the student during his/her research program. **The advisory committee must consist of a minimum of three members (including the advisor/co-advisor), two of whom must be members of the Faculty of Graduate Studies, one of whom must hold a primary appointment from within the unit and one of whom must hold no appointment within the unit.** Advisory committees may include one non-voting guest member who has expertise in a related discipline but is not a member of the Faculty of Graduate Studies. **The composition of, and any changes to, the advisory committee, including the advisor/co-advisor, must be approved by the Faculty of Graduate Studies.** The advisor/co-advisor is the Chair of the advisory committee.

Additional specifications regarding the advisory committee are found in the unit supplemental regulations and students should consult these regulations for specific requirements.

Recommended actions to take regarding student and advisory committee:

The composition of the advisory committee is established by the Advisor, in consultation with the student, within 1 month of program commencement.

The names of the members of each committee should be sent to the Departmental Administrative Assistant who will forward them to the Chair of Graduate Studies and include them in the student's file.

Within the first 3 months of the Program, advisory committee members should be presented with an one-page outline of the proposed research. This outline should be written by the student in consultation with the thesis supervisor.

It is strongly recommended that the first advisory committee meeting be held within 6 months of starting the program. The advisory committee must approve the proposed thesis project and will provide constructive discussion on the research project and other aspects of the student's program and development.

Fall Reviews (not necessary for Pathologists' Assistant Students)

The Department of Pathology requires that students undergo a review in the Fall of each year except in the first year of admittance. The purpose of this review is to provide the student with an opportunity to determine whether they are meeting the expectations of the program. The Fall Departmental Reviews will be scheduled between November 1 and November 30 of each year that a student is enrolled in the program. Master's students who have submitted their thesis for distribution and examination by November 1 will not need to be evaluated that year.

The Review Committee will consist of the Student's Advisory Committee plus the Chair of the Graduate Student Committee, or his/her designate, acting as Chair. The examination session will not be more than one hour in length.

The student is not expected to make a formal presentation as this review will simply follow an oral questions and answers format. Students should be prepared to start the session with a ~five minute description of their research project. The questions will relate to what the student is learning with respect to his/her research project and course work. The student will be expected to answer questions related to the rationale, background literature, experimental approaches, technical hurdles, and significance of their research project. Areas of general background related to the project and notable recent advancements in their field are also examinable. Each examiner will complete an evaluation form, assessing the student's knowledge, verbal skills, ability to use and organize facts, and answer questions directly. Areas of perceived strengths and weaknesses, as well as recommendations for improvement will be clearly pointed out to the student in a report. The report will be given to the student and the Chair of the Graduate Student Committee.

Faculty of Graduate Studies Annual Progress Reports

Student progress shall be reported *at least* annually to the Faculty of Graduate Studies on the “Progress Report” form (http://umanitoba.ca/faculties/graduate_studies/forms/index.html).

Students who fail to maintain satisfactory performance may be required to withdraw on the recommendation of the Graduate Chair/unit Head to the Dean of the Faculty of Graduate Studies on the “Progress Report” form. Two consecutive “in need of improvements” normally requires the student to withdraw. (Please see Section 4.7 of the Academic Calendar & Catalog)

<http://crscalprod1.cc.umanitoba.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&loaduserredits=False>)

The student Progress Report is normally completed after a meeting of the student’s thesis advisory committee. This report is due in FGS by June 1 of every year. A copy of this report is required in the Department of Pathology office by May 31 of each year. Failure to file this report results in student holds.

A 2-3 page written summary of progress¹ must be submitted one week in advance of the meeting (see guidelines on preparing the progress report). This summary must be prepared by the student, (usually also pre-reviewed by the Advisor to ensure agreement between the two) and must:

- (i) summarize the progress made in the year to date and
- (ii) provide an outline of where the student’s research will be focused in the coming year.

This summary must be circulated to the entire advisory committee by email **at least one week prior to the seminar**. This allows the meeting to be spent in discussion rather than a long formal presentation.

Required signatures on this report are: Advisor, Student, and Department Chair.

Note: It is recommended that these reports be filed even for students who are planning to graduate in October as it is easier to do the reports in the spring/summer than to do them in the Fall when individuals may not be readily available.

Students who are intending to graduate but do not make deadlines for an October graduation will have to reregister for the Fall term and a Progress Report will be required in their file at FGS before the registration is complete. Failure to complete these requirements results in the student being discontinued.

