BIOLOGY GRADUATE HANDBOOK
2024 / 2025*

HTTPS://WWW.SASKATCHEWAN.CA/RESIDENTS/ENVIRONMENT-PUBLIC-HEALTH-AND-SAFETY/STATE-OF-THE-ENVIRONMENT/SASKATCHEWANS-STATE-OF-THE-ENVIRONMENT/PROTECTED-AND-CONSERVED-AREAS

MASTER OF SCIENCE (MSc)
DOCTOR OF PHILOSOPHY (PhD)

Department of Biology
UNIVERSITY OF SASKATCHEWAN

*Note: This handbook represents information from the Department and CGPS policies in place at the time of writing and subject to change.

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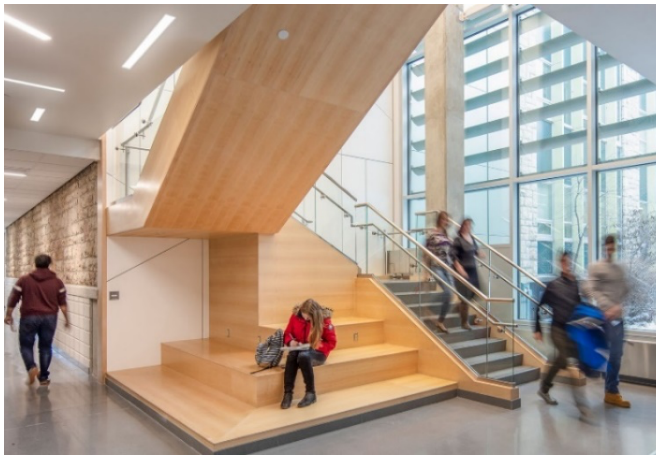
WELCOME TO THE DEPARTMENT OF BIOLOGY

The Department of Biology is a model of excellence. We aim to provide high-quality mentorship and training of student researchers within the broad field of Biological Sciences. Our faculty bridge multiple disciplines in the natural sciences with expertise in genetics and molecular biology, cellular biology and physiology, systematics, animal behaviour, ecology of populations and communities, and ecosystem processes. We are thrilled that you have decided to join the USASK Biology community!

This handbook contains information about policies and procedures governing the Biology graduate programs. While the Department has worked to ensure that its procedures adhere to the standards of the College of Graduate and Postdoctoral Studies (CGPS) at the University of Saskatchewan, faculty, staff, and students should contact the Graduate Chair to resolve any conflicting information between this handbook and CGPS procedures.

This handbook will be your first step toward a successful academic adventure!



Message from the Department Head

Welcome to the Department of Biology. Whether you are interested in understanding biological mechanisms that at scales smaller than a single cell, or you are interested in modeling ecological processes across the globe, we have a place for you here. You are now part of a legacy of graduate students who have made the most of their time here, contributing to a worldwide body of information about how life on Earth works.

As a graduate student in Biology you will have the opportunity to interact with faculty members with a broad set of research interests and subdisciplines. This includes associate and adjunct faculty members in other departments on campus, as well as institutions other than the University of Saskatchewan, who supervise students and sit on graduate advisory committees. We are proud to be the home to many award-winning researchers and teachers and I encourage you to engage with all of your professors in the department during your time with us.

I also encourage you to interact with your graduate student colleagues. They have a wealth of information and collective experience that you can benefit from. More importantly, I hope that during your time here you will form relationships and make friendships that will extend long after your time as a student in the department. Whatever path brought you to us is now intertwined with others from around the world.

Your graduate studies committee has prepared this handbook to assist you with the administration of your program. We also have a number of people who are here to provide help and assistance along the way. Your supervisor is likely to be your first point of contact for most of your questions, but I welcome you to get in touch if I can be of help.

Welcome to the Biology community!

Chris Todd

Professor and Biology Head of Department

MESSAGE FROM THE BIOLOGY GRADUATE STUDENT ASSOCIATION (BGSA)

Dear fellow Biology Graduate Students,

On behalf of the Biology Graduate Students Association (BGSA), welcome to the U of S!

The BGSA is a student-based organization that exists to support graduate students and connect you with resources. We interact with students, the Graduate Studies Committee, the Department of Biology, and the university-wide Graduate Students Association, so we can assist with a wide range of issues relevant to grad student life. If we don't have the answers you need, we can work with you to find them.

During your degree, contact the BGSA about anything, including (but not limited to):

Difficulties with your supervisor
Questions about your program
Finding resources
General concerns about being a graduate student
Ideas to enrich the department
Assistance and ideas to organize department events
Meet new people

We also encourage you to get more involved with the BGSA by running for an executive position after the first year of your program! Joining is a great way to meet like-minded peers and learn more about the workings of the university, all while advocating for students. Our elections occur in at the end of Winter Term.

Again, feel free to email us about anything! We are a group of peers that are here to support you.

Yours sincerely,

BGSA Executives

biology.gsa@usask.ca

ACADEMIC INTEGRITY

At the University of Saskatchewan, "integrity is expected of all students in their academic work—class participation, examinations, assignments, research practica— and in their non-academic interactions and activities as well."[1]

What academic integrity means for students:

Perform your own work unless specifically instructed otherwise.
Check with your instructor about whether collaboration or assistance from others is permitted.
Use your own work to complete assignments and exams.
Cite the source when quoting or paraphrasing someone else's work. Discuss with your professor if you have any questions about whether sources require citation.
Follow examination rules.
Discuss with your professor if you are using the same material for assignments in two different courses.
Be truthful on all university forms.
Use the same standard of honesty with fellow students, lab instructors, teaching assistants, sessional instructors and administrative staff as examinations, assignments, research, you do with faculty.[2]

Please consult the University Library for more information about Academic Integrity including information on the appropriate use of Artificial Intelligence in research and coursework, the Library's Academic Integrity Tutorial and The Office of the University Secretary for more information about Academic Misconduct, definitions and regulations.

[1]University of Saskatchewan. University Secretary's Office. 2012 "Integrity Defined." https://secretariat.usask.ca/documents/student-conduct-appeals/StudentAcademicMisconduct.pdf
[2]Ibid.

COMMITMENT TO EQUITY, DIVERSITY AND INCLUSION

The Department of Biology is committed to working towards improving the equity, diversity, and inclusion of our Department, University communities, and beyond. The Department fully supports the equity goals of the College of Arts and Science, the College of Graduate and Postdoctoral Studies, and the University of Saskatchewan. To address these issues in the key areas of access, support, curriculum, research opportunities, methodology, and pedagogy, the Biology Department is committed to supporting EDI.

GRADUATE STUDIES COMMITTEE (GSC)

The GSC normally consists of the Head of the Department, five other faculty members appointed by the Head (one of whom is the Chair), and two graduate student members appointed by graduate students in the Department. The students are voting members of the GSC whenever policy decisions are made, but will be excluded from discussion relating to individual students, their records and performance.

The role of the GSC is to ensure uniform admission, course, thesis, and examination standards for students in the Department. The GSC may also make recommendations regarding disciplinary action against a student.

The Graduate Studies Committee (GSC) also administers graduate work and teaching scholarships in the Department of Biology. The GSC reports to the Department on matters of policy and to the College of Graduate Studies and Research (College) on matters affecting individual students. Each MSc and PhD student in the Department is represented individually by an Advisory committee, which is responsible for the direction and progress of the student and reports to the College via the GSC. Students, supervisors and members of Advisory committees are all responsible for ensuring that College and departmental requirements are met.

Student Supports

Graduate Students' Association

The Graduate Students' Association (GSA) is the campus-wide body which advocates for the needs and concerns of graduate students at the University of Saskatchewan. The GSA represents graduate students on many University committees. Graduate students may contact the GSA for information or assistance with problems related to University affairs.

Graduate Students' Association Emmanuel & St. Chad, 1337 College Drive
Mailing Address: Room 110 Place Riel 1 Campus Drive Saskatoon, SK Canada S7N 5A3
Telephone: (306) 966-8471
Facsimile: (306) 966-8598
Website: www.gsa.usask.ca

Library and Writing Resources

The Biology Library guide offers resources for accessing library databases and other research tools.

The Writing Centre offers several helpful workshops, tutoring, and one-on-one assistance to improve your graduate level writing.

Graduate Student Support Resources

The Student Wellness Centre offers urgent and non-urgent physical and mental health care to University of Saskatchewan students and their spouses and children.

The Grad Hub an online self-directed website (Britto & Rush, 2013) that empowers users to take control of their academic journey. The Hub is a specially curated centralized location of graduate student and postdoctoral information presented through the lens of the user.

Student Central can help with questions about finances, registration, academic life and more.

College of Graduate and Postdoctoral Studies (CGPS) support you throughout your program. CGPS focuses on 3 priorities—collaboration with partners internal and external to the university, opportunities for international experiences, and program quality and innovation.

Aboriginal Students' Centre works in partnership with colleges and services across campus to support Aboriginal students.

Access and Equity Services (AES) is guided by Saskatchewan's Human Rights legislation and the duty to accommodate individuals requiring accommodations based on disability, religion, family status, and gender identity.

INTERNATIONAL STUDENTS

New and existing international students will have additional questions about immigration, visas, health, banking, and working in Canada. Please visit https://students.usask.ca/international/#InternationalStudentandStudyAbroadCentre

The International Student and Study Abroad Centre (ISSAC) is a central support unit and a campus partner for all students, staff, and faculty. ISSAC is dedicated to fostering a welcoming, globally aware, and inclusive campus community.

International students are responsible for ensuring their immigration documentation is up to date and filed with the department. Study permits and SIN extensions must be applied for in a timely manner and updated documents or POS (proof of submission) must be shared with the department before expiry dates occur. Failure to provide the required documentation may result in delays, withdrawl from the program, or suspension of stipend payroll.

FUNDING AND PAYROLL

Graduate students are funded in a variety of ways often through research grant support held by the supervisor, external or internal teaching or academic scholarships and fellowships. Continued funding may have conditions such as grant deadlines and deliverables, teaching service requirements in undergraduate courses, maintaining good academic standing, or demonstration of satisfactory progress. It is important to establish clear funding expectations with your supervisor at the beginning of the program as well as revisiting these at least once annually including the funding source, value, and duration. See the Student Supervisor Agreement in **Appendix A**.

DEPARTMENT SCHOLARSHIPS

The GSC is responsible for administering competitions to award the Biology Graduate Scholarship (BGS), which is a teaching and research supported position that shares funding from the College of Arts and Sciences, College of Graduate and Postdoctoral Studies, The Biology Department, and a student's faculty supervisor. As such, these awards are subject to College as well as departmental regulations. College regulations deal mainly with period of eligibility for support, academic standing, and service requirements. They are published in the College Policy and Procedures Manual that is available on the College website (https://www.usask.ca/cgps/policy-and-procedure/index.php). The departmental scholarships are valued at $24,000/year for maximum 48 months or 24 months for PhD and MSc students, respectively.

Teaching obligations are required to be completed, nearly universally, in the months of September thru April. As per PSAC agreement, teaching hours are casual employment and need to be reported on the 15th and last day of the month (refer to time submission and approval dates):
https://jira.usask.ca/servicedesk/customer/kb/view/1418953010?applicationId=1c7b0151-f1d6-37ea-a43a-00edbb3a2308&portalId=1&pageNumber=1&resultNumber=1&q=casual%2520tim&q_time=1638464279641

Rate of pay is set according to the PSAC agreement and available on the UofS website:
https://careers.usask.ca/agreements/compensation/salary-ranges.php#PSACGraduateStudents

USASK AND EXTERNAL SCHOLARSHIPS AND AWARDS

Dean's scholarships: PhD - $24,000/year for 2 years are administered by the CGPS in the initial period, followed by the matching support from the Department which takes the form of the BGS, thus all associated conditions and guidelines apply.

