UNIVERSITY OF ALBERTA

Leading with Purpose.

Graduate Handbook

Department of Renewable Resources

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This Graduate Handbook is the departmental implementation of the policies and procedures outlined by the Faculty of Graduate & Postdoctoral Studies (GPS) for graduate programs.

Every graduate student should be familiar with the sections of the Graduate Handbook that pertains to their specific program as well as the general guidelines.

For more information and details on policies and procedures that govern our graduate programs, consult the Graduate Program Manual maintained by the Faculty of Graduate & Postdoctoral Studies.

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1. General Responsibilities for Graduate Programs

Graduate programs are centered on improving student experience and enabling their academic progress and success. The most important determinant of the progress and success of a student's graduate program will be the talent and initiative shown by that student. Nevertheless, several other individuals and teams play an important role in facilitating the academic growth that enable students to achieve their goals and degree completion: the Supervisor, the Supervisory Committee, the Department (including the Graduate Committee and the Graduate Coordinator), the Faculty of Agricultural, Life & Environmental Sciences (ALES) including the Graduate Administrator, and GPS.

In this section:

- Faculty of Graduate & Postdoctoral Studies (GPS)
- Faculty of ALES Graduate office; including the Graduate Administrators
- Department of Renewable Resources; including the Graduate Coordinator
- The Graduate Committee
- The Supervisor
- The Graduate Student

1.1. Faculty of Graduate & Postdoctoral Studies (GPS)

GPS bears the ultimate responsibility and is the ultimate authority for issues related to graduate programs. Specifically, its responsibilities include admitting students; setting minimum entrance requirements and minimum academic standing requirements and ensuring that these are met; approving all changes to students' programs; approving appointment of supervisors, supervisory committees, and examining committees; submitting to the Council of the Faculty of Graduate & Postdoctoral Studies for approval changes affecting policy, general and degree regulations, and others.

1.2. Graduate Administrator at Faculty of ALES Graduate Office

The graduate administrator(s) within the ALES Graduate office have several key responsibilities including administrative work related to admission, scholarship applications, course registration, scheduling exams and final seminars, maintaining graduate student records and a database of student statistics, keeping abreast of program requirements, and distributing information to

students. The Graduate Administrator should be the first point of contact when students have queries about program-related matters and can be reached at grad.ales@ualberta.ca

1.3. Graduate Coordinator, Department of Renewable Resources

The Department plays an important role in graduate programs by overseeing the supervision of graduate students enrolled in its programs, developing its customized guidelines and rules for graduate programs that are consistent with the rules of GPS, making recommendations to GPS on numerous matters including admission of students, appointment of the supervisor and supervisory committee members, course and program changes, scheduling of examination dates, and others; and allocating and nominating students for awards.

Within the Department, the Graduate Coordinator chairs and makes executive decisions on behalf of the Graduate Committee and serves as the primary liaison between the Department and GPS. The Graduate Administrator and the Graduate Coordinator work together to monitor graduate student programs and administer scholarship nominations, awards and assistantships. They also advise on, clarify, resolve problems related to program requirements, procedures, and deadlines.

1.4. The Graduate Committee

The Graduate Committee provides input on policy to the Department, advice to the Graduate Coordinator, and a pool of neutral exam chairs for candidacy and final Ph.D. exams. The role of exam chair is not exclusive to only the current Departmental Graduate Committee membership, but former members of the Departmental Graduate Committee or other fairly-experienced academics within the Department can also provide the role of exam chair. Graduate Committee members also jointly adjudicate most internal awards within the Department and nominate students for a number of awards and scholarships within the Faculty, University and external opportunities.

As of September 2026, members of the Graduate Committee include:
David Olefeldt (Director, responsible for thesis-based programs)
Scott Nielsen (Director, responsible for course-based programs)
Diane Haughland
Carol Frost
Justine Karst
M Derek MacKenzie
Uldis Silins

1.5. The Supervisor

Although universities often use the terminology of "supervision", in many ways graduate supervision is more accurately described as "mentoring". The relationship between students and supervisors is usually close and long-lasting. The supervisor assists the student in planning a program, ensures that the student is aware of all program requirements, degree requisites, and general processes within the Department and the Faculty of Graduate & Postdoctoral Studies

(GPS), 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 students conduct their research in a manner that is as ethical, effective, safe, creative and productive as possible. In other words, graduate student supervisors are intellectual role models and academic guides. Specific supervisor responsibilities also include:

- Provides an environment for the student that is conducive to research and in which the student can grow intellectually;
- Provides 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 Graduate Program Manual;
- With the student, establishes a realistic timetable for completion of various phases of the program;
- Considers a graduate student a junior colleague;
- Ensures that there are sufficient material and supervisory resources for each graduate student under supervision;
- Works with the student to establish the supervisory committee as soon as possible after the start of the program and ensures that it maintains contact and formally meets at least once a year with the student;
- When going on leave or an extended period of absence, ensures that the student is adequately supervised by the provision of an acting supervisor. In the case of doctoral students, this should be a member of the supervisory committee;
- Ensures that the student is aware of the student's guidelines and, when necessary, assists the student in meeting these;
- Sets up committee meetings and examinations after consultation and with full knowledge of the student;
- Maintains open communication with the student concerning any problem; and in the event of a conflict in the supervisor-student relationship, discusses the issues with the student and Graduate Coordinator in a timely fashion (see Resolving Conflicts in Supervisor-Student Relationships in the Calendar).
- Review the thesis in both draft and final versions as well as candidacy statement when applicable.

1.6. The Graduate Student

The responsibility for producing an acceptable thesis ultimately rests with the graduate student. Graduate students are expected to take the initiative in designing and diligently implementing their research projects. If funding for a student's project comes from an external agency, that relationship may define partially or fully the research topic. In such instances, the supervisor must ensure that there is adequate flexibility to enable the students to explore their ideas. In the case of the Ph.D., the student must be able to demonstrate the ability to work independently. "***The essential requirement for the doctorate is the planning and carrying out of research of high quality leading to an advance in knowledge in the student's field of study.***" In the case of the M.Sc. degree, "***the thesis should reveal that the student is able to work in a scholarly***

manner and is acquainted with the principal works published on the subject of the thesis". Furthermore, graduate students should take primary responsibility for their graduate programs. They are expected to read the Calendar and any other relevant documents to become familiar with all regulations and deadlines relating to their programs. Students' responsibilities include:

- Ensuring that their registration is accurate and does not lapse;
- Submitting appropriate forms to the Department for signature and processing;
- Paying all fees required by the deadline dates set out in the Calendar;
- Maintain open communication with their supervisor and Graduate Coordinator concerning any problem, either real or perceived;
- Inform the supervisor regularly about progress and provide an oral and written report at annual supervisory committee meetings;
- Make research results accessible (beyond their appearance in a thesis) to an appropriate audience, in particular through presentations at conferences or outreach events and by submission of manuscripts to appropriate peer-reviewed journals; and
- Be aware of deadlines for possible scholarship applications, and to seek advice and assistance from the Department in making applications.

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2. General Requirements and Guidelines

In this section:

- 2.1. Academic Standing
- 2.2. Required Graduate Seminar Courses
- 2.3. Academic Integrity and Ethics Training Requirement
- 2.4. Professional Development Requirements
- 2.5. Thesis Requirements
- 2.6. Conduct of Oral Examinations

2.1. Academic Standing

Regardless of a student's category, the pass mark in any course taken for credit is a grade of C+. Thesis-based graduate students must maintain a minimum cumulative grade point average of 3.0 in order to remain in their program. Students who fail to maintain these minimum academic standing requirements as outlined by GPS and/or their graduate program will normally be required to withdraw unless the academic unit recommends a plan of remediation for the student to complete within a specified time period. Any such plan must be approved by the Dean of GPS. Course-based graduate students must achieve a cumulative grade point average of 2.7 in order to graduate. If a course-based student fails to achieve a GPA of 2.7 in their coursework, Graduate Coordinator approval is required to proceed to the capping research project.

2.2. Required Graduate Seminar Courses

The Department offers five graduate seminar courses:

- REN R 602 - Graduate Professional Skills (satisfies PD requirements, see 2.4. below)
- REN R 603 - Graduate Research Skills (contributes to PD requirements, see 2.4. below)
- REN R 604 - Graduate Research Seminar
- REN R 605 - Advanced Research Skills
- REN R 606 - Critical Thinking in Natural Sciences [officially starting 2027/28 - check for custom course number in 2026/27 with instructor Scott Nielsen]

For course-based Masters students, we recommend REN R 602 to satisfy their professional development requirement (see Section 2.4. below).

Thesis-based Masters students are required to take either REN R 602 or REN R 603. We recommend REN R 602 for those who wish to pursue a professional career, while REN R 603 is designed for those interested in a research career after graduation. Further, thesis-based Masters students are required to take REN R 604.

PhD students are required to take REN R 603, plus one additional seminar chosen from RENR 604, 605, or 606. [Effective Fall 2027, PhD students will be required to take two seminars from RENR 604, 605, or 606]

2.3. Academic Integrity and Ethics Training Requirement (*all students*)

Ethics and academic integrity training is ***mandatory*** for all UofA graduate students. The Department requires completion of this training ***by the end of the first academic semester*** of students' graduate programs.
Ethics and Academic Citizenship Requirement replaced the current Academic Integrity and Ethics Training Requirement in fall 2022; however, the Department now requires all new and continuing graduate students who have not already completed the previously required GET and CORE on-line courses to complete INT D 710 and/or INT D 720 as follows. The new Ethics and Academic Citizenship Requirement consists of two zero-credit, self-paced online courses: INT D 710: Ethics and Academic Citizenship (approx. 6 hours for ***both*** master's and doctoral students) and INT D 720: Advanced Ethics and Academic Citizenship (additional requirement for ***doctoral students only***; approx. 2 hours). Registration for these courses is available on Bear Tracks, and completion of these courses will appear on students' transcripts. There are no instructional fees associated with these courses.
Continuing graduate students who have already completed the previously required GET and CORE online courses already fully meet the Academic Integrity and Ethics Training Requirements for their graduate program.

2.4. Professional Development Requirements

Starting with students admitted in Fall 2016, GPS requires that all graduate students must complete the University of Alberta Professional Development Requirement, which includes the Individual Development Plan (IDP) and eight hours of Professional Development Activities. The Department requires that the IDPs (but not the activities) are completed within the ***first academic semester*** for students starting in the fall term, and within the ***first 12 months*** for students starting in the winter term. Guidance for developing the IDP is provided through the graduate seminar

courses REN R 602 (Graduate Professional Skills) and REN R 603 (Graduate Research Skills), a required seminar course for students in thesis-based programs (see 2.2 above). We recommend REN R 602 for those who wish to pursue a professional career, while REN R 603 is designed for those interested in a research career after graduation. Students may also audit relevant lectures in REN R 602 and REN R 603 and collect signatures for attendance to contribute to their Professional Development Requirement. Once students have completed the IDP and eight hours of activities, they must submit the appropriate documentation and a completion form to the Graduate Program Administrator.