Guidelines for the first committee meeting to be held within 3 months

Purpose:

- 1) “Meet and greet” to familiarize the student and committee members
- 2) Discuss academic and career goals
- 3) Discuss initial formulation of the ideas for the research project and outline the first steps to be taken and any hurdles that need to be overcome

Suggested time: 30-45min Suggested format:

- Supervisor convenes/chairs meeting
- Committee members introduce themselves / academic background to student
- Student introduce themselves / academic background to committee
- Student and supervisor present general outline of the project and research methods for discussion (with slides if needed, but not intended as a formal presentation)
- Student presents steps taken so far (eg. reading, lab, courses, etc.)
- Discussion
- Finish with outline of the expectations for the next committee meeting

Is it expected that detailed questioning of students regarding project background and methods be kept to a minimum at the first meeting, whereas expectations regarding what areas the student should become familiar with should be made clear

Guidelines for subsequent committee meetings¹

Purpose:

- 1) Provide a detailed outline of academic/research goals and progress made to date
- 2) Provide a detailed outline of short and long term objectives over the next 1-2 years
- 3) Opportunity for student to self-evaluate academic/research progress
- 4) Opportunity for committee members to evaluate student’s academic/research progress (including project- specific and general knowledge)

Suggested time: 60-90min Suggested format:

- supervisor convenes/chairs meeting
- student presents brief update on their progress (including research project synopsis, courses, writing/publication, program milestones, other professional development activities)¹
- student presents ~20min “seminar-style” summary of their research results and future plans
- Committee discussion and questions, moderated by supervisor if needed

MSc. THESIS GUIDELINES

A thesis is a formal comprehensive, written dissertation describing original research on a chosen subject. This work may include, but not be restricted to:

- Investigation aimed at a discovery and/or interpretation of facts;
- Challenge and/or possible revisions of accepted theories or laws; and
- The ordering and synthesizing of existing findings to support a conclusion which could open up new research directions.

Please read the Faculty of Graduate Studies guidelines as found on FGS' website below:
http://umanitoba.ca/faculties/graduate_studies/thesis/guidelines.html#submission

Prior to thesis preparation, students are also advised to review previous M.Sc. theses for style. They are kept in 401 Brodie Centre. See the administrative staff if you would like to borrow one.

4.8.1.1 Thesis vs. Practicum – from the Academic Calendar

Students must demonstrate their mastery of the field and that they are fully conversant with the relevant literature through their thesis/practicum.

A practicum differs from the thesis in its emphasis on the application of theory, it is however similar in scope, span, and rigour. The rigour required for the practicum is equal to that required for the thesis. The practicum takes the form of an exercise in the practical application of knowledge and skill. It usually involves the careful definition of a problem, the application of appropriate knowledge and skills to the problem, and a report of the results in a manner suitable for evaluation by an examining committee. Individual units have specific requirements for graduation and students should consult unit supplemental regulations for specific requirements.

The thesis is developed under the mentorship of the advisor/co-advisor. Individual units may have specific guidelines regarding the thesis proposal and its acceptance by the student's advisory committee/unit Head; students should consult unit supplemental regulations for specific requirements. Research must be approved by the appropriate Human Research Ethics Board or Animal Care Committee, if applicable, before the work has begun on the thesis research.

Briefly, the thesis includes:

1. **Title Page** - the title must be a meaningful description of the content of the research. The author's name should be in full, identical to the name under which they are registered and be consistent on all other documents. The title page should contain the following information: the title of the thesis or practicum, the name of the University, the degree for which the thesis or practicum is submitted, the name of the department, the full name of the author, and the copyright notation ©. This universal copyright symbol must be included on the title page².
2. **Abstract** - The abstract is expected to provide a concise account of the thesis or practicum. Although 150 words for Master's theses/practica is the maximum length, abstracts should generally be shorter than this. An abstract contains a summary of the statement of the problem, method, results, and conclusions.
3. **Introduction** to the area of pathology in which the student was trained (This should consist of a comprehensive and critical assessment of the literature at the time the project was initiated, typically ~20-40 double spaced pages in length), at the end of the introduction, a clear statement of the rationale, overall goals, specific objectives and hypotheses to be tested in this project along with a summary of the major findings (2-5 pages).
4. **Materials and Methods** section should have sufficient details to allow others to repeat the procedures.
5. **Results** with figures and tables must be well labeled to allow interpretation of the data without constant reference to the text.
6. **Discussion** with a summary of the major findings made, the candidate's critical assessment of the strengths and weaknesses of the approaches taken, data obtained, and future directions for the research.
7. **References** should follow an approved format.

Experimental work carried out by individuals other than the candidate should be explicitly identified in the legend of the table or figure in which it is presented.

Use of Copyrighted Material

If the thesis or practicum includes copyrighted material, permission must be obtained from the copyright holder. FGS has developed this form that can be utilized when requesting the use of copyrighted material.

In some cases, copyright holders prefer to use their own permission forms and/or will provide their permission electronically. Both of these are acceptable by FGS.