Biology graduate students are encouraged to apply for and obtain University (eg. Dean's) or external scholarships (eg. NSERC, Mitacs) to support their graduate program and stipend. Many students are supported by a combination of awards, fellowships, or scholarships from university wide competitions, department specific opportunities, and national or external awards. Additional information on non-departmental scholarships and awards may be found here https://grad.usask.ca/funding/scholarships.php

Students are encouraged to discuss plans to apply for any external awards with their supervisor ahead of time and discuss expectations that may arise if funding is successful or unsuccessful. Students may not hold two major awards at one time (eg. NSERC and Department scholarship). However, students are allowed to hold up to 50% of the value of original major award from other sources.

PAYROLL

Departmental minimum graduate stipend values are currently set as follows:
PhD -$24,000/year
MSc -$22,500/year

For payroll process to be completed, the following documents must be submitted to the financial officer:
TD1 tax forms (Saskatchewan and federal) https://www.canada.ca/en/revenue-agency/services/forms-publications/td1-personal-tax-credits-returns.html
Direct deposit form https://wiki.usask.ca/display/public/CPKB/Employee+Direct+Deposit+Form
Copy of a study/work permit (international students)
Letter of offer where applicable

Scholarship and stipend payments follow the twice monthly payroll schedule with direct deposits being completed on the 15th and last working day of the month. Any changes in payroll must be submitted by the supervisor to the Financial officer 2 weeks prior to be processed on the next payroll. Payroll information can be viewed via PAWS channel in Pay and Time Reporting section. It should be noted that personal information (address, direct deposit, etc) in PAWS must be kept up to date as it is used for payroll and Revenue Canada reporting.

TRAVEL AND EXPENSE CLAIMS

All travel and expense claims for research purposes and approved by your supervisor as the grant fund holder are completed via Concur (in PAWS). Graduate students who are receiving payroll payments have their information available in the system automatically. Please note you must obtain the CFOPAL (fund number) and select your supervisor as the approver in Concur when submitting a claim or creating a request, unless otherwise instructed.

If you have any questions or would like more information, contact financial officer of the Department.

Communications

Biology Website
The Biology website https://artsandscience.usask.ca/biology/ is updated regularly with information on the department and its resources.

USask Email Address
Your USask email is connected to your PAWS account, and this is the email address used by your professors and the department to contact, connect, and keep you informed. Please ensure that you check this account regularly. You are first given an email address that is your nsid@mail.usask.ca. Instructions for setting up an email alias are here You should set up an alias using your firstname.lastname@usask.ca

Biology Faculty

A list of faculty, adjuncts and staff can be found on the Biology Dept website

https://artsandscience.usask.ca/biology/people/people.php?r=FACULTY

Department Staff and Supports

Role	Contact name	Email	Phone
Main office	Sidra Rafique	biology.dept@usask.ca	306 966 4399
Department Head	Chris Todd	chris.todd@usask.ca	306 966 4400
Graduate Secretary	Audrey Boensch	audrey.boensch@usask.ca	306 966 4400
Financial Officer	Halyna Heisler	halyna.heisler@usask.ca	306 966 4424
Building	Marlynn Mireau	marlynn.mireau@@usask.ca	
Lab supports/Microscopy	Guosheng Liu	guosheng.liu@usask.ca	
Graduate Chair	James Benson	James.benson@usask.ca	

BIOLOGY GRADUATE PROGRAMS

The Department of Biology offers 2 graduate programs:

Master of Science (MSc): The MSc is typically a 2.5 year thesis-based program that provides students with the opportunities and skills to advance their understanding of diverse topics in the field of Biology. Students will apply tools to learn problem-solving, improve upon their foundations of science, and develop research skills which will help prepare students to play a significant role in knowledge generation, translation, and decision-making in the discipline. (Minimum: 9 credit units of course work plus a MSc thesis)

Doctor of Philosophy (PhD): This dissertation-based degree is typically 4 years for students who want an advanced degree in researching diverse topics in the field of Biology. Our PhD students attain a deep understanding of concepts while designing and implementing their own original research. Through demonstrated excellence in their fields of study, they are ready to become leaders in academia, industry, non-profit organizations, and the public sector. (Minimum: PhD dissertation only, course work may be recommended)

MASTER OF SCIENCE (MSC)

MSC ADMISSIONS

General Admission information
Requirements for admission to the College of Graduate Studies are published in the University Calendar and on the College website (https://cgps.usask.ca/). Correspondence should be addressed to: The Chair, Graduate Studies Committee, Department of Biology, University of Saskatchewan, Collaborative Science Research Building, 112 Science Place, Saskatoon, SK, S7N 5E2, Canada. The GSC approves applications for admission to the Department but acceptance of an applicant is dependent upon a supervisor agreeing to supervise the student. Occasionally the supervisor and GSC may wish to interview an applicant before a final decision is made. Supervisors are responsible for providing research space for their students unless other arrangements have been made with the Assistant Head of the Department. The Department of Biology cannot assume responsibility for providing laboratory space for the students of associate faculty members or adjunct professors.

Probationary Admission:
Applicants whose qualifications do not meet the minimum requirements or whose academic qualifications are difficult to assess may be admitted on a probationary status to a program. Applicants in this category may be required to take one or more preparatory courses to improve their qualifications. In this case, they will be required to pay additional fees. The student's status will be reviewed after a specified amount of academic work is completed. If progress is satisfactory, the Program Director or Graduate Chair may recommend to CGPS that the student be considered fully qualified. Students who do not achieve the probationary conditions may withdraw voluntarily or failing this, will be required to discontinue. In certain exceptional situations, the academic unit may extend the probationary period with a new set of conditions, agreed to by the student and by the College of Graduate and Postdoctoral Studies.

MSC PROGRAM RESIDENCY AND MILESTONES

Residency in the program is considered fulfilled when all requirements are met. Graduate students and those involved in graduate studies are strongly encouraged to ensure that students move as expeditiously as possible through their programs of studies. Master's programs, whether full- or part-time, are limited to five years in

length. This time is measured from the beginning of the first term of registration for work which is included in the program of studies (This may be course work done at the University of Saskatchewan or elsewhere, and, in general terms, includes the thesis). The following timeline is based on a typical September program start date. For program start dates other than September, please consult the Graduate Chair for instruction on the program requirements and timelines for completion.

The following checklist itemizes the major benchmarks normally completed during the MSc program.

Time in Program	Program Requirements	Responsible Party
Year 1	**Required courses (9 credit units):** BIOL 994 BIOL 990 GSR 960 (GSR 961 and/or GSR 962 may also be required) Other safety or hands on training	Student, in consultation with supervisor for course selection
	Complete Student-Supervisor agreement	Supervisor with student
	Select members for graduate advisory committee.	Supervisor with student
	Select research topic and initiate thesis proposal	Student with supervisor
	Inaugural meeting (within 4 months) to set up Program of Studies	Student and advisory committee. Program of Studies must be filed in writing to the Graduate Programs Advisor by the advisory committee chair
	Proposal defence meeting (within 8 months)	Student and advisory committee
	Research and data collection can commence once required ethics certificates or research licenses are secured, and with approval of the advisory committee	Student. Copies of ethics certificates or licenses must be filed with the graduate secretary
	Progress Reporting (4 months, 8 months and every 6 months thereafter)	Student and supervisor
	BIOL 990 participation requirements (poster)	Student
Year 2 until program completion	BIOL 990 participation requirements (1 oral seminar in year 2 only)	Student
	Progress Reporting (every 6 months until completion; at least 1 in person meeting per year)	Student and supervisor
	Permission to Write	Supervisor and student determine when permission from advisory committee should be sought.
	Permission to Defend	Supervisor and student determine when permission should be sought. Advisory committee chair records (discussion or e-mail correspondence) and files decision
	Thesis Submission to Dept and CGPS to schedule defence (4 weeks prior to defence)	Student and Supervisor, Graduate Secretary to arrange defence.
	Final electronic copies of Approved Dissertation submitted to CGPS	Student

MSc Advisory Committee Structure

The supervisor, in consultation with the student, invites others to serve on the Advisory committee. The Advisory committee has the primary responsibility for directing and evaluating the student. The Advisory committee recommends a Program of Studies for the graduate student and may recommend revisions to that program. The role of the Advisory committee is to assist the student in completing program requirements. Members are brought together for their substantive expertise in the research area.

MSc committees are composed of a minimum of 3 members* including:
1 research supervisor (or 2 co-supervisors),
2 more committee members (or 1 if there are co-supervisors)

*At least 2 of the committee members should be from Biology (Faculty, Adjunct, Associate) and at least 1 is a regular Biology faculty member.

The GSC chair or delegate is an ex-officio member of every advisory committee and may attend any meeting upon request by the student or committee.

GSC Chair is required to attend the following meetings:
Inaugural meeting to set up the Program of Study
Examinations - Thesis Defence (MSc)
Following an unsatisfactory progress meeting

Course work

A fully qualified MSc student is required to successfully complete a **minimum of 9 credit units** of graduate course work. Courses will be selected based on advice of the student's supervisor and committee and will be recorded on the Program of Studies.

A MSc student will normally complete the course requirements in the first year of full-time study. Additional courses may be required if the advisory committee feels that the student's background is deficient in some area. The elective course work will be in the student's area of specialization and is selected in consultation with the advisory committee. A student may take one 400-level undergraduate course to fulfill the elective requirements, with the approval of the advisory committee. Credit may be granted for graduate-level courses taken previously at this or another university (eg. Western Dean's Agreement), provided they have not already been credited toward a bachelor's or advanced degree. The Admissions and Awards Committee may require a student to complete an examination to demonstrate proficiency before credit is granted for courses taken at another university.

The student is also required to register in
BIOL 990 (no credit units- Fall/Winter terms)
BIOL 994 (no credit units- All terms)

The requirements for BIOL 990 are met by attending and participating in structured Dept seminars and/or presenting the results of thesis research at the annual symposium (typically in April). Completion of the research requirement is met when the thesis is successfully defended and approved.

All graduate students at the University of Saskatchewan are required to complete GSR 960: Research Ethics, and may be required to take either GPS 961: Ethics and Integrity in Human Research or GPS 962: Ethics and Integrity in

Animal Research, depending on the nature of their project, thesis, or dissertation work. Once registered in GPS 962, the UACC Animal Ethics Course will satisfy the GPS 962 requirement, which is accessed at this link or in the Training and Development service in PAWS.

Students may also be required to complete other additional hands on or safety training and certification as it relates to their research (eg. Aquatics, Rodent handling, Lab safety, Biosafety, Field safety, or Radiation safety). Students should discuss what additional safety training is needed with their supervisors.

During the inaugural committee meeting, the supervisor and committee will work with the student to develop a Program of studies. This program indicates the nature of the research, the members of the committee, and all course and other requirements. The Program of Studies must be approved by the advisory committee of the student. Any changes made to the program of studies must be approved by the advisory committee and must be recorded in writing and submitted to the Department and to CGPS. Each year, the student is expected to demonstrate progress towards completing course and program requirements. Failure to make progress may result in a recommendation that the student withdraw. Additionally, students supported by funding must maintain specific grade point averages in order to retain funding. Students failing to meet these requirements may face an assessment of unsatisfactory progress.

At the Master's level, students must achieve a grade of at least 60% in all courses required for the degree and maintain an overall weighted average of at least 70% in those courses to retain standing. If the student fails to meet this standard, the advisory committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to re-take a course or undertake other remedial work if, in the opinion of the advisory committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the advisory committee, it will recommend that the student discontinue from their program.