2.5. Thesis Requirements

The Department endorses the concept of a thesis comprised of papers for publication for both M.Sc. and Ph.D. degrees. Theses with multiple papers should have an introductory chapter that provides an overall rationale for the thesis, a statement of the general thesis objectives, and a description of the chapter structure with their specific objectives. Following the data chapters, the thesis concludes with a comprehensive synthesis arising from the research. The synthesis may state overall scientific conclusions linking to the stated objectives, or it may discuss applications or implications arising from multiple data chapters. A thesis corresponding to a single publication does not need a chapter structure. Since most publications already conform to a traditional thesis format, the Department recommends a number of optional extensions that may include a longer introduction section, an additional literature review section, figures and tables that could not be included in the journal article, and an expanded conclusion section.

A ***master's thesis***, at a minimum, should reveal that the student 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. The expectation of the Department is that the contribution of a Master's thesis should be comparable to first-authored publication(s) in a reputable peer-reviewed scientific journal.

A ***doctoral thesis*** must embody the results of original investigations and analyses and be of such quality as to merit publication, meeting the standards of reputable scholarly publication; furthermore, it must be a substantial contribution to the knowledge in the student's field of study. The expectation of the Department is that the contribution of a doctoral thesis should be comparable to several first-authored publications in reputable peer-reviewed scientific journals.

We stress the intended meaning of the wording "comparable" when indicating these expectations as follows. There is no prescribed minimum count of chapters or papers, as the quality, originality, and scientific value of such contributions can be extremely variable. Data chapters are not required to be published, accepted, or submitted at the time of final examination. Co-authored contributions may be included as data chapters as long as they contribute to the overall thesis objectives. We endorse collaborative research among students, which may result in papers appearing in multiple theses. However, the Department requires that at least one data chapter in a doctoral thesis must be led and first-authored by the candidate. Further, the Department (as well as GPS) requires a thesis preface that describes the student's contribution to each data chapter, as well as the contribution of each co-author in published papers or planned manuscripts.

2.6. Conduct of Oral Examinations

Formal examining committees are required for thesis-based master's final exam, doctoral candidacy exam, and doctoral final exam. Members of these examining committees perform two functions: 1) they bring disciplinary knowledge and expertise to the assessment of the thesis, and 2) they ensure that the University's expectations are met regarding the conduct of the examination, adherence to all relevant policies, and the suitability of the thesis for the degree.

An examining committee includes the supervisor and supervisory committee member(s), and additional examiner(s). These added examiner(s) must not have been connected with the thesis research in any way, and should not be a former supervisor or student of the supervisor(s). In general, they should not have any significant professional collaboration or personal association with the student or the supervisor(s), including family and social relationships. They essentially come fresh to the examination. Outside the supervisor and supervisory committee member(s), there are three different categories of examiners:

- ***University Examiner***: is a member of the University of Alberta community who is knowledgeable in the field. Current or retired academics at the University of Alberta are eligible to serve as University Examiner. Existing Department policies are more demanding than the current University Calendar, and hence, postdoctoral fellows, research associates and administrators are ineligible as University Examiners. Outside of usual contact in courses or other non-thesis activities within the University, a University Examiner should not have been associated with or have been collaborating with the student or supervisor(s), as well as any other added examiner(s).
- ***External Examiner***: a recognized academic from outside and without any affiliation with the University of Alberta, with experience in supervising graduate students to completion in their program. Description of External Examiner is further detailed in Section 4.4.3., with particular focus on External Examiner for a doctoral final examination.
- ***Specialized Knowledge Examiner***: is a person who has knowledge or professional expertise that is directly relevant to the thesis research (e.g., indigenous community member, industry expert) and does not have a full-time academic appointment at a university that confers graduate degrees.

Every examining committee must have an exam chair who is not a supervisor but is a member of the student's home department. The exam chair should have sufficient experience of graduate examinations to enable the examination to be conducted in a fair manner, and is responsible for moderating the discussion, setting the tone of the examination, and directing questions. It is the exam chair's responsibility to ensure that departmental and GPS regulations relating to the examination are followed. Generally, chairs do not ask exam questions during the examination.

The membership of an examination committee may be augmented with a GPS Pro Dean based on the University Calendar. A GPS Pro Dean has voice and advice during examinations, but does not vote on the exam outcome, with the exception of exam adjournment decisions.

The Department recommends the following general conduct of oral examinations:

- The exam chair establishes that all exam committee members are ***in attendance*** in person or via teleconferencing. The exam cannot proceed without the GPS-required membership of the exam committee.
- The questioning portion of all exams typically follows a student research seminar for final M.Sc. and final Ph.D. exams, or a student's presentation for Ph.D. candidacy exams.
- ***Teleconferencing*** may be used by the student, the supervisor, and any or all member(s) of an examination committee (including also external examiner and exam chair) to attend part or the entirety of the exam, including initial student presentation or seminar and the questioning portion.
- Following the student's presentation, the exam chair opens the examination with a brief ***introduction*** of the members of the examining committee and student, and by briefly explaining the exam procedure and possible exam outcomes.
- In case of candidacy exams, the student's course record and academic accomplishments and recognitions are also briefly reviewed by the exam chair.
- Subsequently, the exam chair establishes the ***order of questioning***, usually starting with the examiner furthest removed from the student's research project, and ending with the supervisor. As an option, the chair may encourage out-of-order follow-up questions.
- Typically, ***two rounds of questioning*** are conducted, with the first round 15-20 minutes per examiner, and the second round 5-10 minutes. Typically, the total time of questioning should be about 2 hours with a 5-10 minute break after about 1 hour. The second round may be shortened to 1-2 questions for every member of the examining committee. However, the external examiner, particularly in final doctoral exams, should be given an ample amount of time to raise all and any concerns. In line with the Calendar, the questioning portion of the examination does not extend beyond a reasonable duration of 2 hours for final master and 3 hours for both candidacy and final doctoral examinations.
- The exam chair keeps track of time, ensures that the focus stays on questioning the student, intervenes if questions are not fair or to facilitate clarifications, and schedules breaks as necessary.
- The questioning is concluded by giving the student the opportunity for a closing statement or voicing any concerns, comments or questions. We do ***not*** recommend to encourage the student to revisit questions that may not have been well answered.
- The student is asked to leave the room for the committee to deliberate ***in camera*** the outcome. The outcome is determined in ***two rounds of polling*** of the exam committee members in the order of questioning.
- In the ***first round***, the examiners note their first assessment of the result without verbalizing justification as to not unduly influence the other committee members. The outcomes for final exams are: "Pass", "Pass subject to revisions", "Adjourned", and "Fail". For candidacy exams, they are "Pass, "Conditional pass", "Fail and repeat", and "Fail and terminate or change program". For more detail on what the exam outcomes represent, see Sections 3.2.4 for master, 4.3.7 for doctoral candidacy and 4.4.5 for final doctoral examinations. Although the decision of the exam outcome is a prerogative of the examination committee, as a general guideline, outcome categories such as "Pass subject to revisions" and "Conditional pass" are often associated with the student performing additional scholarly work equivalent to about 6 weeks to 6 months of their dedication.
- In the ***second round***, each of the members of the examining committee may explain their reasons for the decision. The exam chair ensures that all exam committee members are

heard, and takes notes to convey the essence of the discussion to the student in verbal and written forms as necessary. The exam chair mediates the discussion to come to an agreement.

- ***Agreement is reached, when (1) all or all but one*** of the examiners agree to an outcome of "Pass", "Pass subject to revisions", or "Fail and terminate or change program" ***(2) a majority*** of examiners agrees to an outcome of "Adjourned", "Conditional pass", or "Fail and repeat". If no agreement can be reached, the Department will refer the matter to the corresponding GPS Associate Dean, who will determine an appropriate course of action.
- After the student is brought back into the room, the exam chair ***announces the outcome*** and briefly summarizes the comments of the exam committee, concludes the exam, and collects signatures if applicable. With their verbal consents, the exam chair may sign exam approval forms on behalf of up to two of exam committee members.
- In all cases except for a straight "Pass", the exam chair must draft a ***written report*** of the reasons for the outcome, stating any required revisions, conditions or recommendations for the student. The draft should be circulated to all exam committee members for vetting, editing and approval. The Graduate Administrator circulates the final version of the report to the student, the examiners, and GPS.
- In case of an excellent final examination, the exam committee may nominate the student for a ***Departmental M.Sc. or Ph.D. thesis award***. Nominations should be about 500 words mentioning thesis-based publications, explaining scientific contributions or applied value of the research, and detailing the exceptional performance during research seminar or questioning portion of the exam. A nomination letter is drafted with the input, vetting and agreement from the supervisor and examination committee immediately following the final examination. The final version of the nomination letter is submitted by the exam chair to the Graduate Administrator together with the final exam paperwork.

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3. Program Requirements: Master of Science

In this section:

- 3.1. Program Requirements
  - 3.1.1. Course requirements
  - 3.1.2. Thesis requirements
  - 3.1.3. General requirements
  - 3.1.4. Length of program
  - 3.1.5. Supervisory Committee
  - 3.1.6. Promotion from M.Sc. program to Ph.D. program
- 3.2. Final Examination
  - 3.2.1. Exam organization and time lines
  - 3.2.2. Exam committee
  - 3.2.3. Exam procedure

3.1. Program Requirements

3.1.1. Course requirements

Course requirements for the M.Sc. are based on the student's previous training and the anticipated needs in the student's area of specialization. Requirements are one of (REN R 602 or REN R 603) and REN R 604 plus a minimum of six credits (e.g., two three-credit courses) of courses at the 500- or 600-level. Additional courses may be required at the discretion of the student's supervisor. Course work should include at least three credits in research methods, statistics, and/or experimental design, which may be taken at the undergraduate or 700-level, but in that case will not count toward the six credits course requirement at the 500- or 600-level. Credits derived from seminars are ineligible to fulfill the course requirements. Courses may be drawn from those listed for the Department of Renewable Resources, and from other Departments within the University.

3.1.2. Thesis requirements

Students of Master of Science must prepare an acceptable thesis presenting results of research conducted. The thesis should reveal that the student is able to work in a scholarly manner and is acquainted with the principal works published on the subject of the thesis. As possible, it should be an original contribution. For more details on Departmental expectations for M.Sc. theses, see Section 2.5. of the graduate handbook. Students will be examined orally on their thesis results by an examining committee (see sections 2.6 and below for more details).

3.1.3. General requirements

Throughout their program, students must remain in good academic standing, and they must complete the Professional Development and Ethics requirements of the University of Alberta. For more details refer to ***Section 2*** of this handbook.

3.1.4. Length of program

Over the duration of their program, students in thesis-based master's programs must pay the equivalent of at least one full year of program fees. The minimum period of residence is two four-month terms of full-time attendance at the University of Alberta. The time required to complete an M.Sc. program will vary according to the previous training of the applicant and the nature of the research undertaken. However, a typical length of M.Sc. programs is two to two and a half years in the Department. Students must complete all the requirements within four years of the term in which they first register as probationary graduate students or as students in the master's program.

3.1.5. Supervisory Committee

Normally, an M.Sc. supervisory committee consists of two members. There are two possible combinations: (1) the supervisor and one supervisory committee member, or (2) the supervisor and co-supervisor.

The supervisor must be a University of Alberta faculty member from within the department. Eligible individuals include tenured or tenure-track faculty members (Category A1.1), Faculty

Service Officers (Category A1.3), and retired faculty holding the title of Professor Emeritus (Category C1.1). These categories are defined in the University's Recruitment Policy: Appendix A – Definition and Categories of Academic Staff and Colleagues.