Images or more than a reasonable extract (according to the Copyright Act) of another person's work must be accompanied by written permission from the copyright holder(s). Obtaining the permission

may take a considerable amount of time; therefore, this must be taken into consideration when meeting a thesis submission deadline. A reference to written permission having been obtained must be included under the image or text. The reference should also include the date the permission was granted, and the name/title of the copyright holder(s). The original form(s) signed by the copyright holders should be retained by the student with a copy provided to FGS at the completion of the thesis/practicum.

The thesis/practicum cannot be accepted by FGS if permission has not been obtained. It is important that the student and their Advisor ensure that the permission has been granted. In some cases the copyright holder cannot be located or the cost is prohibitive to using the text or image. In these situations the text or image may have to be omitted from the thesis/practicum.

Subsequently, information on where the reader can locate the image or text should be included, such as the URL, title of book/journal, volume and issue number, page number, publisher, and date of publication. A description of the purpose or significance of the text or image should be provided.

MSc. Thesis Examination and the Examining Committee

The Student, Advisor, and Examining Committee are urged to read Section 4: Master's Degrees, General Regulations in the Academic Guide, Academic Calendar & Catalog and particularly 4.8.1.2 Examining Committee which is available online below. The subsequent pages are taken from the Academic Guide as well as the Pathology Supplemental Regulations.

<http://crscalprod1.cc.umanitoba.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=240&chapterid=2302&loadusercredits=False>

4.8.1.2 Examining Committee

The advisor will recommend an examining committee to the unit Head for approval, which shall then be reported to the Faculty of Graduate Studies on the “Master's Thesis/Practicum Title and Appointment of Examiners” form

(http://umanitoba.ca/faculties/graduate_studies/forms/index.html). This form must be approved by the Dean of the Faculty of Graduate Studies prior to the distribution of the thesis

Under normal circumstances, the examining committee will be the same as the advisory committee unless otherwise stipulated in the unit's Supplemental regulations. **The examining committee must consist of a minimum of three members (including the advisor), two of whom must be members of the Faculty of Graduate Studies, one of whom must hold a primary appointment from within the unit and one of whom must hold no appointment within the unit.** All examiners must be deemed qualified by the unit Head and be willing to serve. **The composition of, and any changes to, the examining committee, including the advisor/co-advisor, must be approved by the Faculty of Graduate Studies.** Individual units require specific requirements for examination and students should consult unit supplemental regulations for specific requirements.

Students are required to allow 4 weeks for members of their advisory committee to read their thesis or practicum prior to the oral exam. This is very important as your advisory committee members may be involved in a variety of professional activities.

The Head of the unit arranges for the distribution of the thesis/practicum to the examiners. **It is the duty of all examiners to read the thesis/practicum and report on its merits according to the following categories:**

- **Acceptable, without modification or with minor revision(s); or**
- **Acceptable, subject to modification and/or revision(s); or**
- **Not acceptable.**

The examiners must provide copies of their written comments to the Chair of the Department of Pathology Graduate Studies Committee at least one week prior to exam. The Chair will forward the written comments to the student prior to the exam.

Following the advisory committee review of the thesis or practicum, a date will be established for the thesis/practicum defense.

Oral Examination

A student has the right to an examination of the thesis/practicum if he/she believes it is ready for examination. It is the unit's responsibility to warn the student of any risk involved should he/she decide to proceed against the unit's recommendation.

The oral examination is open to all members of the University community and guests invited by the student.

The examining committee will normally consist of the members of the student's advisory committee. The Chair of the Graduate Program or designate will preside as Chair during the thesis/practicum defense.

All members of the examining committee should be present at the examination (see 4.8.1.3 Oral Examination)

The first part of the examination will consist of an oral presentation by the candidate, which should include a 20-30-minute summary of the salient points of the research findings. This presentation will be followed by the examination of the candidate by the examination committee. This part of the examination should not normally exceed an additional 90 minutes. The Chair will be responsible for maintaining the relevance of questioning and ensuring that the time limits are not exceeded.

Following completion of the examination of the thesis/practicum, examiners will consider the oral examination and the written thesis/practicum. The examiners will also determine the nature of and procedures for approval of any revisions that will be required prior to submission of the thesis to the Faculty of Graduate Studies. The advisor is normally responsible for ensuring that revisions are completed according to the instructions from the examining committee.

The judgment of the examiners shall be reported to the Faculty of Graduate Studies in the qualitative terms "approved" or "not approved" on the thesis/practicum final report form (http://umanitoba.ca/faculties/graduate_studies/forms/index.html). Each examiner must indicate his/her opinion by his/her signature. *If two or more examiners do not approve the thesis, then the student is deemed to have failed the defense.*

The examining committee may recommend to the Faculty of Graduate Studies that the thesis is of sufficient merit to receive an award.

Failure

In the case of a failure of the thesis/practicum at the Master's level, a detailed written report will be prepared by the Chair of the examination committee and submitted to the Faculty of Graduate Studies, who will make the report available to the student and advisor/co-advisor.