SEMINAR (BIOL 990)

The Biology Seminar (BIOL 990) is a requirement for all MSc students. To receive credit for this course, MSc students must attend and contribute to the symposium for the first two years of their program. Presentations will provide the student with the experience of a formal seminar setting and the opportunity to share research and scholarly activity with other students and faculty.

A student in the MSc program is required to present one poster (year 1) and one seminar (year 2) during the annual Biology student symposium held in the spring. Ideally, the poster will focus on the research proposal or work conducted to date and the year 2 seminar should cover all aspects of the research conducted to date in a 15–20 minute oral presentation.

Constructive feedback will be gathered by the Coordinator or designate and then shared with the student presenter. If a student gives an unsatisfactory seminar or does not consistently attend symposium, the Coordinator will notify the advisory committee that will decide on an appropriate action (for example, another seminar may be required). The Coordinator must inform the graduate support staff once a student has met the BIOL 990 presentation requirements.

PROGRESS MEETINGS

Every 6 months a student is expected to demonstrate progress towards completing program requirements. The purpose of a progress report meeting is to inform the advisory committee on the student's progress towards thesis completion. This progress can take the form of

- completed coursework,
- research preparation, including learning or developing research methods and experimental design,
- experiments or data collection,
- data analysis and visualization,
- significant writing milestones,
- research dissemination,
- other progress, as agreed upon by the committee.

This is the student's opportunity to share progress in these areas, to address impediments to their progress, and seek feedback from their committee. The goal of each meeting is to update the committee on research work undertaken, seek constructive feedback on progress, advice towards research decision-making, assess quality of data and writing, or to address other problems, and to ensure that all the student's needs are being adequately met.

Pre-Meeting Requirements: At least 1-2 weeks before the scheduled meeting, the student will share a completed progress report document (See template in **Appendix B**), and include any relevant appendices (e.g. papers, abstracts, details of workshops, figures, etc).

In Person Option Duration: At minimum, 60 minutes should be reserved for an in person progress meeting. If possible, 90 minutes should be reserved if the committee agrees and is available.

Meeting: At the meeting, the student will give a 10-15 minute presentation highlighting their progress and any issues that need to be addressed during the meeting. After the presentation, all items related to the student's progress can be discussed, and then the student should be excused for a brief *in camera* discussion. Decisions on satisfactory progress need to be made on each major progress item (research skills, requisite knowledge and research accomplishments) as well as the overall progress of the student that is commensurate with time in program and their experience. Upon deliberation, the student should be invited back, and the decisions of the committee should be explained to the student and detailed on the report form along with recommendations. Note: typically the GSC chair or designate does not participate in progress report meetings unless the conclusion of the previous progress report meeting resulted in a decision of unsatisfactory overall progress.

Evaluation of progress: Satisfactory progress towards degree completion is subjective, but should be carefully considered in light of all possible metrics of progress, with particular consideration of the student's previous work, their experience and time in program, and the original and any updated approved timelines. Importantly, lack of new data does not necessarily indicate lack of progress if considerable effort has been spent on developing, refining, or troubleshooting protocols. Committee members may consult **Appendix C** for guidelines on assessing satisfactory progress and details of the evaluation scheme are shown on the Grad Student Progress Report Form (**Appendix D**).

Possible outcomes:
If progress is deemed satisfactory by a majority of the advisory committee, plans should be made for the timing and purpose of the next committee meeting. If progress is deemed unsatisfactory by a majority of the advisory committee, the following steps should occur:

- Detailed minutes of the discussion should be documented on the progress report form and shared with the committee and the department (GSC chair and graduate program coordinator).
- Within 2 weeks, a detailed plan to address issues and adjust timelines should be agreed upon by both the committee and student. This adjustment can include a recommendation for change of scope of the project, coursework, or other measures.

As required by CGPS, the meeting report document, the student's progress report document, and the remediation plan will be referred to the CGPS Dean/Associate Dean.

Asynchronous Option: Progress reports (and the associated report form) can be completed asynchronously if both of the following are true:

- In the previous 6 months, at least one student progress meeting has been held synchronously (online or in person)
- The previous progress meeting concluded with the decision that satisfactory progress was made towards degree completion.

In this case, the student's committee will review the student's submitted progress report document and complete each section of the Progress Report Form. Committee comments and evaluations with respect to the progress evaluation table will be communicated to the supervisor via email and summarized by the supervisor. The consensus report document will be shared with the committee, student, and graduate program coordinator. Possible outcomes are the same as an in person meeting (above). However, if any committee member recommends "Unsatisfactory" in the "Overall" column, an in-person meeting should be held within 4 weeks.

Failure to make progress (ie 2 unsatisfactory progress meeting reports) may result in a recommendation that the student withdraw. Additionally, students supported by funding must maintain specific grade point averages in order to retain funding. Other awards may have other GPA requirements. Students failing to meet these requirements will have funding withdrawn and may face an assessment of unsatisfactory progress.

At the master's level, students must achieve a grade of at least 60% in individual courses to pass, while maintaining an overall average of at least 70%. If the student fails to meet these standards, the advisory committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to re-take a course or undertake other remedial work if, in the opinion of the advisory committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the advisory committee, it will recommend that the student discontinue.

THESIS RESEARCH PROPOSAL

During the first 8 months of residence, the student will select a thesis research topic and prepare a thesis research proposal. The student will be guided in this by the student's supervisor and advisory committee. The proposal should clearly establish the objectives of the research, outline the theoretical context of the research, and identify the methods to be used to meet the research objectives. The thesis research proposal is typically 15 to 20 pages (plus references) in length and its content must include:

Title page
Abstract
Introduction
Statement of research purpose, objectives, questions, and hypotheses
Review of the literature/context for the proposed research
Proposed research methods, study design, and statistical approach
Potential significance and contributions
Potential limitations
Research timeline
Draft research budget (if applicable)
Literature cited
Appendices (if applicable)

The proposal should be submitted and defended within 8 months from first registration in the program. The

thesis research proposal is submitted to the student's supervisor for review. Once the proposal is judged satisfactory by the supervisor, copies of the proposal are provided to the other members of the advisory committee. The student will present the written proposal and prepare an oral proposal defence seminar of approximately 20 minutes. The committee will determine, by consensus, if the proposal provides a satisfactory foundation for thesis research. If approved, the proposal provides a basis for the student and committee to evaluate progress towards completion, and a written commitment from the committee that, should the proposed work be completed, then the student will have sufficient research to compose and defend a thesis. Written confirmation of approval must be filed with the graduate secretary by the chair. The supervisor will ensure that a copy of the approved thesis proposal is placed in the student's file.

PERMISSION TO WRITE

Permission to write the thesis is given by the Advisory Committee when there is general agreement that the student has completed sufficient work on the project to proceed to the writing stage. While not a necessary requirement of the program, it is recommended the student receives formal approval from the committee that no additional data are needed to write the dissertation. For the student to formally receive permission to write, the committee should agree that:

□ All course work and required examinations are completed;
□ The thesis topic has been approved by the Advisory Committee;
□ The results of research findings are available and defensible (e.g. all data have been collected and sufficient aspects of analysis are complete to indicate that a defensible thesis can be achieved based on the student's completed work)

If all three boxes are checked, then the student committee shall grant permission to write.

PERMISSION TO DEFEND

The thesis must be based on original research and demonstrate judgment and scholarship on the part of the candidate. It must represent a worthwhile contribution to environment and sustainability which would warrant publication, in whole or in part, in a recognized scholarly form. The quality of the thesis is evaluated by an examining committee, consisting of the Advisory committee and an external examiner within or outside the Department of Biology, and may be from outside USASK, who is knowledgeable about the thesis topic but not involved with the student's research.

The graduate student will develop a thesis under the guidance of the supervisor. Once a full draft of the thesis is completed, and the supervisor has had an opportunity to review it and make comments, the student will present the thesis to her/his committee members for review. When the Advisory committee is satisfied that the thesis is suitable for defence, the supervisor will advise the Grad Secretary and CGPS in order that the thesis can proceed to defence.

The Advisory committee will also recommend names of potential external examiners to the Grad Secretary, who will forward this recommendation to the College of Graduate Studies and Research on behalf of the Department. Once the advisory committee has recommended that the thesis proceed to defence, the student and/or supervisor will prepare the thesis as both a word and pdf version for distribution to members of the advisory committee, the external examiner, and the Department. Standard procedures will then be followed on invitation of the external examiner, provision of a copy of the thesis, preparation of necessary documents, and scheduling of defence.

At least 4 weeks prior to the defence, the supervisor must submit the necessary forms and final thesis to the Graduate Chair, who will review and approve them, and then pass them on to CGPS. Once approved, at least four weeks must be provided for reading of the thesis and preparation for the defence. These timelines are strictly enforced by CGPS and the Department.

Thesis Format

Students may prepare a thesis in manuscript form (if approved by the advisory committee) or a traditional format. General guidelines for the dissertation format requirements are provided in CGPS Online Guide for Writing Electronic Theses, Projects, and Dissertations. The recommended length of the main body of a traditional Master's thesis is between 50 and 100 pages.

Biology recommends that the following be completed for the thesis by manuscript: a minimum of one article suitable for a peer-reviewed publication or equivalent scholarly outlet, as per disciplinary standards, and a second research chapter (this might be a second article suitable for publication, a methodological paper, etc.). Guidelines for the preparation of a manuscript-style thesis can be found in Section 12.8 of CGPS's Graduate Studies and Research policies, found at: http://www.usask.ca/CGPS/policy-and-procedure/examinations.php. The student must be the first author on all papers associated with the thesis, and a footnote explaining author roles is required.

Evaluation of the MSc manuscript style thesis is the same as that for the regular thesis option. The difference between the traditional and manuscript style thesis is in format only. Submission or acceptance of a manuscript for publication is independent of the evaluation of the thesis, which rests with the advisory committee and the external examiner.

Appointment of the Thesis Examining Committee

The examining committee for a Master's student consists of the Advisory Committee and an arm's-length examiner approved by the GSC Chair who is subject to the following criteria:

- The arm's-length examiner of an MSc thesis may be from within or outside the home department or unit(s) of both the graduate student and supervisor but should not be involved in the student's research.
- The arm's-length examiner of an MSc thesis may be a member of CGPS of the U of S. While it is acceptable to have an external examiner from outside CGPS, this requires approval by the Dean of CGPS.
- The arm's-length examiner must not have graduated from or have been a student in the academic unit within the previous six (6) years.
- The arm's-length examiner must not have collaborated with either the supervisor or the graduate student, as demonstrated by shared research grants, joint authorship of academic or professional publications or other joint scholarly activities, within the previous three (3) years.
- A former student of the supervisor may serve as the arm's-length examiner if all other criteria are satisfied, and the arm's-length examiner completed their degree under the supervisor's direction at least six (6) years previously.
- The exter arm's-length nal examiner must not have close professional or business ties with the student, the supervisor, or any member of the advisory committee.
- Where the student's thesis contains chapters or sections, which have been published or submitted for publication, the arm's-length external examiner will be asked to disqualify themselves if they have previously dealt with that material as a reviewer or editor.
- The arm's-length examiner may not be currently teaching or supervising other graduate students who are family members of either the student or the thesis supervisor.
- The arm's-length examiner must not be currently enrolled as a graduate student at the University of Saskatchewan.