The second supervisory committee member or the co-supervisor are normally a University of Alberta faculty member as defined above, or an Academic Teaching Staff member (Category A2.1, A2.2, etc.).

Postdoctoral fellows, research associates, and administrators are not eligible to serve on supervisory committees.

The Department allows the second supervisory committee member or the co-supervisor to be a faculty member from another educational institution, an adjunct professor, a collaborator from the private sector, the government or an NGO. A non-University of Alberta committee member must be expert in the field of the student's thesis research, capable of providing advice equivalent to that from a University of Alberta faculty member. A non-University of Alberta supervisory committee member counts towards the GPS requirements, but University of Alberta faculty members (as defined above) in the examining committee must outnumber non-University of Alberta committee members at the final exam (normally 2 of 3).

The supervisory committee (as options A or B) should be established by the supervisor ***within the first six months*** in consultation with the student. Supervisors must formally establish the supervisory committee by submitting the name, affiliation, and contact information of the supervisory committee members to the Graduate Administrator (grad.ales@ualberta.ca). The student and supervisor committee must meet a minimum of once within a 12-month period and complete online reporting requirements uploaded directly to GPS. Information on reporting requirements will be sent directly to students and supervisors from GPS.

3.1.6. Promotion from M.Sc. program to Ph.D. program

Students and supervisors may jointly decide to request a change of program from M.Sc. to Ph.D. prior to graduation. The recommended timeframe for initiating a transfer is 12 months after starting the graduate program with a maximum limit of 24 months. The promotion is normally conditional upon: (1) good academic standing of the M.Sc. student with a GPA> 3.5, (2) the student's demonstrated the ability to pursue research at a equivalent to a Ph.D. student, (3) an extension of the M.Sc. research proposal to a scope suitable for a Ph.D. research proposal, and (4) funding availability to support the research and living expenses of the student. To initiate a change of program, the supervisor must complete a Change of Category request form, providing details that address the above criteria, and contact the Graduate Administrator. A candidacy exam must be held within one year of switching from an M.Sc. program to a Ph.D. program. M.Sc. students converting to Ph.D. program will still have to follow the M.Sc. coursework requirements as described within the Sections **3.1.1** and **4.1.1.**

3.2. Final examination

3.2.1. Exam organization and time lines

The Department recommends the following steps and timelines for organizing the final oral exam for M.Sc. students:

- The supervisor must organize a supervisory committee meeting prior to the exam, where a draft document of the thesis can be reviewed and discussed, usually about ***3-6 months*** before the exam. Based on this supervisory committee meeting, the Graduate Student Progress Report form should indicate that research progress is satisfactory and that preparations for the final exam may commence.
- About ***1-2 months*** prior to the examination, the supervisor finds an additional examiner (university examiner or external examiner) and exam chair and schedules the exam. Both roles examiner and chair may be served by the same faculty member from within the home department of the student.
- At least ***3 weeks*** prior to the final oral examination, the supervisor notifies the Graduate Administrator with the following exam information, using the Examination Booking Form:
  - date and time,
  - place as room # (if in-person) or zoom link (if remotely) or both (if hybrid),
  - student name and degree program,
  - examining committee composition (their names, roles, including exam chair, and for off-campus members, please include their position title and email address).
  - who is attending in person or remotely,

  The Graduate Administrator completes and submits an Examining Committee & Examination Dates form to GPS for approval.
- At least ***3 weeks*** prior to the final oral examination, the student supplies the members of the examining committee, including the exam chair, with a copy of the thesis so that they may have adequate time to appraise the thesis.

3.2.2. Exam committee

The examining committee for a final M.Sc. exam shall consist of the supervisory committee (see section 3.1.5) plus one additional external or university examiner.

- The examining committee should consist of at least three members. The majority of examining committee members (normally 2 of 3) must be University of Alberta faculty members or teaching staff, defined as tenured or tenure-track faculty members (Category A1.1), Faculty Service Officers (Category A1.3), Academic Teaching Staff (Category A2.1, A2.2, etc), or retired faculty holding the title of Professor Emeritus (Category C1.1). These categories are defined in the University's Recruitment Policy: Appendix A – Definition and Categories of Academic Staff and Colleagues.
- The university examiner or external examiner joining the examining committee 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 university examiner or external examiner should not be a former supervisor or student of the supervisor(s). An

university examiner or external examiner should not be an active collaborator of the supervisor(s).
- All members must attend the examination. Participating in person or via teleconferencing equally reflects attendance.
- The exam must be chaired by a faculty member from inside the Department. If the university examiner is a faculty member from inside the home Department, he or she may serve a dual role of university examiner and exam chair. In case the exam follows a previous outcome of "Adjourned", the exam chair cannot serve in the dual role of university examiner and exam chair.
- The exam may be held at locations other than the University of Alberta. Outside the examining committee, guests are not permitted during the exam.

3.2.3. Exam procedure

All students completing the M.Sc. program are required to deliver a seminar presenting their thesis research prior to the final examination. The seminar duration is a maximum of 35 minutes plus 10 minutes for public questions and comments. Normally, the seminar is presented just before the final oral exam so that all exam committee members are able to attend. A final oral examination, based largely on the thesis, shall be conducted by the examining committee in accordance with the general guidelines for examinations as described in ***Section 2.6*** of the handbook.

3.2.4. Exam outcome

The decision of the examining committee will be based on strengths and weaknesses of the thesis contents, the student' presentation, and the ability of the student to address, explain and elaborate during the questioning portion of the examination.

Agreement on the exam outcome is reached, when ***all or all but one*** of the examiners agree to an outcome of ***Pass***, ***Pass subject to revisions***, or ***Fail***, or when a majority of examiners agrees to an outcome of ***Adjourned***. If no agreement can be reached, the Department will refer the matter to the Associate Dean, GPS, who will determine an appropriate course of action.

In case of an excellent thesis final examination, the exam committee may nominate the student for a ***Departmental M.Sc. thesis award*** as noted above.

The possible exam outcomes are detailed as follows:

- ***Pass:*** The student has satisfactorily explained the thesis and suggestions for updates are editorial in nature and at the discretion of the student. The department submits a completed Thesis Approval/Program Completion form to the GPS. If one of the examiners fails the student, that examiner does not have to sign this form.

- ***Pass subject to revisions:*** The student has satisfactorily explained the thesis but the revisions to the thesis are sufficiently minor that it will not require a reconvening of the examining committee. If the examining committee agrees to a "Pass subject to revisions"

for the student, the committee chair, with input from the examining committee, must provide ***in writing***, within five working days of the examination, to the Dean, GPS, and the student via the Graduate Administrator:

- the reasons for this outcome,
- the details of the required revisions,
- the approval mechanism for meeting the requirement for revisions (e.g., approval of the examining committee chair or supervisor, or approval of the entire examining committee, or select members of the committee), and
- the supervision and assistance the student can expect to receive from committee members.

The student must make the revisions within six months of the date of the final examination. Once the required revisions have been made and approved, the department shall submit a completed Thesis Approval/Program Completion form to the GPS indicating "pass subject to revisions". If one of the examiners fails the student that examiner does not have to sign the form. If the required revisions have not been made and approved by the end of the six months deadline, the student will be required to withdraw.

- ***Adjourned:*** An adjourned examination is one that has been abandoned officially. A majority of examiners must agree to an outcome of Adjourned. The final examination should be adjourned in the following situations:
  - The revisions to the thesis are sufficiently substantial that it will require further research or experimentation or major reworking of sections, or if the committee is so dissatisfied with the general presentation of the thesis that it will require a reconvening of the examining committee. In such circumstances the committee cannot pass the student, and must adjourn the examination.
  - The committee is dissatisfied with the student's oral presentation and defence of the thesis, even if the thesis itself is acceptable with or without minor revisions.
  - Compelling, extraordinary circumstances such as a sudden medical emergency taking place during the examination.
  - Discovery of possible offences under the Code of Student Behaviour after the examination has started.

  If the examination is adjourned, the committee chair, with input from the exam committee members should:
  - Specify in writing to the student, with as much precision as possible, the nature of the deficiencies and, in the case of revisions to the thesis, the extent of the revisions required. Where the oral defence is unsatisfactory, it may be necessary to arrange some discussion periods with the student prior to reconvening the examination.
  - Decide upon a date to reconvene. If the date of the reconvened examination depends upon the completion of a research task or a series of discussions, it should be made clear which committee members will decide on the appropriate date to reconvene. This new examination must be held within six months of the initial examination.

- Make it clear to the student what will be required by way of approval before the examination is reconvened (e.g., approval of the committee chair or supervisor, approval of the entire committee, or of select members of the committee).
- Specify the supervision and assistance the student may expect from the committee members in meeting the necessary revisions.
- Advise the Dean, GPS, in writing of the adjournment and the conditions via the Graduate Administrator.
- When the date is set for the adjourned final examination, the department will notify the GPS. Normally a Pro Dean attends the examination.

- ***Fail:*** If the examination result is a Fail, no member of the examining committee signs the Thesis Approval/Completion form. When the outcome is a Fail, the committee chair will provide the reasons for this decision to the department. The department will then provide this report, together with its recommendation for the student's program, to the Dean, GPS, and to the student via the Graduate Administrator. An Associate Dean, GPS will normally arrange to meet with the student, the Graduate Coordinator, and others if needed, before acting upon any departmental recommendation that affects the student's academic standing.

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4. Program Requirements: Doctor of Philosophy

In this section:

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4.1. Program Requirements

4.1.1. Course requirements

Course requirements for the Ph.D. will be based on the student's previous training and anticipated needs in the student's area of specialization, and the total course load will be at the discretion of the student's supervisory committee. All students in the Ph.D. program must take REN R 603 and one of (REN R 604, REN R 605 or REN R 606) [effective Fall 2027 two of (REN R 604, REN R 605 or REN R 606)]. Otherwise there is no fixed minimum course requirement for students who hold a master's degree. Students entering the Ph.D. program, ***who do not have a master's degree***, will have to fulfil the PhD seminar requirement plus the M.Sc. course work requirement of a minimum of six credits (e.g., two three-credit courses) of courses at the 500- or 600-level. Additional courses may be required at the discretion of the student's supervisor. Course work should include at least three credits in research methods, statistics, and/or experimental design, which may be taken at the undergraduate or 700-level, but in that case will not count toward the six credits course requirement at the 500- or 600-level. Credits derived from seminars are ineligible to fulfill the course requirements. Courses may be drawn from those listed for the Department of Renewable Resources, and from other Departments within the University.

4.1.2. Thesis requirements

Ph.D. students must prepare an acceptable thesis presenting the results of their research. A doctoral thesis must embody the results of original investigations and analyses and be of such quality as to merit publication, meeting the standards of reputable peer-reviewed scientific journals. Furthermore, it must constitute a substantial contribution to the knowledge of the student's field of study. For more details on Departmental expectations for Ph.D. theses, see Section 2.5 of the graduate handbook. Students will be examined orally on their thesis results by an examining committee (see Section 2.6 and below for more details).

4.1.3. General requirements

Throughout their program, students must remain in good academic standing, and they must complete the Professional Development and Ethics requirements of the University of Alberta. For more details refer to Section 2 of this handbook.