In the event that the student fails the oral examination, a second examination will be scheduled within six months of the first examination.

A student will be required to withdraw when the thesis/practicum has been rejected twice at the stage where:

- The examining committee reports on the merits of the written thesis;
- The defence; or
- A combination of both stages.

The examining process should be completed within one month of distribution of the thesis/practicum.

Thesis Defense – the Role of the Chair

From the Department of Pathology Supplemental Regs:

For both Research and Pathologists' Assistant MSc programs: the MSc oral examination committee will consist of the members of the thesis/practicum examination committee and the Chair of the Graduate Program, or designate, who will serve as the Chair. The oral examination is open to all members of the University community and guests invited by the student. The first part of the examination will consist of an oral presentation by the candidate, which should include a 20-30-minute summary of the salient points of the research findings. This presentation will be followed by the examination of the candidate by the examination committee. This part of the examination should not normally exceed an additional 90 minutes. The Chair will be responsible for maintaining the relevance of questioning and ensuring that the time limits are not exceeded.

Submission of Final Copies of the Thesis and Practicum

The Academic Schedule in the Graduate Calendar provides dates by which theses/practica must be submitted to FGS in order to be eligible for graduation for a specific graduation period.

Following the approval of the thesis/practicum by the examining committee and the completion of any revisions required by that committee, the thesis, and where applicable, the practicum, must be submitted to the Faculty of Graduate Studies as follows:

- **One digital version submitted as an e-thesis at the MSpace website**

Students are encouraged to review the e-thesis submission requirements prior to creating a digital version. Electronic multimedia files or accompanying files that are part of an e-thesis should be posted to MSpace as separate files.

The digital copy of the thesis/practicum is required for the University Library and remains the property of the University of Manitoba.

The electronic version must be submitted in Portable Document Format (PDF), the conversion of which can be done at one of the Libraries' labs on campus. Students can request the Libraries to do the conversion at no charge.

Once the thesis/practicum has been converted to PDF, students can submit the file to MSpace (For information about Electronic Theses, contact Wendy.Prystenski@ad.umanitoba.ca, ph: 204.510.8063).

To submit an Electronic Thesis or Dissertation (ETD) or learn more about ETDs visit the MSpace website: <https://mspace.lib.umanitoba.ca/index.jsp>

Thesis/Practicum Submission Checklist:

- One (1) Electronic copy - Submit according to the instructions outlined on the [MSpace website](#). Ensure there are no missing pages.
- Submit the original [Thesis/Practicum Final Report Form](#) - http://umanitoba.ca/faculties/graduate_studies/media/final_report-masters.pdf this is signed by the student's committee once they have successfully defended and/or completed their thesis/practicum revisions. (Original hard copy must be sent to FGS).
- Submit the Thesis/Practicum Copyright License Form, the Contact Information Update form, and the Thesis Copyright Infringement Declaration Form contained [here](#). http://umanitoba.ca/faculties/graduate_studies/media/thesis_release-all.pdf
- Submit a copy of the Ethics Approval Letter received from the REB and any other pertinent access approval forms (if applicable).
- Submit a [permission to use copyrighted material](#) form (if required). This form indicates that copyright holders have given you permission to use copyrighted works in your thesis.

http://umanitoba.ca/faculties/graduate_studies/media/permission_to_use_copyright_material.pdf

- Ensure that the spelling of the title and author of the thesis/practicum is identical on the **Final Report Form**, the **Thesis Release Form** and the **Title Page** of the thesis/practicum (e.g.: all pages must read "John M. Smith" for the author's name).

Distribution of Thesis and Practicum to the Libraries

Library and Archives Canada

The official electronic version of the thesis which is submitted to MSpace will be harvested by Library and Archives Canada:

- The thesis or practicum will be made available by Library and Archives Canada on its Theses Canada Portal;
- The bibliographic record will be listed in Canadiana, Canada's national bibliography, published by Library and Archives Canada;
- The thesis or practicum will become part of the Library and Archives Canada collection of more than hundreds of thousands of theses/practica;
- Access to theses/practica submitted electronically will be provided through the Libraries' catalogue or directly through MSpace, and will be open to the world. MSpace theses will also be searchable via Library and Archives Canada, Google and Google Scholar.

Library and Archives Canada guidelines and copyright information is available on its [website](http://www.collectionscanada.gc.ca/thesescanada/index-e.html).
<http://www.collectionscanada.gc.ca/thesescanada/index-e.html>

Duplicating and Binding

Copies of theses can be bound at the Campus Copy Centre located in Rm. 118 University Centre. Binding should be the standard University hard-bound format: black cover with gold lettering, titles in capital letters. The Department pays for the Department copy and advisor(s) copy. The student pays for any other copies that he/she may wish to have bound.