Examination of the Thesis

An oral examination is limited to work done by the candidate for the thesis and to knowledge of directly related material. Outside of the examining committee, members of the University community and guests may attend the oral presentation of the thesis. These attendees may remain in the audience during questioning with permission

of the examining committee and student. At the conclusion of the examination, the examining committee asks the student to leave the room for deliberation to determine if the thesis, and its defence by the student, meet the standards for the degree. The committee may use guidelines in **Appendix E** as part of their deliberation. The examining committee members will decide by consensus or majority vote whether the thesis based on https://cgps.usask.ca/documents/pnp_m_phd.pdf

Recommendation 1: **ORAL DEFENCE ACCEPTABLE**
Thesis Acceptable with or without minor revisions; Oral defence acceptable

Recommendation 2: ORAL DEFENCE ACCEPTABLE
Underlying research adjudged to be sound, but thesis in need of recasting, addition of illustrative material or limited additional data; Oral defence acceptable

Recommendation 3: ORAL DEFENCE UNACCEPTABLE
Thesis acceptable; Oral defence unacceptable (Only available to students taking the oral exam for the first time).

Recommendation 4: ORAL EXAMINATION RE-TAKE
Thesis does not meet minimum standards, but committee believes that further research and/or revision may bring it to an acceptable standard or thesis defence is unacceptable but the Committee agrees that the Candidate has the potential, with additional preparation, to be able to successfully defend work (Only available to students taking the oral exam for the first time).

Recommendation 5: CLEAR FAIL
Thesis does not meet minimum standards and committee considers that no reasonable amount of additional research or revision is likely to bring it to an acceptable standard or oral defence of thesis is completely unacceptable and Committee agrees that the Candidate does not have potential to be able to successfully defend the work

The student is advised immediately of the examining committee's decision. The external examiner submits a report on the examination to the Dean of CGPS using Form GSR 402.

After the Defence

Following a satisfactory defence, a final thesis that incorporates all corrections or revisions needs to be approved by the supervisor and an electronic copy is to be submitted to the University's Electronic Thesis and Dissertation site https://etd.usask.ca/. Information about submitting to this site can be found here: https://cgps.usask.ca/onboarding/blueprint/thesis-dissertation-examination/submission.php. Students are also required to upload a completed and signed version of GPS 404 – Final Thesis Confirmation Form along with their thesis on the ETD site. The date of ETD upload will be considered as the date of completion of program requirements, provided documentation attesting to completion of your program, issued by the department, is not dated any later. It is the responsibility of the student to submit the thesis electronically and apply to graduate by the posted CGPS deadlines. Once you have successfully defended your thesis/dissertation, there are several forms that your supervisor, committee members, and Graduate Chair must complete, sign and submit to the Graduate Programs Advisor in CGPS. Please communicate with your supervisor and Graduate secretary to ensure that these forms have been submitted. You may also verify this information on your Degree Works record.

Note: Students in thesis and dissertation-based programs must be registered in the term during which their defence takes place and must maintain this registration until all degree requirements are complete. The dates noted on defence documents signed by your academic unit may be a factor in determining the end date of your program and whether registration in a term will be required. If you are eligible to receive pro-rated tuition rebate, a Graduate Programs Advisor will initiate this process on your behalf only once confirmation that all degree requirements have been satisfied, and the final ETD (electronic thesis/ dissertation) corrections have been approved by CGPS. Once a refund is processed, it may be credited to your student account. In order to receive all money refunded, please fill out the refund request form and provide this to Student Finance & Awards (student_accounts@usask.ca).

DOCTOR OF PHILOSOPHY (PHD)

PHD ADMISSIONS

Requirements for admission to the College of Graduate Studies are published in the University Calendar and on the College website (https://cgps.usask.ca/). Correspondence should be addressed to: The Chair, Graduate Studies Committee, Department of Biology, University of Saskatchewan, Collaborative Science Research Building, 112 Science Place, Saskatoon, SK, S7N 5E2, Canada. The GSC approves applications for admission to the Department but acceptance of an applicant is dependent upon a supervisor agreeing to supervise the student. Occasionally the supervisor and GSC may wish to interview an applicant before a final decision is made. Supervisors are responsible for providing research space for their students unless other arrangements have been made with the Assistant Head of the Department. The Department of Biology cannot assume responsibility for providing laboratory space for the students of associate faculty members or adjunct professors.

Admission to the PhD program requires a Master's degree, except where the conditions for a transfer from a Master's program have been met. Applicants who do not hold a Master's degree must first register in a Master's program. An appropriate supervisor must be available before a student will be recommended by the Admissions and Awards Committee for admission to CGPS. This is determined by the Admissions and Awards Committee through consultation with faculty whose research interests correspond to those of the student. Faculty serving as supervisors of graduate students must be faculty (or adjuncts) in Biology and be members of CGPS. Associate faculty members who are approved by CGPS can also serve as co-supervisors.

TRANSFER TO PHD PROGRAM WITHOUT COMPLETING A MASTER'S DEGREE

Exceptional students may be recommended for transfer into a PhD program without completing a research-based Master's degree. Students seeking direct entry to a PhD program must first register in a Master's program. Recommendation may be considered by request to the Advisory committee. Recommendation to transfer from a Master's program to a PhD program must be initiated through a formal meeting of the student's advisory committee that then forwards its recommendation through the Graduate Chair to the College of Graduate Studies and Research. Those who transfer into a PhD program prior to completing a Master's degree must have completed all the necessary course credit units for both the Master's and the PhD degrees, successfully defend a PhD research proposal (Proposal Exam) and demonstrate a capacity for advanced level research. Students wishing to transfer to the PhD program without completing a Master's degree must successfully **complete all requirements within 24 months** of the start of their MSc. Advisory committee membership will be reassessed should the student be transferred to a PhD program; however at minimum a Cognate member is required for the Proposal Exam.

The following CGPS requirements must be completed prior to transfer from the MSc to PhD:

> The student shows great promise both in terms of academic accomplishments and in potential for research.
>
> The student has completed at least 9 credit units at the 800-level, and has achieved a minimum average of 80% and no grade below 70%.
>
> There is evidence of good writing and oral communication ability.
>
> There is evidence the student has requisite research skills and knowledge to be able to successfully complete a PhD dissertation.

The student has successfully completed the PhD Proposal Examination prior to being recommended for transfer. This examination for the purposes of transfer can only be taken once. A student failing the Proposal Examination or any part thereof cannot be recommended for transfer.

PHD PROGRAM RESIDENCY AND MILESTONES

Residency in the program is considered fulfilled when all requirements are met. Graduate students and those involved in graduate studies are strongly encouraged to ensure that students move as expeditiously as possible through their programs of studies. PhD programs are limited to 6 years in length. This time is measured from the beginning of the first term of registration for work which is included in the program of studies (this may be course work done at the University of Saskatchewan or elsewhere, and, in general terms, includes thesis, project, or practicum work). The following timeline is based on a typical September program start date. For program start dates other than September please consult the Graduate Chair for instruction on the program requirements and timelines for completion. The following checklist itemizes benchmark tasks normally completed during the first, second, and subsequent 3rd and 4th years of the PhD program. The program is not limited to the items on this list.

Time in Program	Program Requirements	Responsible Party
Year 1	BIOL 990 BIOL 996 GSR 960 (GSR 961 and/or GSR 962 may also be required.) Other safety or hands on training	Student, in consultation with supervisor for required course completion
	Complete Student-Supervisor agreement	Supervisor with student
	Select members for graduate advisory committee.	Supervisor with student
	Select research topic and initiate thesis proposal development	Student with supervisor
	Inaugural Meeting within 4 months of the program start date to set up the Program of Studies and advise on research topic. Coursework may be recommended at the discretion of the committee	Program of Studies and Report must be filed in writing to the Graduate Programs Advisor by the advisory committee chair
	PhD Dissertation Proposal (Proposal Exam): The Proposal Exam (written and oral) is administered within 8 months of the program start date.	Student Results of the Proposal Exam must be filed in writing to the Graduate Programs Advisor by chair
	Research and data collection can commence once required ethics certificates or research licenses are secured, and with approval of the advisory committee	Student. Copies of ethics certificates or licenses must be filed with the Graduate Programs Advisor
	BIOL 990 participation requirements are met at the end of the first year of residency	Student
	Progress Reporting (every 6 months until completion; at least 1 in person meeting per year)	Student
Year 2	BIOL 990 participation requirements are met at the end of the second year of residency	Student
	Progress Reporting (every 6 months until completion; at least 1 in person meeting per year)	Student to send to Advisory Committee
	All course work identified on the Program of Studies must be completed by 24 months after the program start date.	Student
	Candidacy Examination: must be successfully completed by no later than 24 months from the program start date (36 months for MSc to PhD Transfer).	Student Results of the Candidacy Exam must be filed in writing to the Graduate Programs Advisor by Chair
Year 3 and 4 (until program completion)	BIOL 990 participation requirements (oral seminar)	Student
	Progress Reporting (every 6 months until completion; at least 1 in person meeting per year)	Student and supervisor
	Permission to Write	Supervisor and student determine when permission should be sought from Advisory committee
	Permission to Defend	Supervisor and student determine when permission should be sought. Advisory committee (by meeting or e-mail correspondence) files decision
	Thesis Submission to Dept and CGPS to schedule defence (6 weeks prior to defence)	Student and Supervisor, Graduate Secretary to arrange defence.
	Final electronic copies of Approved Dissertation submitted to CGPS	Student

PHD ADVISORY COMMITTEE STRUCTURE

The supervisor, in consultation with the student, invites others to serve on the Advisory committee. The Advisory committee has the primary responsibility for directing and evaluating the student. The Advisory committee recommends a Program of Studies for the graduate student and may recommend revisions to that program. The role of the Advisory committee is to assist the student in completing program requirements. Members are brought together for their substantive expertise in the student's broad research area.

PhD committees are composed of a minimum of 4 members*:

- 1 research supervisor (or 2 co-supervisors with at least 1 from the Dept of Biology),
- 2 regular committee members (or 1 if there are co-supervisors; at least 1 is from the Dept of Biology (Faculty, Adjunct, or Associate),
- 1 Cognate member from outside of the Department. The cognate member MUST be a member of the USask graduate faculty; this member cannot be an off-campus person.
- *At least 2 of the committee members should be from Biology (Faculty, Adjunct, or Associate) including the student's supervisor.

The GSC chair or delegate is an ex-officio member of every Advisory committee and may attend any meeting upon request by the student or committee.

The GSC Chair is required for the following meetings:

- Inaugural meeting to set up the Program of Study
- Examinations: Proposal Exam (PhD), Candidacy Exam (PhD), Thesis Defence (PhD)
- Following an unsatisfactory progress meeting

PROGRAM OF STUDY

A Program of Study is required for all students entering the PhD program. This should be completed during the inaugural meeting held in the first 4 months of study to allow recommendations for course work to be followed up. This consists of setting a timeline for a Proposal Exam and completion of coursework.

COURSE WORK

Courses may be required to complete the student's general training and develop an area of specialization sufficient to permit the student to undertake research which will contribute to the discipline. The selection of course work in line with the dissertation research are directed by the advisory committee when setting up a 'Program of Studies' during the Inaugural meeting. A total of 9 credit hours of coursework is required for all PhD programs and students must maintain at least 70% average in their coursework to be minimally acceptable in their program. In the case of PhD students, where the student has a record of 9cus of coursework and a completed MSc thesis, a course waiver/transfer can be applied for through the CGPS.

The student is required to register in:

- BIOL 990 (no credit units- fall/winter term) and
- BIOL 996 (no credit units- all terms).
- 9 credit units of electives (unless waived by CGPS)
- GSR 960
- GPS 961 or 962 (if applicable)

The requirements for BIOL 990 are met by attending and participating in Graduate Student Symposium and by presenting the research proposal and the results of the dissertation research in a seminar. Completion of the

research requirement (BIOL 996) is met when the dissertation is successfully defended, and the final dissertation has been submitted to CGPS.