4.1.4. Residency minimum requirements

Over the duration of their program, students in a doctoral program must pay the equivalent of at least three full years of program fees. The minimum residence requirements are three academic years of study and research for a student with a bachelor's degree, and two academic years of study and research for those with a master's degree. The time required to complete the Ph.D. will vary according to the previous training of the applicant and the nature of the research undertaken. However, the typical length of Ph.D. programs is four years in the Department.

4.1.5. Program timelines for candidacy examination and degree completion

Students must pass a candidacy examination within two years (see below for details). Ph.D. students must complete all program requirements within six years of the term in which they first register in the program. In the case of M.Sc. students who are converted to doctoral degree, a candidacy exam must be scheduled within one year of changing to a Ph.D. program, and all degree requirements must be completed within six years of the time they first register as a M.Sc. student, not including any time spent as a qualifying graduate student.

4.1.6. Supervisory Committee

Normally, a Ph.D. supervisory committee consists of three members. There are two possible combinations: (1) the supervisor and two supervisory committee members, or (2) the supervisor, one co-supervisor, and one supervisory committee member.

The supervisor must be a University of Alberta faculty member from within the Department. Eligible individuals include tenured or tenure-track faculty members (Category A1.1), Faculty Service Officers (Category A1.3), and retired faculty holding the title of Professor Emeritus (Category C1.1). These categories are defined in the University's Recruitment Policy: Appendix A – Definition and Categories of Academic Staff and Colleagues.

At least one committee member or the co-supervisor must be a University of Alberta faculty member as defined above, or an Academic Teaching Staff member (Category A2.1, A2.2, etc.).

Postdoctoral fellows, research associates, and administrators are not eligible to serve on supervisory committees.

The Department allows one of the supervisory committee members or the co-supervisor to be a faculty member from another educational institution, an adjunct professor, a collaborator from the private sector, the government or an NGO. A non-University of Alberta committee member must be expert in the field of the student's thesis research, capable of providing advice equivalent to that from a University of Alberta faculty member. A non-University of Alberta supervisory committee member counts towards the GPS requirements, but University of Alberta faculty members (as defined above) in the examining committee must outnumber non-University of Alberta committee members at the final exam (normally 3 of 5).

The supervisory committee (as options A or B) should be established by the supervisor ***within the first six months*** in consultation with the student. Supervisors must formally establish the supervisory committee by submitting the name, affiliation, and contact information of the supervisory committee members to the Graduate Administrator (grad.ales@ualberta.ca). The student and supervisor committee must meet a minimum of once within a 12-month timeframe and complete online reporting requirements uploaded directly to GPS. Information on reporting requirements will be sent directly to students and supervisors from GPS.

4.2. Pre-Candidacy Assessment − *This is fully optional by choice of supervisory committee*

As an option, a supervisory committee may request a Pre-Candidacy Assessment for Ph.D. students who either fall below a GPA of 3.0 in their coursework, or who in other ways do not show satisfactory academic progress in their program. This assessment is entirely optional and at the request of the supervisor and in consultation with the Graduate Coordinator.

The purpose of the Pre-Candidacy assessment is to provide an early evaluation of the student's knowledge and written and verbal communication skills, with the view of providing the student with a frank prognosis of the likelihood of successful completion of a Ph.D. program in the student's field of study.

The format of the assessment is the same as for the candidacy examination (see Sections 2.6 and 4.3), but may be shortened and simplified:

- A member of the Graduate Committee or Graduate Coordinator will chair the Pre-Candidacy Assessment.
- The student should provide a brief research proposal (approximately 1500 words) as a writing sample to the committee and chair, one week before the assessment.
- The student should prepare a brief presentation of their intended research (15 minutes at the beginning of the exam).
- Subsequently, the supervisory committee members will question the student on topic areas relevant to their thesis research.

The result of the Pre-Candidacy Assessment shall be drafted by the chair, edited and approved by the committee, sent to the student in writing, and added to the student's file. The report should summarize the student's strengths and weakness, make suggestions for addressing weakness (e.g., courses to be taken), and state any concerns regarding the student's ability to successfully complete the program.

4.3. Candidacy Exam Guidelines

4.3.1. Purpose and timing

For candidacy examinations, students must demonstrate to the satisfaction of the examining committee that they possess 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 leading to a doctoral degree. The student will be evaluated based on a written candidacy statement, a research presentation, and an oral examination. The candidacy exam will be held within two years of first registration in the Ph.D. program or within one year of switching from an M.Sc. to a Ph.D. program. Dates of Candidacy Examinations are determined between the student, the supervisor, and the supervisory committee.

4.3.2. Exam preparation

Students should familiarize themselves with the literature relevant to their thesis, general principles of scientific inquiry, and practice communicating this knowledge.

- Long-term preparation may include taking graduate-level courses with in-depth treatment of subject matter relevant to the student's area of interest.

- Students should consult the supervisory committee for suggested readings from the scientific literature that provide ***relevant background and context*** for the thesis research.
- Preparing a written literature review that critically examines and synthesizes previous research is a good exercise. This may form a basis for introductory sections of the thesis and the candidacy statement (see below).
- The student can consult with examiners about the general areas of questioning. Some examiners may suggest readings from journals or textbooks.
- ***Practicing*** multiple times to give their research presentation as well as listening and answering questions in front of an audience is useful.
- Students should be familiar with the examination process outlined in Section 2.6 of the graduate handbook and may consult with the supervisor or chair if there are any questions or concerns.

4.3.3. Candidacy statement and CV

The student must prepare a written document that outlines their thesis research and a brief academic CV listing previous education, publications, conference contributions, courses and grades of the current program. The two documents must be provided to all members of the examining committee at least one week prior to the exam. The purpose is to provide examiners with information on the student's background, give them an understanding of the thesis research, and provide the opportunity for an assessment of the student's ability to communicate in written form. As a guidance, the Department recommends the following format for the candidacy statement:

- Title and summary of the thesis proposal (~250 words).
- A general introduction providing a review of the relevant literature and an overall rationale for the proposed research (~1000 words).
- An objectives section that explains the overarching thesis goals, followed by specific research objectives, hypotheses and questions that are addressed in each data chapter (~500 words).
- Sections for each data chapter that include a title, summary, introduction, objective, methods and preliminary results where applicable (~500-1500 words each, depending on how well the chapters are developed).
- As a planning tool, a Gantt chart that shows progress to date, activities and timelines for thesis project completion with a brief explanation.
- A recommended total length of a candidacy statement is ~5000 words, plus ~50 references, plus 5-10 figures and tables.

4.3.4. Candidacy exam organization

At least ***three weeks*** prior to the final oral examination the following steps should be completed:

- The supervisor finds two additional examiners (see sections below), an exam chair, and schedules the exam.
- At least ***3 weeks*** prior to the final oral examination, the supervisor notifies the Graduate Administrator with the following exam information:
    - date and time,
    - place as room # (if in-person) or zoom link (if remotely) or both (if hybrid),

- student name and degree program,
- examining committee composition (their names, roles, including exam chair, and for off-campus members, please include their position title and email address).
- who is attending in person or remotely.

The Graduate Administrator completes and submits an Examining Committee & Examination Dates form to GPS for approval.

4.3.5. Candidacy exam committee

The examining committee for a Ph.D. candidacy exam shall consist of the supervisory committee plus two additional examiners. At least one of the additional examiners for Ph.D. candidacy exams is the university examiner ***or*** external examiner as detailed above in section 2.6. Normally, an examining committee includes five examining members with two possible combinations:

A) one university examiner ***or*** external examiner, one university examiner ***or*** specialized knowledge examiner, two supervisory committee members, and the supervisor,

or

B) one university examiner ***or*** external examiner, one university examiner ***or*** specialized knowledge examiner, one supervisory committee member, and two co-supervisors.

Implementing options A or B depends if the student has a sole supervisor or two co-supervisors. As examiner options, including university examiners is a more frequent practice at the present than external examiner or specialized knowledge examiner for Ph.D. candidacy exams.

- In total, there should be five members of the examining committee (plus an exam chair). The majority of examining committee members (at least 3 of 5) must be University of Alberta faculty member, defined as tenured, tenure-track, retired faculty member, or a Faculty Service Officer (current or retired categories A1.1, A1.3, or current category C1.1, as per the University's Definition and Categories of Academic Staff and Colleagues).
- All members must attend the examination. Participating in person or via teleconferencing equally reflects attendance.
- The exam must be chaired by a faculty member from the home Department as a current or former member of the Graduate Committee. Experienced faculty members from inside the Department may also chair exams. The exam chair cannot serve as examiner.
- The exam may be held at locations other than the University of Alberta. Outside the examining committee, guests are not permitted during the exam.

4.3.6. Candidacy exam procedure

The oral examination will be chaired by a current or former member of the Departmental Graduate Committee and will be conducted in accordance with the general guidelines for examinations as described in Section 2.6 of the handbook. The exam starts with the committee chair reviewing the student's academic record, including course work, publications, scholarships and other awards. Subsequently, the student will deliver a brief (15 minutes) oral presentation outlining the area of their thesis research and their progress to date. It is natural that questions will arise out of the presentation and the candidacy statement and the student should explain and

elaborate the proposed research. However, exam questions should also test the student's general scientific abilities and broader foundational knowledge of their discipline relative to the proposed research.

4.3.7. Candidacy exam outcome

The decision of the examining committee will be based on strengths and weaknesses of the candidacy statement, the student' presentation, and the ability of the student to address, explain and elaborate during the questioning portion of the examination.

Agreement on the candidacy exam outcome is reached, when all or all but one of the examiners agree to an outcome of ***Pass***, ***Conditional pass***, or ***Fail and terminate/change program***, or when a majority of examiners agrees to an outcome of ***Adjourned*** or ***Fail and repeat***. If no agreement can be reached, the Department will refer the matter to the Associate Dean, GPS, who will determine an appropriate course of action.

The possible exam outcomes are detailed as follows:

- ***Pass:*** If the student passes the candidacy examination, the department should complete the Report of Completion of Candidacy Examination form and submit it to the GPS.

- ***Conditional Pass:*** If the candidacy examining committee agrees to a conditional pass for the student, the chair of the examining committee, with input from all exam committee members, will provide ***in writing*** within five working days to the Dean, GPS, and the student via the Graduate Administrator:
    - the reasons for this recommendation,
    - the details of the conditions,
    - the timeframe for the student to meet the conditions,
    - the approval mechanism for meeting the conditions (e.g. approval of the committee chair or supervisor, or approval of the entire committee, or select members of the committee), and
    - the supervision and assistance the student can be expected to receive from committee members. Conditions are subject to final approval by the Dean, GPS.

    At the deadline specified for meeting the conditions, two outcomes are possible:
    - All the conditions have been met. In this case, the department will complete the Report of Completion of Candidacy Examination form and submit it to GPS; or
    - Some of the conditions have not been met. In this case, the outcome of the candidacy examination is a Fail, and the options below are available to the examining committee. Note that the options are different after a failed second candidacy examination.

- ***Adjourned:*** The candidacy examination should be adjourned in the event of compelling, extraordinary circumstances such as a sudden medical emergency taking place during the examination or possible offences under the Code of Student Behaviour after the

examination has started. The committee chair will provide the reasons for this recommendation to the department.