Elective courses will be in the student's area of specialization and are selected in consultation with the advisory committee. Credit may be granted for graduate-level courses taken previously at this or another university. Please refer to the University Course Catalogue for a listing of courses that are available in any academic unit on campus or as part of the Western Dean's Agreement at other recognized institutions, if approved by the Advisory committee.

All graduate students at the University of Saskatchewan are required to complete GSR 960: Research Ethics, and may be required to take either GPS 961: Ethics and Integrity in Human Research or GPS 962: Ethics and Integrity in Animal Research, depending on the nature of their project, thesis, or dissertation work. These courses must be completed within the first 12 months of registration in the program and prior to the acceptance of the research proposal.

SEMINAR (BIOL 990)

The Biology Seminar (BIOL 990) is a requirement for all PhD students. To receive credit for this course, PhD students must attend and contribute to the seminar for the first three years of their program. Presentations will provide the student with the experience of a formal seminar setting and the opportunity to share research and scholarly activity with other students and faculty.

A student in the PhD program is required to present one poster (year 1) and two seminars (year 2 and 3) during the annual Biology student symposium held in the spring. Before a PhD students defence date they are also required to give a full-length seminar presentation during the BIOL 990 seminar series. Ideally, the poster will focus on the research proposal or work conducted to date and the year 2 seminar should cover all aspects of the research conducted to date in a 15–20 minute oral presentation.

Constructive feedback will be gathered by the 990 Coordinator or designate and then shared with the presenter. If a student gives an unsatisfactory seminar or does not consistently attend symposium, the 990 Coordinator will notify the advisory committee that will decide on an appropriate action (for example, another seminar may be required). The Coordinator must inform the graduate support staff once a student has met the BIOL 990 presentation requirements.

PROGRESS MEETINGS

Every 6 months a student is expected to demonstrate progress towards completing program requirements. The purpose of a progress report meeting is to inform the advisory committee on the student's progress towards thesis completion. This progress can take the form of

- completed coursework,
- research preparation, including learning or developing research methods and experimental design,
- literature searches and reviews,
- experiments or data collection,
- data analysis and visualization,
- significant writing milestones,
- research dissemination,
- other progress, as agreed upon by the committee

This is the student's opportunity to share progress in these areas, to address impediments to their progress, and seek feedback from their committee. The goal of each meeting is to update the committee on research work undertaken, seek constructive feedback on progress, advice towards research decision-making, assess quality of data and writing, or to address other problems, and to ensure that all the student's needs are being adequately met.

Pre-Meeting Requirements: At least 1-2 weeks before the scheduled meeting, the student will share a completed progress report document (see template **Appendix B**), with any relevant appendices (e.g. papers, abstracts, details of workshops, figures, etc).

In Person Option Duration: At minimum, 60 minutes should be reserved for an in person progress meeting. If possible, 90 minutes should be reserved if the committee agrees and is available.

Meeting: At the meeting, the student will give a 10-15 minute presentation highlighting their progress and any issues that need to be addressed during the meeting. After the presentation, all items related to the student's progress can be discussed, and then the student should be excused for a brief *in camera* discussion. Decisions on satisfactory progress need to be made on each major progress item (research skills and accomplishments, requisite knowledge and professional conduct) as well as the overall progress of the student that is commensurate with time in program and their experience. Upon deliberation, the student should be invited back, and the decisions of the committee should be explained to the student and detailed on the report form along with recommendations.
Note: typically the GSC chair or designate does not participate in progress report meetings unless the conclusion of the previous progress report meeting resulted in a decision of unsatisfactory overall progress.

Evaluation of progress: Satisfactory progress towards degree completion is subjective, but should be carefully considered in light of all possible metrics of progress, with particular consideration of the student's previous work, their experience and time in program, and the original and any updated approved timelines. Importantly, lack of new data does not necessarily indicate lack of progress if considerable effort has been spent on developing, refining, or troubleshooting protocols. Committee members may consult **Appendix C** for guidelines on assessing satisfactory progress and details of the evaluation scheme are shown on the Grad Student Progress Report Form (**Appendix D**).

Possible outcomes:
If progress is deemed **satisfactory** by a majority of the advisory committee, plans should be made for the timing and purpose of the next committee meeting.

If progress is deemed **unsatisfactory** by a majority of the advisory committee, the following steps should occur:

- Detailed minutes of the discussion should be documented on the progress report form and shared with the committee and the department (GSC chair and graduate program coordinator).
- Within 2 weeks, a detailed plan to address issues and adjust timelines should be agreed upon by both the committee and student. This adjustment can include a recommendation for change of scope of the project, coursework, or other measures.
- As required by CGPS, the meeting report document, the student's progress report document, and the remediation plan will be referred to the CGPS Dean/Associate Dean.

Asynchronous Option: Progress reports (and the associated report form) can be completed asynchronously if both of the following are true:

- In the previous 6 months, at least one student progress meeting has been held synchronously (online or in person)
- The previous progress meeting concluded with the decision that satisfactory progress was made

towards degree completion.

In this case, the student's committee will review the student's submitted progress report document and complete each section of the Progress Report Form. Committee comments and evaluations with respect to the progress evaluation table will be communicated to the supervisor via email and summarized by the supervisor. The consensus report document will be shared with the committee, student, and graduate program coordinator. Possible outcomes are the same as an in person meeting (above). However, if any committee member recommends "Unsatisfactory" in the "Overall" column, an in-person meeting should be held within 4 weeks.

Failure to make progress (ie 2 unsatisfactory progress reports) may result in a recommendation that the student withdraw. Additionally, students supported by funding must maintain specific grade point averages in order to retain funding. Other awards may have other GPA requirements. Students failing to meet these requirements can have funding withdrawn and may face an assessment of unsatisfactory progress.

At the PhD level, students must achieve a grade of at least 70% in individual courses required for the degree, while maintaining an overall average of at least 70%. If the student fails to meet these standards, the advisory committee will assess the student's performance and determine an appropriate course of action. The student may be permitted to re-take a course or undertake other remedial work if, in the opinion of the advisory committee, the overall performance of the student was otherwise satisfactory. If this is not the assessment of the advisory committee, it will recommend that the student discontinue.

PROPOSAL EXAM

The proposal exam will involve completion of a detailed written PhD research proposal and an oral presentation to defend the written research plan. **The purpose of the Proposal Examination is to satisfy the committee that the student has the potential to obtain sufficient knowledge of the chosen general field of study to proceed toward candidacy for the PhD degree.**

Timing:
A detailed PhD research proposal should be **completed and defended** within **8 months** of the program start date as identified on the student's Program of Study. If the proposal is not defended within 12 months of the program start date, progress may be deemed unsatisfactory by the advisory committee at a subsequent student progress meeting. In the case of a transfer from the MSc, this proposal should be significantly expanded in depth and scope over the approved MSc proposal and must be successfully completed within 24 months of the student program. The defence of the proposal will serve as the PhD proposal exam to test the student's capabilities to successfully complete a PhD program. The exam format is designed to allow the student to keep focus on research activities.

Format of the Proposal Exam
A total of three hours (150 minutes for question period and 30 minutes for deliberation) should be reserved for the examination. The exam is not a public examination. Students must select a dissertation research topic and prepare a dissertation proposal. The student will be guided in this effort by his/her supervisor and advisory committee. The proposal should clearly establish the objectives of the research, outline the theoretical context of the research, and identify the methods to be used to meet the research objectives. The PhD research proposal is first submitted to the student's supervisor for review. Once the proposal is judged to be satisfactory by the supervisor, copies are provided to the other members of the advisory committee. The PhD research proposal should be submitted to the advisory committee for review by no later than 2 weeks prior to the thesis proposal oral presentation/ examination.

Format: The Proposal exam has two parts: a written proposal and an oral defence

The **written component** of the Proposal Exam will vary depending on the nature of the research and the requirements of the advisory committee but normally it will follow these guidelines:

1. Length is not prescriptive but is often 20-30 pages plus figures, tables, references.
2. Students may (and are encouraged to) use figures and/or tables in the research proposal to clarify experimental procedures or design [note: these figures and tables are not counted as part of the text page limits; also, they may be added as appendices to the proposal]
3. Proposed PhD research project should include the objectives/hypotheses, methodology, experimental design, data analyses, timeline for completion, significance of the work and how will this research make a new or novel contribution to the field [note: this section should the major component of the proposal]
4. For those transferring from MSc to PhD, within the proposal it should be clear how the proposed research differs from the MSc research plan
5. The research proposal will normally be formatted to include:
    - Title page
    - Abstract
    - Introduction -Review of the literature/context for the proposed research
    - Statement of research purpose, objectives, questions, and/or hypotheses
    - Proposed research methods/study design/analytical and statistical approach
    - Significance/contributions to the field
    - Potential limitations
    - Progress to date as it pertains to the PhD proposal (if applicable)
    - Research timeline
    - Draft research budget (if applicable)
    - Literature cited
    - Appendices (if applicable)

The **oral component** of the Proposal Exam will involve the student providing an oral presentation of 20-25 minutes in length. The student should present research completed to date as it pertains to the PhD research proposal and a presentation of the research the student wishes to undertake as outlined in the written proposal.

Immediately following the presentation, the committee will question the student on the research completed to date and the research proposal. Questions should address the student's background knowledge of their general field of study, the proposal design and their understanding of the limitations. The advisory committee will use the questions found in **Appendix E** to assess if the student possesses the required background knowledge and ability to continue in the PhD program. The question portion of the oral defence typically follows a format whereby the chair will direct each individual member to ask questions for approximately 15 min each in turn, starting with the cognate and proceeding to the supervisor, with up to two rounds of questions.

Assessment of the Proposal Exam

The committee will assess both the written and oral parts of the exam combined. At the end of the oral defence, the Chair will excuse the student and the Advisory committee will decide if the student has passed or failed the proposal exam. The committee will assess the content of the written and oral exam on the basis of guidance criteria found in **Appendix E**:

1. Communication skills
2. Clear rationale for the research
3. Theoretical/Conceptual or analytical framework
4. Research skills and appropriate methodology
5. Significance of the research

6. Overall Knowledge

The Advisory Committee will determine by consensus or majority vote (if consensus cannot be reached) whether the written and oral components of the exam are:

- **Passed,** or
- **Failed with recommendation for re-examination** of the oral and/or written components as identified by the committee, or
- **Failed with recommendation to discontinue** from the PhD program.

After the decision has been made, the student will be invited back into the room and informed of the committee's decision. Any required revisions should be completed within 6 weeks and do not require a second oral defence. Conditions that require coursework must be done within the timeline set by the committee at the time of the exam.

If a student fails the exam, the committee should either recommend remediation and a timeline for re-examination (written and/or oral) the Proposal Exam (in consultation with the Graduate Chair) or recommend that the student discontinue their PhD and withdraw from the program (or to transfer to the MSc program). A second failure automatically disqualifies the student from further work for that particular PhD Regardless of the recommendation, the student may apply to the Dean of CGPS for permission to repeat the proposal exam.

CANDIDACY EXAM

The purpose of the Candidacy Examination is to ensure that the student demonstrates a mature and substantive grasp of their field as a whole. The examination involves conducting an original comprehensive literature review and/or an original research proposal, and should be completed independently. The examination allows the student's graduate advisory committee to evaluate the student's potential and capacity for advanced research by testing the student's foundational knowledge in the field(s) of study in which the research is situated, and the student's ability to reconcile work across fields. NOTE: Students are encouraged to seek peer support but cannot obtain assistance from any advisory committee or faculty member. Any outside assistance should be included in a written acknowledgement. A student passing the Candidacy examination is deemed a PhD candidate.

Timing: For students entering with a MSc, the Candidacy Exam should be **completed** within **24 months** of the program start date as identified on the student's Program of Study and after all coursework is completed. Students that entered the MSc program must complete their Candidacy Exam within **36 months**. If a candidacy exam is not scheduled before 24 months (or 36 months for MSc to PhD transfer) of program start date, the case must be reviewed and a timeline for completion must be approved by the Graduate Chair. Any additional requirements set as a result of the Proposal Exam, including additional course work, must be met before the Candidacy Exam can be administered.

Scope: The purpose of the Candidacy Examination is to assess the candidate's ability to comprehend the literature, critically evaluate and synthesize research, and convey scientific ideas in an area different from, though possibly related to their thesis research. The scope of the Candidacy Examination is to be broader than the specific topic of the student's dissertation. The topics covered during the Candidacy Examination may be related to those covered in the thesis proposal; however, they must be a significant extension or broadening of the proposal, such that the committee is satisfied that the topics allow for assessment of:

- the student's *independent* understanding of the literature in their field(s) of study and the areas in which the thesis topic is structured (e.g., theories, methods, past and current debates, anticipated future trajectories),
- the student's ability to demonstrate scholarly breadth and contextual understanding in their field and discipline.

The Candidacy Exam is not designed to query the specifics of the student's proposed PhD or current research and should not be used to do so.

Exam Format: This exam plays a dual role in instruction and assessment: it informs the committee about the student's capacity for, and progress towards, research independence, and functions as a gateway for continuing scholarly activity towards the PhD degree. The Candidacy Exam has two components: a written exam and an oral exam

Format of the Written Candidacy Examination

The Department of Biology offers a choice of two format options for the Candidacy Examination:

1. A 'mock' grant proposal, or
2. A literature review

The choice of format will be mutually agreed upon with the student and their Advisory Committee and the student needs to prepare a 1-2 page **Notice of Intent (NOI)** in the case of the grant proposal, **or a written outline proposal** in the case of a literature review that is approved by the Advisory Committee. Given that this is an exam, the Advisory Committee will have the final say about the grant proposal topic or whether the student will be required to complete a literature review or a grant proposal based on the perceived need of the student.

After gaining permission of the Advisory Committee to prepare their written document (see specific guidelines on format below and in **Appendix F**), the candidate will normally have **three months** to complete and submit the written exam. It is important to note that this three month window means that the format and scope of the Candidacy Exam should be approved no later than 33 months after the student's program start date. Examples of quality written exams can be made available through the department archive. Information on the CGPS guidance for Candidacy Examinations can be found in https://cgps.usask.ca/policy-and-procedure/Academics/examinations.php.

1. Grant proposal option

The subject area for this exercise must not duplicate candidate's research project although it might extend some aspects of their research beyond that completed for PhD. The Advisory Committee, in consultation with the candidate, will determine the area of focus for the grant proposal.

The format of the proposal is limited to 10 single spaced pages (see guidelines in **Appendix F**). The proposal should contain a substantive literature review (approx. 4 pages) providing the scientific justification for the main hypotheses and objectives of the proposal. This background material will form the basis of many of the questions used to assess the student's understanding of the discipline as a whole. After the background material, the proposal should outline and justify clearly defined objectives with accompanying hypotheses and include a well-defined study design to test these hypotheses and address the objectives. There should be a clear indication of how data will be collected and analyzed. The studies need not be limited in scope or budget (in other words, it can be assumed that there is access to the equipment or material that will enable the best experiments to test hypotheses), though these studies must be feasible by a single research lab in a 3 to 5 year timeframe. Note that because of this, neither a budget nor a personnel plan is needed. Anticipation of negative results and formulation of alternative hypotheses is recommended to demonstrate a complete understanding of the possible outcomes of the proposed research.

The choice to use an alternative format (e.g. an NSERC Discovery/Alliance Grant, NSF) can be made at the discretion of the advisory committee and should be approved by the GSC chair.

2. Literature review option

The subject area for the review article must be different from, though possibly related to the area of the candidate's thesis research and will be agreed upon in consultation with the advisory Committee.
In order to ensure there is approval in principle of the topic and the scope of the review, candidates must justify the topic and journal selected so that a clear set of article formatting guidelines can be followed, and prepare and then discuss with their Advisory Committee a 1-2 page outline of their review before proceeding. The format of the review must follow the Instructions to Authors established by the selected journal. The review will be a thoroughly researched and referenced article of 10 page limit, not including references (see **Appendix F** for guidelines).

Format of the Oral Candidacy Examination

A representative from the GSC will serve as non-voting chair and moderator of the oral examination. The written material is to be submitted to the Advisory Committee *at least two weeks* prior to the date of the oral examination.

The exam is not a public examination. A total of three hours (150 minutes for question period and 30 minutes for deliberation) should be reserved for the examination. Prior to the oral exam and in the absence of the candidate, the Advisory Committee may choose to meet and discuss the written exam and oral exam format and identify potential strengths and weaknesses and agree on the lines of questions or strategy for examination.

The Advisory Committee will proceed with one of two formats generally used for the question portion of the oral defence of the document and presentation. Most commonly, the chair will direct each individual member to ask questions for approximately 15 min each in turn, starting with the cognate and proceeding to the supervisor, with two rounds of questions. A second option is a more open format, where committee members may ask questions in any order. In the second option, care must be taken to ensure the process is not overlong and that all committee members are able to assess the student.

During the oral exam the student is expected to be able to discuss key areas or fields of research that are related to his/her own field(s) of study, by answering questions posed by the examination committee based on, or supplementing, the written part of the exam. The committee should examine the student's understanding of the theoretical, conceptual and/or analytical frameworks underpinning the submitted document.

Assessment of the Candidacy Examination

The candidate is not required to be able to generate a fully fundable proposal or publishable review in order to pass the Candidacy Examination. However, it is expected that much of the work submitted will be at a level commensurate with an independent researcher.

At the end of the question period, the student will leave the room to allow the Advisory Committee to deliberate in camera. The candidate will be judged on the quality and clarity of thought and writing in their submission, and whether they have fulfilled the basic criteria by which either a grant application, or review, as appropriate, is peer-evaluated. The written and oral components must satisfy committee members of the student's ability to:

1. understand the range of disciplinary and/or interdisciplinary aspects, as well as theories, concepts and/or analytical framework as they relate to his/her research area
2. demonstrate a breadth of knowledge and understanding of appropriate methodologies and approaches in the student's research area
3. demonstrate competence, at the PhD level, in written and oral communication

The Advisory Committee will determine by consensus or majority vote (if consensus cannot be reached) whether the written and oral components of the exam are:

- **Passed,** or
- **Failed with recommendation for re- examination** of the oral and/or written components as identified by the committee, or
- **Failed with recommendation to discontinue** from the PhD program.

Notice of the result of the exam result (Pass/Fail with explanation) will be recorded on the Graduate Student Report form and sent to the Dean of CGPS. A student failing a Candidacy Examination may be permitted a second examination with advisory committee recommendation and approval of the Dean of CGPS. A second examination will normally take place within 2–3 months of the first examination. A second failure automatically disqualifies the student from further work for that particular PhD degree. The student may appeal on substantive or procedural grounds using the procedure described in paragraph 6.3 of the CGPS Policy and Procedure Manual available at https://cgps.usask.ca/policy-and-procedure/Academics/examinations.php. Another option for consideration after a failed examination is that the student transfer to a MSc program. It is the responsibility of the chair of the graduate advisory committee to inform the graduate secretary, the Graduate Chair, and CGPS of the outcome of the Candidacy Examination as soon as possible after the exam. The chair of the graduate advisory committee must submit to the graduate secretary a copy of the student's written exams and a memo that provides minutes of the examination and an overview of advisory committee comments. The decision of the graduate advisory committee must be communicated to the student immediately following the oral exam.

Permission to Write the Dissertation

Once the student has completed the data collection and analysis components of the dissertation research, an advisory committee meeting will be held to evaluate the quality of that work and to assess whether it is adequate to permit writing of the dissertation. The supervisor will determine when permission to write the dissertation should be requested from the advisory committee. In preparation for the permission to write meeting, the student will prepare a document that briefly outlines the research purpose and objectives, provides an overview of the research methods, and highlights the research findings and key observations. The document should also include a tentative dissertation table of contents.

This document must be submitted to the advisory committee at least 2 weeks prior to the scheduled meeting date. The advisory committee meeting should be scheduled by no later than 3 weeks after receiving the document. At the time of the Permission to Write Meeting, the student will present to the advisory committee an overview of the dissertation results and a timeline for completion of the dissertation. The key criterion for consideration by the advisory committee is whether the student has obtained sufficient data and whether sufficient, preliminary analysis of those data has been completed to proceed with writing the dissertation. Permission to write must be indicated in writing and placed in the student's file by the committee chair.

PhD Dissertation

The PhD dissertation must be based on original research and demonstrate judgment and scholarship on the part of the candidate. It must represent a worthwhile contribution to their discipline which would warrant publication, in whole or in part, in a recognized scholarly form. The quality of the dissertation is evaluated by an Examining committee, consisting of the Advisory committee and an external examiner from another university who is knowledgeable about the dissertation topic.

Students may prepare a dissertation by manuscript or a dissertation by traditional format. General guidelines for the dissertation preparation and formatting requirements are provided in CGPS Online Guide for Writing Electronic Theses, Projects, and Dissertations. Biology typically requires a minimum of three chapters that would

be suitable for peer-reviewed publications, or equivalent scholarly outputs (e.g., book chapters) as per disciplinary standards. Articles may be submitted at the time of defence. The Dissertation in manuscript form is evaluated based on the same standards as the traditional thesis. The papers/chapters must be approved by the supervisor and advisory committee, the same as for a traditional dissertation document. It is assumed the student will be the first author on all papers associated with the dissertation and co-authorship order needs to be approved by the supervisor and any named authors prior to journal publication. A footnote or preface for each published chapter explaining authorship roles for published manuscripts is also required.

Further information about thesis preparation is available at the website of CGPS at https://cgps.usask.ca/onboarding/index.php

Permission to Defend

Following the guidelines of CGPS, the supervisor will review the completed dissertation. When both the student and the supervisor believe it is ready, the dissertation will be submitted to the advisory committee for review. The advisory committee should provide comments or feedback to the student within 3 weeks and recommend any revisions in substance or format before granting Permission to Defend. Once the advisory committee has approved the dissertation manuscript, the student will prepare final copies of the dissertation for submission to the examining committee.

Prior to defending the dissertation, the student must obtain Permission to Defend from all committee members in writing. The committee may require further revisions. Once the committee is satisfied that the dissertation is ready, it will grant its permission to defend. This decision must be recorded and submitted to the Graduate Secretary, who will then advise CGPS. Following approval of the advisory committee for examination, an examining committee will be struck. The student will present and defend the research in an open forum not less than 6 weeks after the documents are submitted to CGPS.