- ***Fail:*** If the candidacy examining committee agrees that the student has failed, the committee chair will provide the reasons for this recommendation to the department. The Graduate Coordinator will then provide this report, together with the department's recommendation for the student's program, to the Dean, GPS, and to the student. For failed candidacy examinations, an Associate Dean, GPS, normally arranges to meet with the student and others as required before acting upon any department recommendation. The options available to the examining committee when the outcome of a student's candidacy exam is "Fail" are:

    - ***Repeat the Candidacy:*** If the student's first candidacy exam performance was inadequate but the student's performance and work completed to date indicate that the student has the potential to perform at the doctoral level, the examining committee should consider the possibility of recommending that the student be given an opportunity to repeat the candidacy exam. Normally, the composition of the examining committee does not change for the repeat candidacy exam. If the recommendation of a repeat candidacy is formulated by the examining committee and approved by the GPS, the student and Graduate Coordinator are to be notified in writing of his or her exam deficiencies by the chair of the examining committee. The second candidacy exam is to be scheduled no later than six months from the date of the first candidacy. In the event that the student fails the second candidacy, the examining committee shall recommend one of the following two options to the department:
    - ***Change of Category to a Master's Program:*** This outcome should be considered if the student's candidacy examination performance was inadequate and the student's performance and work completed to date indicates that the student has the potential to complete a master's, but not a doctoral, program; or
    - ***Termination of the Doctoral Program:*** If the student's performance was inadequate, and the work completed during the program is considered inadequate, then the examining committee should recommend termination of the student's program.

4.4. Final Examination Guidelines

4.4.1. Exam organization and timelines

Preparation for the final Ph.D. examination is fairly complex and the Department recommends the following steps and timelines:

- The supervisor must organize a supervisory committee meeting prior to the exam, where a draft document of the thesis can be reviewed and discussed, usually about ***3-6 months*** before the exam. The Graduate Student Progress Report form should indicate that research progress is satisfactory and that preparations for the final exam may commence.
- Approximately ***3 months*** prior to the exam, the supervisor may confirm the availability of committee members to review and approve a complete version of the thesis, and contact potential external examiners and university examiners to confirm their general

availability. The External Examiner should be a recognized academic in the student's disciplinary area and will be experienced in supervising doctoral students to completion as further detailed below in section 4.4.3. Once a thesis has been submitted for evaluation to the examining committee, neither the student nor the supervisor are not permitted to communicate with the External Examiner or University Examiner prior to the exam.

- Approximately ***10 weeks*** before the exam, the student circulates a complete version of the thesis to the supervisory committee for preliminary acceptance. The complete version must conform to GPS minimum guidelines for thesis formatting and must have all prefatory pages including a preface that describes the student's and collaborator's contributions to the research. This preliminary review and acceptance phase is critical to protect and uphold the reputation of the Department and the University and ensure that examiners are not asked to invest time reading a thesis that is substandard.
- At least **2 months** prior to the exam date, the supervisor collects written statements from the committee members that the thesis is ready to be sent to the external examiner in its current form. Copies of emails from the committee members forwarded to the Graduate Administrator suffice this step.
- At least **2 months** prior to the exam date, the supervisor completes and sends an Approve External Examiner form to the Graduate Administrator for review and approval, along with an academic CV from the proposed External Examiner.
- At least ***6 weeks*** prior to the final oral examination, the supervisor notifies the Graduate Administrator with the following exam information, using the Examination Booking Form:
    - date and time,
    - place as room # (if in-person) or zoom link (if remotely) or both (if hybrid),
    - student name and degree program,
    - examining committee composition (their names, roles, including exam chair, and for off-campus members, please include their position title and email address).
    - who is attending in person or remotely,

  The Graduate Administrator completes and submits an Examining Committee & Examination Dates form to GPS for approval.
- As soon as the External Examiner is approved by GPS and no later than ***4 weeks*** prior to the exam, the student or the supervisor send the final version of the thesis to all examining committee members, including the exam chair.
- About ***1 week*** prior to the exam, the Graduate Administrator should confirm that the confidential written report by the external examiner has been received and available as instructed by GPS, and remind the external examiner that the report and questions should not be revealed to the supervisor or student prior to the exam.

4.4.2. Final examining committee

The examining committee for a final Ph.D. exam shall consist of the supervisory committee plus two additional examiners. One of the additional examiners for final Ph.D. exams is the External Examiner as detailed below in section 4.4.3. Normally, an examining committee includes five examining members with two possible combinations:

A) one external examiner, one university examiner ***or*** specialized knowledge examiner, two supervisory committee members, and the supervisor,

or

B) one external examiner, one university examiner ***or*** specialized knowledge examiner, one supervisory committee member, and two co-supervisors.

Implementing options A or B depends if the student has a sole supervisor or two co-supervisors. As examiner options, including university examiners is a more frequent practice at the present than specialized knowledge examiner for final Ph.D. exams.

- In total, there should be five members of the examining committee (plus an exam chair). The majority of examining committee members (normally 3 of 5) must be University of Alberta faculty member, defined as tenured, tenure-track, retired faculty member, or a Faculty Service Officer (current or retired categories A1.1, A1.3, or current category C1.1, as per the University's Definition and Categories of Academic Staff and Colleagues).
- The external examiner must be from outside the University and should have no current or previous associations with the student, the supervisor, or the Department.
- External examiners, university examiners, and specialized knowledge examiners for final Ph.D. examinations will be approved by the Associate Dean, Graduate Studies. For details of these examiner categories see sections 2.6 and 4.4.3.
- An university examiner who has served on a student's candidacy examination committee is eligible to serve as university examiner on the student's doctoral final examination if the other conditions of being university examiner remain unchanged.
- All members must attend the examination. Participating in person or via teleconferencing equally reflects attendance.
- The exam must be chaired by a faculty member from inside the Department who is a member of the Departmental Graduate Program Committee. If no member is available to serve, then a former member of the Departmental Graduate Committee or an experienced faculty member from inside the Department may chair the exam. The chair cannot serve as examiner.
- The exam may be held at locations other than the University of Alberta. Outside the examining committee, guests are not permitted during the exam.

4.4.3. External examiner for final Ph.D. examination

The term external examiner refers to an external that attends the examination. In general, the external examiner must be a recognized academic authority in the specific field of research of the student's thesis, will be experienced in supervising doctoral students to completion, and must not have an association with the student, supervisor or co-supervisor that could be perceived to hinder an objective evaluation (e.g., as former student, supervisor, collaborator or coauthor). See below for the specific criteria. The external examiner should not have served as external for the Department in the least two years or have other close ties to the Department; this does not preclude examiner service in another department within the university. It is essential that the external examiner not have an association with the student, the supervisor, or the Department as this could hinder objective analysis.

The external examiner specifically:

- Will be a tenure-track, tenured, or retired faculty member of a university that confers graduate degrees;
- Will be a recognized authority in the specific field of research of the student's thesis;
- Will be experienced in supervising several doctoral students to completion in their program; and
- Must be in a position to review the thesis objectively and to provide a critical analysis of the work and the presentation.

Associations that normally will preclude participation as an external examiner include:

- Having co-authored or performed collaborative research with the student or the supervisor within the preceding six years;
- Having overseen an edited volume that includes the work of the student or supervisor, or having published work in an edited volume overseen by the student or supervisor within the preceding six years;
- Having a financial interest in an entity that could benefit from the thesis research;
- Having read or evaluated the thesis, in whole or in part, prior to appointment as external examiner;
- Having examined or been examined by the student's supervisor within the preceding six years;
- Having engaged in discussions/negotiations with the student or the supervisor related to future employment or supervision, or intending to do so;
- Having a personal or financial relationship with the student or the supervisor that could appear to result in a conflict of interest (for example, past or present domestic or romantic partnerships, family relationships, and past or present business partnerships);
- Having a former (within the preceding six years) or pending affiliation with the student's department;
- Having had an academic appointment at the University of Alberta within the preceding six years.

An external examiner attends the examination, and provides the Graduate Administrator at least one week in advance of the examination with a confidential written report (~ 2 to 3 pages) with commentary on the structure, methodology, quality, significance and findings, placing the thesis into one of the following three categories (1) acceptable with minor or no revisions, (2) reserve judgment until after the examination, or (3) unacceptable without major revisions.

External reader has been eliminated from all examination practices.

4.4.4. Exam procedure

All students completing the Ph.D. program are required to deliver a seminar presenting their thesis research prior to the final examination. The seminar duration is a maximum of 45 minutes plus 10 minutes for public questions and comments. Normally, the seminar is presented just before the final oral exam so that all exam committee members are able to attend. A final oral examination, based largely on the thesis, shall be conducted by the examining committee in accordance with the general guidelines for examinations described in Section 2.6 of the handbook.

4.4.5. Exam outcome

The decision of the examining committee will be based on strengths and weaknesses of the thesis, the student' seminar, and the ability of the student to address, explain and elaborate during the questioning portion of the examination.

Agreement on the exam outcome is reached, when ***all or all but one*** of the examiners agree to an outcome of ***Pass***, ***Pass subject to revisions***, or ***Fail***, or when a majority of examiners agrees to an outcome of ***Adjourned***. If no agreement can be reached, the Department will refer the matter to the Associate Dean, GPS, who will determine an appropriate course of action.

In case of an excellent thesis final examination, the exam committee may nominate the student for a ***Departmental Ph.D. thesis award*** as noted above.

The possible exam outcomes are detailed as follows:

- ***Pass:*** The student has satisfactorily explained the thesis and suggestions for revisions are editorial in nature and at the discretion of the student. The department submits a completed Thesis Approval/Program Completion form to the GPS. If one of the examiners fails the student, that examiner does not have to sign this form.

- ***Pass Subject to Revisions:*** The student has satisfactorily explained the thesis but the revisions to the thesis are sufficiently minor that it will not require a reconvening of the examining committee. If the examining committee agrees to a "Pass subject to revisions" for the student, the chair of the examining committee must provide in writing, within five working days of the examination, to the Dean, GPS, the Graduate Coordinator and the student:
    - the reasons for this outcome,
    - the details of the required revisions,
    - the approval mechanism for meeting,
    - the requirement for revisions (e.g., approval of the examining committee chair or supervisor, or approval of the entire examining committee, or select members of the committee), and
    - the supervision and assistance the student can expect to receive from committee members.

  The student must make the revisions **within six months** of the date of the final examination. Once the required revisions have been made and approved, the department should submit a completed Thesis Approval/Program Completion form to the GPS indicating "pass subject to revisions". If the required revisions have not been made and approved by the end of the six months deadline, the student will be required to withdraw.

- ***Adjourned:*** An adjourned examination is one that has been abandoned officially. The final examination should be adjourned in the following situations:
    - The revisions to the thesis are sufficiently substantial that it will require further research or experimentation or major reworking of sections, or if the committee is

so dissatisfied with the general presentation of the thesis that it will require a reconvening of the examining committee. In such circumstances the committee cannot pass the student, and must adjourn the examination.
    - The committee is dissatisfied with the student's oral presentation and defence of the thesis, even if the thesis itself is acceptable with or without minor revisions.
    - Compelling, extraordinary circumstances such as a sudden medical emergency taking place during the examination.
    - Discovery of possible offences under the Code of Student Behaviour after the examination has started.

  If the examination is adjourned, the committee should:
    - Specify in writing to the student, with as much precision as possible, the nature of the deficiencies and, in the case of revisions to the thesis, the extent of the revisions required. Where the oral defence is unsatisfactory, it may be necessary to arrange some discussion periods with the student prior to reconvening the examination.
    - Decide upon a date to reconvene. If the date of the reconvened examination depends upon the completion of a research task or a series of discussions, it should be made clear which committee members will decide on the appropriate date to reconvene. This new examination must be held within six months of the initial examination.
    - Make it clear to the student what will be required by way of approval before the examination is reconvened (e.g. approval of the committee chair or supervisor, approval of the entire committee, or of select members of the committee).
    - Specify the supervision and assistance the student may expect from the committee members in meeting the necessary revisions.
    - Advise the Dean of the department's Faculty following the procedures established for this purpose.
    - Advise the GPS in writing of the adjournment and the conditions.
    - When the date is set for the adjourned final examination, the department will notify the Dean of the department's Faculty and the GPS. Normally, a Pro Dean attends the examination.

- ***Fail:*** If the examination result is a Fail, no member of the examining committee signs the Thesis Approval/Completion form. When the outcome is a Fail, the committee chair will provide the reasons for this decision to the Graduate Coordinator. The department will then provide this report, together with its recommendation for the student's program, to the Dean of the department's Faculty, the GPS, and to the student. An Associate Dean, GPS will normally arrange to meet with the student and with the Graduate Coordinator before acting upon any department recommendation that affects the student's academic standing.

5. Program Requirements: Master of Forestry

In this section:

- 5.1. General Program Information
- 5.2. Program Specializations
    - 5.2.1. Sustainable Forest Management (MF-SFM)
    - 5.2.2. Environmental and Wildlife Conservation (MF-EWC)
    - 5.2.3. Ecology and Ecosystem Restoration (MF-EER)
    - 5.2.4. International Forestry (MF-IF)
- 5.3. Program duration and scheduling options
- 5.4. Program fees and financial support
- 5.5. Role of advisors
- 5.6. Capping research projects
- 5.7. Grading guidance for capping research projects

5.1. General Program Information

The Master of Forestry is a course-based program that offers four specializations, training participants for professional careers in: (1) Sustainable Forest Management, (2) Environmental and Wildlife Conservation, (3) Ecology and Ecosystem Restoration, and (4) International Forestry. Applicants must hold an undergraduate degree in conservation, environmental or forest sciences, or in an allied discipline such as biological sciences.

Forestry is a regulated profession in Canada, and the Registered Professional Forester (RPF) designation is a common job requirement to work on many aspect of sustainable forest management in government or forest industry. Specialization (1) is a professionally accredited program. However, other specializations can contribute to fulfilling the requirements to become an RPF, but typically require additional course work.

The program curricula comprise required coursework, topical electives, free electives and a capping research project for a total of 30 program credits, where most courses are weighted at 3 credits. Applicants who are admitted to the program have an assigned academic advisor to guide course selection and research projects. Program requirements vary depending on the specialization, but the curricula are generally designed to be completed within 10 to 16 months of full-time study. See the subsequent sections for more details.

5.2. Program Specializations

The four MF program specializations prepare participants for careers in different aspects of sustainable forest ecosystem management and conservation. Starting 2024, new students are no longer accepted into the current non-specialized MF program. The base MF program is only available for internal program transfers under exceptional circumstances.

5.2.1. MF with Specialization in Sustainable Forest Management

This specialization is accredited by the Canadian Forestry Association Board and comprehensively prepares students for a career in sustainable forest management. Graduates are eligible to apply to join the regulated profession as Registered Professional Foresters in Alberta or any other Canadian province, working in government or industrial organizations or as consultants.

Entrance Requirements: Admission prerequisites include foundational undergraduate courses in (1) biodiversity or conservation, (2) plant physiology or structure and function, (3) soil science, (4) geomatics or GIS, and (5) statistics. Missing prerequisites can be covered during the first term under a conditional admission. Students who satisfy the minimum requirements during the first year are eligible to continue their training in the MF-SFM.

Program Requirements: Students are required to complete 30 units of coursework including two field school courses in August prior to the start of the first term. If students enter the program with prior credits for a very close equivalent of a required course, alternative courses can be chosen with departmental approval to meet the minimum credit requirements, including a directed study or research project.

Course Requirements: (30 units) See course listings for more details on scheduling and content of each individual course.

Required courses:

- REN R 701 - Forestry and Environmental Sciences Field Skills *(typically starts ~ Aug 17)*
- REN R 702 - Forestry Field School for Professionals
- REN R 703 - Dendrology, Ecology & Biodiversity
- REN R 722 - Silviculture
- REN R 727 - Forest Resources Management
- FOREC 645 - Economics of Forestry
- FOREC 673 - Forest Policy
- REN R 728 - Integrated Forest Management

One course selected from:

- REN R 715 - Forest Measurements *(recommended if no prior forestry background)*
- REN R 548 - Forest Growth & Yield

One course selected from:

- R SOC 560 - Perspectives on Traditional Knowledge
- R SOC 675 - Public Participation and Conflict Resolution

One course selected from:

- REN R 747 - Forest Health
- REN R 549 - Fire Management Planning

Accelerated 4+1 RPF pathway for Environmental and Conservation Sciences (ENCS) graduates: Students who completed a 4-year BSc in ENCS at the University of Alberta may have already taken undergraduate courses that meet RPF competency requirements, including one or more from: ENCS 299, REN R 290, 295, 299, 322, 323, 340, 430, 431, 447, 448, FOREC 345, 473, R SOC 375 and 460. Optionally, AREC 365 and ENCS 473 can replace FOREC 645

and FOREC 673, respectively. ENCS students may contact the departmental graduate coordinator to develop an accelerated study plan with approved course replacements.

5.2.2. MF with Specialization in Environmental and Wildlife Conservation

This MF specialization offers a comprehensive curriculum on fundamental conservation principles, environmental assessment techniques, park management, nature interpretation and science communication.

Program Requirements: Participants complete a minimum of 30 units, including either 9 units of free electives combined with a 6-unit capping research project, or 3 units of free electives combined with a 12-unit capping research project. A 12-unit capping research project requires departmental approval (see section 5.6).

Course Requirements: (30 units) See course listings for more details on scheduling and content of each individual course.

15 units of topical electives from:

Fall term class options

- ENCS 673 - Environmental and Conservation Policy *(Fall or Winter)*
- REN R 526 - GIS Applications in Environmental Sciences *(Fall or Winter)*
- REN R 546 - Climates and Ecosystems
- REN R 566 - Parks, Ecology, and Society
- REN R 602 - Graduate Professional Skills *(sums to 3 credits with REN R 701)*
- REN R 701 - For. Env. Field Skills *(starts ~ Aug 17, sums to 3 credits with REN R 602)*
- REN R 703 - Dendrology, Ecology & Biodiversity
- REN R 710 - Environmental Assessment Principles and Methods
- REN R 770 - Utilization of Wildlife Resources
- R SOC 560 - Perspectives on Traditional Knowledge

Winter term class options

- ENCS 673 - Environmental and Conservation Policy *(Fall or Winter)*
- REN R 524 - Lichenology
- REN R 526 - GIS Applications in Environmental Sciences *(Fall or Winter)*
- REN R 567 - Environmental Interpretation and Science Communication
- REN R 569 - Biodiversity Analysis
- REN R 576 - Advanced Fisheries and Wildlife Management
- REN R 596 - Conservation Planning
- REN R 763 - Management and Conservation of Genetic Resources
- REN R 765 - Principles of Managing Natural Diversity
- REN R 767 - The Mosses of Alberta: Conservation and Identification
- R SOC 551 - Engagement and Public Policy
- R SOC 675 - Public Participation and Conflict Resolution

3 or 9 units of free electives selected from

- REN R at the 500-700 level
- FOREC at the 500-700 level

- R SOC at the 500-700 level

6 or 12 units selected from

- REN R 906, REN R 906A/B - Capping Research Project
- REN R 912, REN R 912A/B - Capping Research Project

5.2.3. MF with Specialization in Ecology and Ecosystem Restoration

This MF specialization focuses on restoring ecosystems impacted by anthropogenic activities, including agriculture, forestry, urban development, industrial contamination and climate change.

Program Requirements: Participants complete a minimum of 30 units, including either 9 units of free electives combined with a 6-unit capping research project, or 3 units of free electives combined with a 12-unit capping research project. A 12-unit capping research project requires departmental approval (see section 5.6).

Course Requirements: (30 units) See course listings for more details on scheduling and content of each individual course.

15 units of topical electives from:

Fall term class options

- R SOC 560 - Perspectives on Traditional Knowledge
- REN R 526 - GIS Applications in Environmental Science *(offered both terms)*
- REN R 532 - Disturbance Ecology Fundamentals
- REN R 541 - Advanced Soil Formation, Classification and Landscape Processes
- REN R 544 - Soil Remediation
- REN R 546 - Climates and Ecosystems
- REN R 602 – Graduate Professional Skills (*sums to 3 credits with REN R 701 above*)
- REN R 701 - For. Env. Field Skills *(starts ~ Aug 17, sums to 3 credits with REN R 602)*
- REN R 703 - Dendrology, Ecology & Biodiversity
- REN R 710 - Environmental Assessment Principles and Methods
- REN R 720 - Tree Physiology
- REN R 731 - Forest Watershed Management

Winter term class options

- R SOC 551 - Engagement and Public Policy
- R SOC 675 - Public Participation and Conflict Resolution
- REN R 561 - Urban Forest Ecology
- REN R 521 - Advanced Tree Physiology
- REN R 526 - GIS Applications in Environmental Science *(offered both terms)*
- REN R 561 - Urban Forest Ecology
- REN R 595 - Advanced Land Reclamation
- REN R 749 - Forest Soils
- REN R 730 - Physical Hydrology
- REN R 750 - Soil and Water Conservation
- REN R 761 - Restoration Ecology

3 or 9 units of free electives selected from

- REN R at the 500-700 level
- FOREC at the 500-700 level
- R SOC at the 500-700 level

6 or 12 units selected from

- REN R 906, REN R 906A/B - Capping Research Project
- REN R 912, REN R 912A/B - Capping Research Project

5.2.3. MF with Specialization in International Forestry

Participants are educated in modern sustainable forest and environmental management approaches that are sensitive to cultural and situational differences. Participants acquire an enhanced global view that accommodates multicultural and Indigenous perspectives on forest conservation and management.

Graduates receive two separate degrees, an MF with a Specialization in International Forestry from the University of Alberta, and a second degree from an approved list of degrees offered by European partner institutions. Depending on the undergraduate background, this program can contribute to the academic requirements to become a Registered Professional Forester.

Program Requirements: Participants complete a minimum of 36 units. For the University of Alberta degree, students are required to complete a minimum of 36 units, which must include at least 18 graduate units from REN R, FOREC or R SOC at the University of Alberta and 18 graduate units from an approved European Partner program. A minimum of 10 units must be research or thesis credits. The conversion factor for the European Credit Transfer System is 3 ECTS = 1 University of Alberta Credit.

Residence Requirements: The program is designed to be completed in 24 months of full-time study. The minimum period of residence is two, four-month terms of full-time attendance at the University of Alberta and two, four-month terms of full-time attendance at an approved European partner institution.

5.3. Program fees and financial support

All course-based Masters programs offered by the Department of Renewable Resources are self-funded with competitive tuition and fees. Participants pay instructional fees for course-based programs with standard fees for 30 credits (36 credits for the International Forestry Specialization).