On approval of the dissertation manuscript, the advisory committee will make recommendations to the Graduate Chair on the appointment of an external examiner and the scheduling of the defence. The Graduate Chair will recommend to CGPS on behalf of the Department that the dissertation examination be scheduled. At least 7 weeks prior to the defence, the supervisor must submit the necessary documents (final copy of thesis, CV for first choice of external, names of 2–3 alternate externals) to the Graduate Chair and the Graduate Programs Advisor, who will pass them on to CGPS, indicating the date, time, and proposed name of external examiner. Faculty must allow 2–3 working days for the forms to clear the Department grad secretary. CGPS requires the thesis at least 6 weeks prior to proposed defence date, and the Graduate Programs Advisor needs time prior to that to compile the pieces to go to CGPS. For more detail, please consult the CGPS requirements. The forms are reviewed at CGPS and approved within 2 weeks—this includes a review of the dissertation by the Associate Dean, CGPS. In the interim, neither the student nor any member of the advisory committee can provide the external examiner with a copy of the dissertation. Once approved, at least 4 weeks must be provided for reading of the dissertation and preparation for the defence. These timelines are strictly enforced.

Dissertation Examining Committee

The dissertation examining committee for a PhD student consists of the advisory committee, a University Examiner and an External Examiner appointed by the Dean of CGPS. The University Examiner may be any member of the University of Saskatchewan Graduate Faculty (Department of Biology included) who has not been directly involved in the PhD student's dissertation research, whether as a collaborator, former supervisor or committee member. Typically the University Examiner will have experience and expertise in the dissertation subject, broadly interpreted.

The External Examiner is typically a member of faculty at another university and must be a recognized authority on the dissertation subject. The advisory committee will provide names of recommended external examiners, with curricula vitae and justification for their selection, to the Graduate Chair and the Graduate Programs Advisor, who will forward to the Dean of CGPS the names, addresses, and telephone numbers of the three preferred individuals, in order of priority, who are qualified to act as the external examiner. The College of Graduate and Post-doctoral Studies has strict guidelines to avoid conflict of interest or collaboration; please consult the ***CGPS Policies and Procedures Manual***, section 8.2.

The student cannot have previously discussed their research with the external examiner nor had any personal relationship with the examiner.

EXAMINATION OF THE DISSERTATION

An oral examination is limited to work done by the candidate for the thesis and to knowledge of directly related material. It is usually 2–3 hours in length and limited to work done by the candidate for the dissertation and to knowledge of directly related material. At the conclusion of the examination, the dissertation examining committee meets to determine if the dissertation, and its defence by the student, meet the requirements for the degree. The examination of the dissertation is a public, oral examination conducted by the dissertation examining committee. Public attendees may remain in the audience during questioning with permission of the examining committee and student. At the conclusion of the examination, the examining committee asks the students and guests to leave the room for deliberation to determine if the thesis, and its defence by the student, meet the standards for the degree. The committee may use guidelines in **Appendix E** as part of their deliberation. The examining committee members will decide by consensus or majority vote whether the thesis based on https://cgps.usask.ca/documents/pnp_m_phd.pdf

Recommendation 1: **ORAL DEFENCE ACCEPTABLE**
Thesis Acceptable with or without minor revisions; Oral defence acceptable

Recommendation 2: ORAL DEFENCE ACCEPTABLE
Underlying research adjudged to be sound, but thesis in need of recasting, addition of illustrative material or limited additional data; Oral defence acceptable

Recommendation 3: ORAL DEFENCE UNACCEPTABLE
Thesis acceptable; Oral defence unacceptable (Only available to students taking the oral exam for the first time).

Recommendation 4: ORAL EXAMINATION RE-TAKE
Thesis does not meet minimum standards, but committee believes that further research and/or revision may bring it to an acceptable standard or thesis defence is unacceptable but the Committee agrees that the Candidate has the potential, with additional preparation, to be able to successfully defend work (Only available to students taking the oral exam for the first time).

Recommendation 5: CLEAR FAIL
Thesis does not meet minimum standards and committee considers that no reasonable amount of additional research or revision is likely to bring it to an acceptable standard or oral defence of thesis is completely unacceptable and Committee agrees that the Candidate does not have potential to be able to successfully defend the work

The student is advised immediately of the examining committee's decision. The external examiner submits a report on the examination to the Dean of CGPS using Form GSR 402.

AFTER THE DEFENCE

Following a satisfactory defence, a final thesis that incorporates all corrections or revisions needs to be approved by the supervisor and an electronic copy is to be submitted to the University's Electronic Thesis and Dissertation

site https://etd.usask.ca/. Information about submitting to this site can be found here: https://cgps.usask.ca/onboarding/grad-toolkit/roadmaps/project-roadmap/submitting.php. Students are also required to upload a completed and signed version of GPS 404 – Final Thesis Confirmation Form along with their thesis on the ETD site. The date of ETD upload will be considered as the date of completion of program requirements, provided documentation attesting to completion of your program, issued by the department, is not dated any later. It is the responsibility of the student to submit the thesis electronically and apply to graduate by the posted CGPS deadlines. Once you have successfully defended your thesis/dissertation, there are several forms that your supervisor, committee members, and Graduate Chair must complete, sign and submit to the Graduate Programs Advisor in CGPS. Please communicate with your supervisor and Graduate secretary to ensure that these forms have been submitted. You may also verify this information on your Degree Works record.

Note: Students in thesis and dissertation-based programs must be registered in the term during which their defence takes place and must maintain this registration until all degree requirements are complete. The dates noted on defence documents signed by your academic unit may be a factor in determining the end date of your program and whether registration in a term will be required. If you are eligible to receive pro-rated tuition rebate, a Graduate Programs Advisor will initiate this process on your behalf only once confirmation that all degree requirements have been satisfied, and the final ETD (electronic thesis/ dissertation) corrections have been approved by CGPS. Once a refund is processed, it may be credited to your student account. In order to receive all money refunded, please fill out the refund request form and provide this to Student Finance & Awards (student_accounts@usask.ca).

Roles and Responsibilities

Students should be in regular contact with their supervisors. In person advisory committee meetings are held at least once per year, and progress updates are required every 6 months as required to evaluate and assist the student in the program of study. See **Appendix A** for the graduate student-supervisor agreement which articulates the roles and responsibilities of supervisors and graduate students. See **Appendix C** on guidance for students making satisfactory progress.

For the thesis-based programs, the roles of the supervisor, the student, the advisory committee and Chair are as follows:

Role of the Supervisor

The supervisor is a mentor, advisor, and senior colleague, and provides an atmosphere of respect for the student. As the senior partner, the advisor must encourage commitment on the part of the student. The supervisor is responsible for calling meetings of the advisory committee. However, a graduate student is entitled to initiate and request additional advisory committee meetings as needed. The supervisor's responsibilities toward the student are to:

- guide the choice of the advisory committee, program of studies, thesis topic, timeline to completion, and milestones,
- be accessible for and help establish regular meetings with the student,
- provide expectations, criteria, and evaluation for written work, including the dissertation, in a timely fashion,
- explore, inform about, and provide funding opportunities,
- inform of policies, regulations, expectations and standards of the Department, CGPS, and the University with respect to course work, research, scholarship, intellectual property, academic integrity, safety, ethics,

thesis, collaborative work, authorship, acknowledgements, conference presentations, and professionalism,
- convene the advisory committee at least once yearly,
- provide the student with the opportunity to present research at a conference,
- ensure the eligibility of the thesis for examination, to provide the names of potential suitable external examiners, and to prepare the student for defence,
- provide letters of recommendation on request, in a timely fashion, and
- arrange for suitable supervision during absences*.

*When supervisors are away from the University for an extended period (i.e., sabbatical leave), they are expected to arrange for another member of the advisory committee to act in their absence, and to advise the Admissions and Awards Committee and Executive Director in writing of this arrangement. Students can expect their supervisors to ensure that adequate provision has been made for continued supervision during their own absence or leave of any kind. All such arrangements will be communicated to the Dean of CGPS with a copy to the student. The Graduate Chair will advise the Dean if these arrangements are not considered satisfactory by the Department. Faculty members should recognize that it is imperative to make an appropriate reduction in supervisory and advisory responsibilities prior to and during sabbatical and similar types of leave.

ROLE OF THE STUDENT

The Master's or PhD student is a junior partner and colleague in a relationship of mutual respect with the supervisor and advisory committee. The student makes a commitment to the program and is dedicated to the completion of the program within an acceptable timeframe and in accordance with the policies and regulations of the Department and the University. The student is entitled to mentorship, advising, guidance and monitoring and yearly evaluation of progress by the advisory committee. The student has the following responsibilities:

- be accessible for and maintain regular and frequent communication with the supervisor and advisory committee
- be aware of the many other commitments the supervisor will have and schedule meetings and document review in a responsible manner that respects these commitments. The student and the supervisor should schedule regular meetings.
- know and adhere to policies, regulations, expectations and standards of the Department, CGPS, and the University with respect to course work, research, scholarship, intellectual property, academic integrity, safety, ethics, thesis work, collaborative work, authorship, acknowledgements, conference presentations, professionalism, and obligations tied to funding.
- be aware of and to meet deadlines for registration, course work, research, applications, reporting, defence, and convocation preparations.
- strive for excellence in and to take full responsibility for course work and research.
- establish and adhere to a timeline and milestones for completion.
- record research systematically, completely, and honestly.
- report on progress and to prepare a yearly report for the advisory committee.
- submit work for evaluation, allowing reasonable time for review, and consider advice from the supervisor and the advisory committee.
- make thoughtful, considerate, frugal and responsible use of resources.
- maintain, keep clean, and return to order the workplace.
- advise the supervisor of absences due to vacation, illness, or other reasons.[3]

[3] "Role of the Faculty Advisor" and "Role of the Student" adapted from University of Saskatchewan. CGPS 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research"

ROLE OF THE ADVISORY COMMITTEE

The advisory committee provides the student with mentorship, guidance, advice, evaluation, and feedback in an atmosphere of mutual respect. The advisory committee should be chosen early in the program by the student and the supervisor, in consultation, to reflect diverse expertise in the chosen field of research. The advisory committee has the following responsibilities toward the student:

- Establish a program of studies including coursework selection in consultation with the student, at the beginning of the program, with clear course requirements, expectations, and a projected timeline with milestones,
- Remain familiar with the research project and the student's progress,
- Meet with the student at least once yearly to review the student's progress, and then to report to CGPS,
- Be prepared to recommend withdrawal or alternatives if progress is unsatisfactory,
- Be available for consultation with the student on academic or research-related matters, as well as other matters which may arise, including but not limited to, supervision, intellectual property, ethics, authorship, best practices, academic integrity, acknowledgement, medical or compassionate situations, conflict, disputes, harassment, and discrimination,
- Provide feedback on the suitability of material for publication, and to suggest relevant journals for submissions,
- Determine what member of the advisory committee will review the thesis to ensure compliance with formatting requirements of CGPS,
- Examine the thesis/dissertation for defence in a timely manner,
- Provide opportunities for the student to present the research at a conference, and
- Be willing to provide letters of reference upon request.[4]

ROLE OF THE CHAIR

The role of the appointed GSC Chair of the advisory committee is to maintain the standards, fairness, and integrity of the process for both the student and faculty. The chair or designate is required to attend all meetings where a formal decision is made (program of study, examinations, meetings following unsatisfactory progress). The chair of the advisory committee may serve as a full voting member, if desired by the committee. This arrangement will be determined by the committee at the Program of Studies meeting. The chair completes the minutes of each meeting, records votes, and files the reports with the graduate secretary. It is a collective responsibility of all faculty members with standard or adjunct appointments in the Department to participate in chairing committees.

Note that the chair of the advisory committee cannot pass judgment on matters that are not normally addressed by the committee, such as academic dishonesty. Matters that cannot be addressed by the committee must be referred to the Department Head and the Dean of CGPS for resolution. The chair should provide all the relevant information in such a situation.