Some academic advisors may offer partial graduate stipends for the duration of the capping research project. Alternatively, students can apply for paid internship and summer job opportunities during the summer break (May to August). Participants can also coordinate their capping research project with the funded sustainability scholars program, subject to competitive applications and partner approval.

For students who are pursuing a Registered Professional Forester designation, the College of Alberta Professional Foresters offers a competitive $1,500 Graduate Scholarship that is awarded based on merit.

For students who pursue an international dual degree through the TRANSFOR-M program, the University Alberta International provides Education Abroad Individual Awards of $4,5000 based on merit.

Outstanding applicants may be nominated by the Department for a Course-Based Master's Recruitment Scholarship valued at $17,500 plus tuition.

5.4. Program duration and scheduling options

Participants of course-based Masters programs in the Department of Renewable Resources have two-, three- or four-term scheduling options to complete their program in 8 to 20 months while maintaining full-time student status. Alternatively, the programs can also be taken on a part-time basis over a period of up to 6 years.

To qualify for full-time student status, participants must enroll in at least ★9 course credits in the Fall term and★9 course credits in the Winter term. Maintaining full-time student status may be a requirement for student loans, student visa, or eligibility for post-graduate work permits, etc. Such external full-time student status requirements normally do not apply to Spring and Summer terms. They normally also do not apply to the last term of the student's program.

Participants can discuss with their academic advisors which of the following available full-time scheduling options fits their circumstances best:

- A **16-month schedule** is a commonly selected option: register ★9 course credits in the Fall term and★9 course credits in the Winter term of the first year (3 courses each term). Then, register RENR 906 or RENR 906A/B in the Spring and/or Summer term, and complete the remaining ★6 credits of course-work in the subsequent Fall term.
- A **20-month schedule** with no academic activities during the summer break allows participants to take advantage of internship and summer job opportunities. Under this schedule, students register RENR 906A/B over two terms in the Fall and Winter terms of the second year (★3 credits in each term), plus ★6 credits of course-work in the Fall term of the second year to maintain full-time student status.
- A **10-12 month accelerated schedule** is feasible for experienced students. Either complete ★24 in the first two terms (4 courses each), or complete a larger ★12 research project in the spring and/or summer terms. A ★12 research project requires departmental approval (see section 5.6).
- An **8-month** accelerated schedule over two terms, with a heavier than normal course load (5 courses each term), is available for experienced participants in the MF program with Specialization in Sustainable Forest Management.
- Lastly, the dual degree MF with Specialization in International Forestry may require up to **24 months** of full-time study depending on the partner university's course requirements.

5.5. Role and Responsibilities of Advisors

Each course-based master student has an ***assigned academic advisor***, who helps with the development of a study plan, selection of courses, and development of a suitable topic for a capping research project. The advisor also serves as instructor for the REN R 906 capping research project, advises students during the proposal and research stages, and is responsible for grading the capping research project and submitting the Report of Completion of Course-Based Master's Degree to the graduate office.

In some cases, an additional faculty member may serve as a co-advisor when a student undertakes a larger research project. In these cases, the student registers a second REN R 906 with the faculty co-advisor, for a total of 12 credits. The project is then jointly supervised by the instructor and co-advisor, and the final grade is determined collaboratively. This arrangement acknowledges the contribution of both REN R 906 instructors and faculty, while maintaining consistent grading standards across programs.

5.6. Capping research projects

All course-based Master's programs, with the exception of the MF in Sustainable Forest Management, require completion of a capping research project. Students must normally complete two terms of coursework amounting to at least 18 graduate-level credits and be in good academic standing (GPA $\geq$ 2.7) before beginning a project.

Most participants complete a ★**6**-credit REN R 906 project. Its applied focus should integrate with the student's program specialization and may take the form of, for example, a management or policy analysis, a critical review of literature, a case study using secondary data, a replication of a previous study, or a limited-scope original research component such as an exploratory analysis or pilot experiment. Reports are typically 5,000 to 8,000 words in length, plus 25 to 50 references.

With approval of the graduate coordinator, students may also undertake a ★**12**-credit capping research project if (1) they have successfully completed at least 12 graduate-level credits, (2) are in above-average academic standing with a GPA of at least 3.3, and (3) have access to a suitable research opportunity, which typically includes a funded project with a research stipend or, in the case of the International Forestry specialization, a program requirement. In these cases, students register a second REN R 906 module with a reader or co-advisor, and the project is jointly supervised and co-graded by the RENR 906 instructor and reader or co-advisor. Twelve-credit projects are expected to include a moderate-scope original research component intermediate between an MSc thesis, with reports typically 8,000 to 12,000 words in length, plus 40 to 80 references.

REN R 906 or RENR 912 projects are registered via the form: http://tinyurl.com/renr906. Capping projects may be taken as a single 6-credit course, as two consecutive 3-credit courses (REN R 906A and REN R 906B), or as an approved 12-credit extended research project. For maximum flexibility in timing, capping research projects may be scheduled as follows:

For 6-credit projects: 6 registration options	**Fall**	**Winter**	**Spring**	**Summer**
	Sept-Dec	**Jan-April**	**May-mid Jun**	**July-mid Aug**
if you are finishing your degree/capstone in … Fall	906 - 6 credit			
…Winter		906 - 6 credit		
… Spring			906 - 6 credit	
… Summer				906 - 6 credit
If you want or need to spread your credits out to maintain student status or for other reasons (fiscal etc) and are finishing in the Winter	906A Fall /906B Winter - 6 credits must be registered as a unit, cannot be split up			
If you want or need to spread your credits out to maintain student status or for other reasons (fiscal etc) and are finishing in the Summer			906A Spring/906B Summer - 6 credits must be registered as a unit, cannot be split up	

Students with approved 12-credit research projects register one RENR 906 with their advisor and a second RENR 906 with a co-advisor or reader.

For 12-credit projects: 8 registration options	**Fall**	**Winter**	**Spring**	**Summer**
	Sept-Dec	**Jan-April**	**May-mid Jun**	**July-mid Aug**
Two registration options for completing at the end of the Winter term:	906 - 6 credit with advisor	906 - 6 credit with reader		
		906 - 6 credit with advisor		
		906 - 6 credit with reader		
Three registration options to complete at the end of the spring term	906A/B - 6 credit with advisor		906 - 6 credit with reader	
		906 - 6 credit with advisor	906 - 6 credit with reader	
			906 - 6 credit with advisor	
			906 - 6 credit with reader	
Three registration options to complete at the end of the summer term	906A/B - 6 credit with advisor			906 - 6 credit with reader
		906 - 6 credit with advisor		906 - 6 credit with reader
			906 - 6 credit with advisor	906 - 6 credit with reader

5.7. Grading guidance for capping research projects

Capping research project grades should follow the grading guidance of the University of Alberta for senior graduate level courses (600-level or higher). This translates to a long-term average expectation of exactly **3.3 on a 4-point scale** for capping research project grades (or a median of B+). Advisors should conform to this guidance using their best judgement. Grades of C or lower are considered failing grades, requiring students to re-register and repeat the RENR 906 capping course project.

A+	A	A-	B+	B	B-	C+	Failing
15%	15%	15%	17%	16%	10%	7%	5%

The advisor should base their capping research grade on weighted grading rubrics that should be discussed with the student at the beginning of the project. Upon completion of the project, the advisor should make the grade breakdown with very brief comments on each grading rubric available to the student. Grading rubrics should be designed to match different capping research project types. For example, a pilot experiment will have different grading rubrics compared to a management or policy analysis. The following are examples of grading rubrics that may or may not apply to specific capping research projects:

Clarity, originality and/or value of the problem statement, objective, or research question
Formulation of the background and rationale for the research. How well is the motivation for the research explained?
Coverage of relevant prior literature in the introduction section
Thoroughness of a literature review section, including critical engagement and synthesis of prior research
Conceptual framework of an analysis, or description of a theoretical or empirical basis for a research essay
Description of the research methods or the research approach
Judgement in selecting and clarity in presenting relevant results that pertain to the stated research objectives
Quality of figures and tables and their value in providing evidence for stated results and conclusions.
Appropriate interpretation of what the results mean in terms of applications, policies, or best practices
Judgement in identifying, and clarity in explaining specific limitations of the research
The student's independence and excellence in obtaining and curating data, and carrying out quantitative analysis
The student's independence and excellence in practical experimentation, fieldwork or labwork
The student's independence and excellence in drafting, writing and revising the capping research report

For the duration of the capping research project, the advisor should normally not be actively involved in research, analysis or editing of the report. Instead, the advisor should readily provide research advice, monitor progress, help students get un-stuck, and provide timely feedback on the content and structure of written drafts.

Such a relatively arms-length advisory role may not always be feasible or desirable, especially for ★12 unit capping research projects. If the student contributes to a grant-funded research program, the advisor typically has a vested interest in the success of the research. A more hands-on advisory role for course-based students, akin to a supervisory role for a thesis-based graduate student is also permissible.

However, for the integrity and fairness of the grading process across the course-based programs, ***advisors must exclude their own contributions from the capping research project grade***. This includes topic selection, research involvement and editing contributions that may have significantly enhanced the overall quality and value of the research report. However, ***the capping research project grade should only reflect the student's contribution***.

To ensure fairness of grading across course-based programs, all ★12 capping research project reports (which account for 40% of the student's cumulative GPA), must be jointly graded by an arms-length reader or co-advisor who was not involved in the research beyond providing general guidance and advice for research and writing. The reader or co-advisor makes the final grade decision.

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6. Program Requirements: Master of Agriculture

In this section:

- 6.1. General program information
- 6.2. MAg with Specialization in Conservation and Restoration of Land and Water
- 6.3. Detailed program guidance for students and advisors

6.1. General program information

This program offers an advanced degree in environmental agriculture. Participants are trained in the foundations of sustainable agricultural as well as practices and techniques needed to maximize the environmental quality of agroecological landscapes. Courses taken in this program can contribute towards the requirements to become a Registered Professional Agrologist. Applicants hold an undergraduate agriculture degree or a degree from an allied discipline such as environmental or biological sciences.

The program curriculum includes 15 units of course work chosen from topical electives, as well as free electives and a capping research project, for a total of 30 program credits, where most courses are weighted at 3 credits. Students have an assigned academic advisor to guide course selection and capping research project. The program is designed to be completed within 16

months of full-time study, but other full-time and part-time scheduling options are available (see Section 5.4 above).

The Master of Agriculture is a course-based program that offers a single specialization in Conservation and Restoration of Land and Water. While the non-specialized Master of Agriculture program still remains as a calendar entry, new students are no longer accepted into the base program. The base Master of Agriculture program is only available for internal program transfers under exceptional circumstances.

6.2. MAg with Specialization in Conservation and Restoration of Land and Water

This specialization is for students interested in environmental agriculture with a focus on conservation and restoration of soil and water resources. Participants are trained in the evaluation and management of greenhouse gases from agricultural sources, minimizing environmental impacts from agricultural practices, and restoring agroecosystems.

Program Requirements: Participants complete a minimum of 30 units, including either 9 units of free electives combined with a 6-unit capping research project, or 3 units of free electives combined with a 12-unit capping research project. A 12-unit capping research project requires departmental approval (see section 5.6).

Course Requirements: (30 units) See course listings for more details on scheduling and content of each individual course.

15 units of topical electives from:

Fall term class options

- R SOC 560 - Perspectives on Traditional Knowledge
- REN R 514 - Agroforestry Systems *(taught every second year)*
- REN R 541 - Advanced Soil Formation, Classification and Landscape Processes
- REN R 542 - Soil Biogeochemistry
- REN R 543 - Advanced Soil Physics
- REN R 544 - Soil Remediation
- REN R 744 - Environmental Soil Chemistry

Winter term class options

- R SOC 551 - Engagement and Public Policy
- R SOC 675 - Public Participation and Conflict Resolution
- REN R 550 - Advanced Soil Chemistry
- REN R 552 - Agricultural Sustainability and the Environment
- REN R 595 - Advanced Land Reclamation
- REN R 545 - Advanced Plant Nutrition
- REN R 750 - Soil and Water Conservation

3 or 9 units of free electives selected from

- REN R at the 500-700 level
- FOREC at the 500-700 level
- R SOC at the 500-700 level

6 or 12 units selected from

- REN R 906, REN R 906A/B - Capping Research Project
- REN R 912, REN R 912A/B - Capping Research Project

6.3. Detailed program guidance for students and advisors

For detailed guidance for the course-based Master of Agriculture program, please refer to the previous sections above, which apply identically to this program.

- 5.3. Program duration and scheduling options
- 5.4. Program fees and financial support
- 5.5. Role of advisors
- 5.6. Capping research project
- 5.7. Grading guidance for capping research projects

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7. Program Requirements: MBA/Master of Forestry

In this section:

- 7.1. Application
- 7.2. Entrance Requirements
- 7.3. Program Requirements
- 7.4. Length of Program

7.1. Application

Departments in the Faculty of Agricultural, Life & Environmental Sciences (ALES) and the School of Business (Business) offer a program of joint study that enables students to earn both the MBA and MF degrees after two calendar years of full-time study. Applicants must submit an application form to the Associate Dean, MBA Programs in the School of Business. A letter indicating the intention to apply to the MBA/MF program and including a statement of the applicant's forestry specialization, background and interests should also be enclosed.

7.2. Entrance Requirements

Normally only students with a BSc degree in Forestry with at least 2 years relevant professional experience will be admissible to this program. Applicants must follow the admission procedures and meet the admission requirements of both Business and the Department of Renewable Resources. All applicants are required to have a Graduate Management Admission Test (GMAT) test score of 550 and all students for whom English is not their native language must have a minimum Test of English as a Foreign Language (TOEFL) score of 600 (paper-based) or 250 (computer-based). Admission will be recommended only for those students judged to have the ability and motivation to handle the significant demands of the program.

7.3. Program Requirements

- *30 required core MBA courses
- Three *3 elective MBA courses
- Two *3 graduate elective courses (Business or AFHE)
- REN R 601 and 602 and 3 other approved *3 graduate-level Forestry courses
- SMO 641 Business Strategy

Students who decide to transfer out of the joint program into the regular MBA or MF program will have to apply and meet the full degree requirements of that program.

7.4. Length of Program

Students enrolled in the joint program on a full-time basis can complete the program in two calendar years. Students may undertake the joint program on a part-time basis. The duration of the total program must not exceed six consecutive calendar years.

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8. Program Requirements: MBA/Master of Agriculture

In this section:

- 8.1. Application
- 8.2. Entrance Requirements
- 8.3. Program Requirements
- 8.4. Length of Program

8.1. Application

The Departments in the Faculty of Agricultural, Life & Environmental Sciences and Business offer a program of joint study that enables students to earn both the MBA and MAg degrees after two calendar years of full-time study. Applicants must submit an application form to the Associate Dean, MBA Programs in Business. A letter indicating the intention to apply to the MBA/MAg program and including a statement of the applicant's agricultural specialization, background and interests should also be enclosed.

8.2. Entrance Requirements

Normally only students with a BSc degree in agricultural-related discipline ***with at least 3 years relevant professional experience*** will be admissible to this program. Applicants must follow the admission procedures and meet the admission requirements of both Business and the Department of Renewable Resources. All applicants are required to have a GMAT test score of 550 and all students for whom English is not their native language must have a minimum TOEFL score of 600 (paper-based) or 250 (computer-based). Admission will be recommended only for those students judged to have the ability and motivation to handle the significant demands of the program.

8.3. Program Requirements

- *30 required core MBA courses
- Two *3 elective MBA courses
- Two *3 graduate elective courses (Business or AFHE)
- Five *3 approved graduate-level courses in agricultural-related disciplines
- SMO 641 Business Strategy
- A *3 project in agriculture with a significant business component

Students who decide to transfer out of the joint program into the regular MBA or MAg program will have to apply and meet the full degree requirements of that program.

8.4. Length of Program

Students enrolled in the joint program on a full-time basis can complete the program in two calendar years. Students may undertake the joint program on a part-time basis. The duration of the total program must not exceed six consecutive calendar years.

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9. Conflict Resolution

This section points to important University of Alberta policies, procedures and resources available to graduate students to resolve potential conflicts and problems that may arise during their program.

In this section:

- 9.1. Supervisory Breakdown
- 9.2. Academic Misconduct
- 9.3. Conflict of Interest Policies
- 9.4. Discrimination, Harassment and Duty to Accommodate

9.1. Supervisory Breakdown

Conflicts should be resolved as close to the source as possible**.** Students and Supervisors are encouraged to address any issues promptly and informally. The supervisor should document the discussions and keep a record of any agreements made. In the event of a conflict that resists immediate resolution, the student and/or the supervisor may approach the Graduate Coordinator for advice. The ***Graduate Coordinator*** is responsible for coordinating informal consultation and mediation. The Graduate Coordinator or the parties involved may request advice and/or mediation assistance from the ***Associate Dean Research and Graduate Studies*** of the Faculty of ALES.

If conflicts continue to persist, any party may seek the advice of the ***Faculty of Graduate & Postdoctoral Studies (GPS)***. When GPS becomes aware of a supervisory breakdown, an

Associate Dean of GPS reaches out to the student and invites her/him to a meeting to discuss the issue. Students may enlist the ***Student Ombudservice*** to represent them at any meeting with Department and/or GPS representatives. It is important to note that neither students nor supervisors shall be required to participate in informal resolution against their wishes.

If informal resolution is unsuccessful or inappropriate, and the Graduate Coordinator determines that the supervisor-student relationship is beyond repair, the Department will attempt in good faith to work with the student to find alternative supervision within the department, and will keep the GPS and the Faculty of ALES apprised of these efforts. If the best arrangements of the department and the GPS fail to meet the expectations of the student, the student may choose to withdraw without prejudice.

If the student refuses to accept the supervision provided, or if no supervision can be secured, then the student is not fulfilling the academic requirement of having a supervisor and may, on academic grounds, be required to withdraw. Where the supervisor has been providing funding to the student, the funding should continue for a period of at least 30 days from the date on which the Graduate Coordinator determines that the supervisor-student relationship is beyond repair.

9.2. Academic Misconduct

The University of Alberta places a very high value on academic integrity. The ***Code of Student Behaviour*** (COSB) outlines what students are prohibited from doing and provides the rationale for those rules, noting that the value of our degree depends upon the integrity of the teaching and learning process.
If an instructor suspects inappropriate academic behavior in the context of student course work, they meet with the student to determine whether or not an offence has been committed. Before the meeting, they inform the student of the purpose of the meeting. The advice or presence of the ***Graduate Coordinator*** may be requested by either the student or the instructor/supervisor. The instructor does not have the authority to impose any disciplinary measures, such as grade reductions or extra assignments. Instead the instructor recommends a sanction to the ***Associate Dean Graduate Studies*** of the Faculty of ALES. The Associate Dean meets with student to investigate the allegations and determines grade sanction or other disciplinary actions in accordance with the Code of Student Behaviour, which is communicated in writing to the student and instructor.

Regarding academic integrity related to thesis research by graduate students, the University of Alberta's Research and Scholarship Integrity Policy (RSIP) outlines detailed and thorough procedures for reviewing allegations of academic misconduct, as well as a discussion of how the policy intersects with the Code of Student Behaviour. Supervisors, exam committee members or other faculty members must refer the matter to the Faculty of Graduate & Postdoctoral Studies. An ***Associate Dean of Graduate & Postdoctoral Studies*** meets with student to investigate the allegations and determines disciplinary actions in accordance with the Code of Student Behaviour, which is communicated in writing to the student and supervisor.

Regarding academic integrity related to research and publication by post-doctoral fellows, faculty, and staff, the University of Alberta's Research and Scholarship Integrity Policy (RSIP)

outlines detailed and thorough procedures for reviewing allegations of academic misconduct. ***Any person*** who believes that misconduct under the Research and Scholarship Integrity Policy has been committed may lodge a complaint by submitting a written account of the alleged offense to the ***Provost***. The Provost or the Vice-President (Research) will also investigate credible anonymous complaints.

9.3. Conflict of Interest Policies

A conflict of interest is a situation where professional judgment, decisions or actions may be (or could be perceived to be) unduly influenced by private interests. To make informed and sound decisions pertaining to matters of conflict of interest, the University of Alberta Policies and Procedures On-Line (UAPPOL) provides guidelines for various financial and personal conflict of interest situations.

Consensual faculty-student relationships carry risks of conflict of interest and breach of professional ethics. If personal and intimate relationships develop or exist between a student and a faculty member (e.g. dating, romantic, sexual or marriage), these must be immediately be addressed with consultation to conflict of interest guidelines (UAPPOL) and discussions with the ***Department Chair***.

Even after resolving direct faculty-student conflict of interest situations (e.g., supervising, grading, or any other form of evaluation for admission, financial aid, graduation, and others), the parties involved should be sensitive to the perceptions of others that a student who has a consensual relationship may receive preferential treatment from the faculty member or the faculty member's colleagues.

9.4. Discrimination, Harassment and Duty to Accommodate

All members of the University of Alberta community have a responsibility to promote a work, study and living environment free of discrimination and harassment as outlined in the University of Alberta's Discrimination, Harassment and Duty to Accommodate Policy. The University of Alberta is committed to Equity, Diversity and Inclusion (EDI). Visit the departmental EDI web page for guidance and for support in conflict resolution.

Any person may make a written complaint to the Provost about the conduct of a supervisor or staff member under the Article 16 of the Trust/Research Academic Staff Agreement. All Article 16 complaint investigations are overseen by the Provost and governed by the terms of Faculty Agreement. Article 16 complains are fully protected by confidentiality.

Similarly, students may be disciplined if they violate the Code of Student Behaviour. The policy document contains descriptions of unacceptable behaviour for Students in the University, the sanctions for commission of the offences, and explanations of the complete discipline and appeal processes.

10. Previous Versions of the Graduate Handbook

The graduate program handbook is a living document that usually receives revisions once every year. Departmental rules and policies that were published in previous versions of the handbook generally remain valid for continuing students. To retrieve a version of the handbook that corresponds to their term of admission, students may consult the links below:

- Sep 2025
- May 2024
- Dec 2023
- Sep 2022

Students normally have the choice to either comply with the rules and policies as described at the time of their admission, or they may alternatively adopt any revisions. There may be rare exceptions to this practice if the new rules, regulations, and requirements are mandated as effective immediately by the Faculty of Graduate and Postdoctoral Studies.