For PhD committees, the Chair of the advisory committee will typically chair the final dissertation defence. The Chair of the advisory committee is entitled, although not required, to ask questions. If the committee is able to come to a consensus about the quality of the dissertation, the chair need only record the consensus decision. If consensus cannot be reached among the committee and a vote must be taken, the chair must record the outcome of the vote. If the vote is tied, or where the committee and the external examiner do not agree on the vote, the chair must vote. In this case, abstention by any member of the examining committee, including the chair, will be interpreted as a negative vote. The student must be informed of the decision immediately after the examination. Should further work by the candidate be required, the chair of the examining committee must

[4] "Role of the Advisory Committee." adapted from University of Saskatchewan. CGPS 1995. "Guidelines for Various Parties in Graduate Student Project and Thesis Research"

see that the committee states clearly, for the candidate and CGPS, what work is to be done and whether or not the examining committee shall meet again before the dissertation can be accepted.

Student Supervisor Conflicts and Expectations

It is important to develop a strong professional relationship with your supervisor. To facilitate that, topics which should be discussed early in the development of a working relationship between a student and a supervisor have been outlined https://cgps.usask.ca/onboarding/blueprint/your-program/supervision-advising.php

The Department of Biology's policy is to address these issues early through intervention and by facilitating communication. The student should first seek guidance from the Graduate Chair who will set up a meeting with the student and supervisor to see if issues can be resolved. Minutes from that meeting and any remediation will be communicated to the Department Head. If warranted, specific cases may require department-level intervention or a change in supervisor which will be facilitated (where possible) through the Department Head and CGPS.

It is strongly recommended that students become familiar with department policies in this handbook before raising these issues with their supervisors. Managing expectations together with your supervisor can help to ensure that these issues do not develop into an unanticipated hindrance at a later point.

The infographic below is also useful to identify "**reasonable" and "unreasonable" expectations** of both the student and supervisor (excerpt from University of Calgary- Graduate Supervisor Workshop 2021).

Expectations of a Graduate student

Realistic

- ✔ Be aware of rules, regulations and policies regarding your degree program, academic integrity, research integrity, and scholarly conduct
- ✔ Take primary responsibility for program milestones and degree completion
- ✔ Effectively communicate academic deadlines and circumstances that might affect academic progress
- ✔ Submit research work and scholarship applications well in advance of deadlines for review and feedback
- ✔ Meet with your supervisor and supervisory committee on a regular basis
- ✔ Maintain a professional relationship with your supervisor. Make an effort to resolve any conflicts quickly and seek outside help when needed
- ✔ Be proactive and devote the time, effort and energy necessary for progressing in your academic program
- ✔ Seek out professional development opportunities and apply for scholarships/awards

Unrealistic

- ✘ Write major works or conduct research without feedback and guidance
- ✘ Know all of the answers

Expectations of a Supervisor

Realistic

- ✔ Be knowledgeable of academic standards and norms within the field of study
- ✔ Discuss rules of academic integrity, research integrity and scholarly conduct
- ✔ Work with you to establish realistic timelines and monitor program milestones
- ✔ Discuss circumstances that might affect academic progress
- ✔ Provide constructive feedback on written work within a reasonable timeframe, outlining both strengths and areas that need improvement
- ✔ Assemble supervisory and examination committees and schedule examinations
- ✔ Maintain a professional relationship with all students and work to resolve issues quickly
- ✔ Be accessible for scheduled meetings and provide feedback, guidance and advice
- ✔ Encourage you to participate in professional development activities and plan their career
- ✔ Support scholarship applications and provide opportunities for skill development

Unrealistic

- ✘ Write for you
- ✘ Respond to last-minute requests for feedback on written works, or read poorly edited/ unfinished works
- ✘ Know all of the answers

IMPORTANT INFORMATION FOR ALL STUDENTS

ETHICAL APPROVAL AND PERMITS TO CONDUCT RESEARCH

According to the University of Saskatchewan Ethics Office website, "the University requires that all research conducted by its members conform to the highest ethical standards in the use of human subjects, animals and biohazardous materials. Any research or study conducted at University facilities, or undertaken by persons connected to the University, involving human subjects, animals or biohazardous materials must be reviewed and approved by the appropriate University of Saskatchewan Research Ethics Board (REB) or Committee."[5]

The USask has three ethics review boards: the Biomedical Research Ethics Board, the Behavioural Research Ethics Board, and the Animal Research Ethics Board. All research conducted at the University of Saskatchewan must receive ethics approval before the research begins. The official website has complete and current information https://vpresearch.usask.ca/contacts/our-offices/research-ethics-and-infrastructure.php

Review is required even if a similar project has been approved elsewhere.

Research permits may be required before fieldwork can commence. Obtaining these permits is the responsibility of the faculty advisor in collaboration with the graduate student. Students who work with animals or where there are potential environmental impacts, private land access requirements, and/or in parks or protected areas are also responsible for obtaining the necessary federal, provincial or local permits or permissions before undertaking their research.

TRAVELLING OUTSIDE OF CANADA AS A USASK STUDENT

Students who will be travelling outside of Canada to attend a conference or to conduct research must notify the International Student and Study Abroad Centre (ISSAC) prior to the trip. A complete description of the processes involved with international travel for students can be found on the Study Abroad website. All students should review this information well in advance of planned travel, as some actions may be required up to 60 days in advance.

These requirements are in place for all university-related travel outside of Canada, even if a student is returning to his or her country of origin. For example, a student from Denmark who travels to Denmark to conduct research must complete the travel requirements.

REQUESTING EXTENSION OF TIME LIMIT

CGPS considers requests for extension to time in program made through their online system at this link: Request Extension to Program Time. Students should be prepared to include the following information in this request:

- Student name, Program (Environment & Sustainability), and Degree Sought
- Requirements completed to date
- Outstanding requirements
- Reasons for delay in completion and plans for how to address them – a detailed explanation is required here
- Amount of time being requested—Master's students may request up to 8 terms and PhD students up to 9

[5] University of Saskatchewan. "Ethics." https:// vpresearch.usask.ca/contacts/our-offices/research-services-and-ethics-office.phpindex. Website accessed August 27, 2018.

terms.

- Plan and timeline to completion—this should be a detailed plan that the student and supervisor have agreed upon – be specific and realistic
- Date of last committee meeting
- Name of graduate administrator (SENS Graduate Programs Advisor)
- Names of supervisor and SENS graduate chair

CGPS will grant time extensions when students have experienced significant difficulties or delays while actively working to finish the program. Delays caused by employment are not considered to be adequate reason for extension approval.

Request for Leave of Absence

Leaves of absence are available to students for compassionate, medical, parenting, educational, and 'Co-op Program'/Industry reasons.

The Dean of the CGPS, or designate, will consider any petitions from students whose request for leave or extension of leave has been initially denied by the academic unit. If the leave request remains denied, the student may formally appeal under the procedures for appeals of standing in program.

The leave period is not included in the time period for completion of the degree, and tuition is not assessed during the leave. Nominal student fees are assessed during the leave period. While a student is on leave, all supervisory processes are suspended. Unless otherwise permitted by the source of funding, financial support offered to a full-time, fully-qualified student is not available to a student on leave. Students are advised to refer to the terms of the funding agreement. Students are advised to discuss with their academic unit the implications of financial support when a leave is necessary.

See information on Leaves of Absence and how to apply at
https://cgps.usask.ca/onboarding/blueprint/sub/program-disruptions.php

Withdrawal

Students who wish to withdraw from their graduate program must submit a Notice of Withdrawal from Graduate Program form to the CGPS.

As soon as a student decides to withdraw from their graduate program, they must also withdraw from any courses they are currently registered in through the registration channel in PAWS. Please note that registration and withdrawal deadlines each term are applicable, as they pertain to tuition/fee assessment, and grades. Those deadlines can be found in the Academic Calendar.

Failure to submit an appropriate withdrawal form when leaving a program can result in a faculty action of Required to Discontinue (RTD) that will remain on an official academic record. Failure to withdraw from courses can result in failing grades on an official academic record. As such, it is important to complete these tasks when choosing not to continue in a graduate program.

A student may be withdrawn from their program by CGPS due to lack of registration, per graduate policy 7.2.4 or unsatisfactory progress.

APPENDIX A: STUDENT-SUPERVISOR AGREEMENT

The Student Supervisor Agreement is a requirement at the beginning of all student's programs and must be completed and placed on the student's file. It should be completed as soon as the student arrives but not later than the end of the first semester (4 months).

The form fillable pdf is available for download at https://gsa.usask.ca/documents/important-Documents/student-supervisor-agreement.pdf

APPENDIX B: STUDENT PROGRESS REPORT TEMPLATE

Biology Grad Student Progress Report Template

*This template is to be used to provide an update to your committee on progress in your program and will remain on file. An interim written report is required every **6 months** after the proposal defence/proposal exam until completion of degree. An in person committee meeting is required once every 12 months.*

Student Name:
Degree Sought: MSc or PhD
Committee names:
Project Title:
Date of Current Report:
Date of Last in person meeting:

Progress on Coursework
List all for credit or non-credit courses completed and grades
List courses still needed and expected timeline for registration

Progress on Research
Detail progress on research including brief update on recent (6 month) experiments or studies undertaken and results to date by approved thesis objective
Include any relevant figures or tables – eg. sample sizes
Include any unexpected challenges or delays and how these are being addressed
Manuscripts in progress or published

Presentations
Detail any internal (990) or external oral or poster presentations given including presentation title, date, conference name and location.

Awards
List any awards or scholarships held or applied for

Timeline
Provide an expected timeline for the next 6 months including major milestones (Candidacy exam, permission to write, permission to defend etc.)

APPENDIX C: GUIDANCE ON STUDENT MAKING SATISFACTORY PROGRESS

What does it mean for a student to be making satisfactory progress?

Student progress is expected to be documented every 6 months and should be summarized during the required progress reports made to the advisory committee. However, general progress throughout the year is monitored by the student supervisor(s). If the supervisor(s) and/or committee has concerns about progress in program, they should first be documented and reported to the student and to the Graduate Chair. Students who receive scholarships, assistantships, bursaries or other funds from or administered by the University of Saskatchewan, the Department of Biology, or their supervisors must continue to make satisfactory progress and demonstrate their commitment to their program of study to continue to receive funding and continue in their graduate program. A student making satisfactory progress is expected to, at a minimum, meet all of the following conditions.

Administrative: A student making satisfactory progress must be registered and maintain good academic standing and are within the academic time limits of their program.

Research Skills and Accomplishments: Students are required to make progress on planning and conducting experiments or observational studies, data analysis and writing at a level commensurate with the student's experience and training. Students must show active participation and leadership in the learning process; and meeting on-going research obligations, and provide evidence of accomplishments (eg. data collection, publications, reports, external presentations, scholarships, awards).

Requisite Knowledge in Coursework and Program Requirements: Requisite knowledge is determined by several indicators that include, but are not limited to, demonstrated subject knowledge from readings, success in required coursework (minimum GPA to pass and/or retain scholarships and demonstrate competence – e.g. 80% overall average) and consistent progress and meeting expectations for all program requirements (e.g. BIOL 990, progress meetings and exams). These indicators are demonstrated by successfully meeting program and academic deadlines throughout each year of the program.

Professional Conduct: All students are expected to conduct themselves professionally within and outside of program requirements. Guidelines for professional conduct are indicated in the expectations and responsibilities set out in the Graduate Student Handbook, and College of Graduate and Post-doctoral Studies and University policies related to academic and non-academic conduct. Professional conduct includes open and respectful communication with supervisors, mentors, partners or collaborators (if applicable), and peers; responding to communication in a timely and professional manner; being responsive to professional critique; and demonstrating accountability for actions and behaviours. A student making satisfactory progress is expected to maintain regular communication with their supervisor(s) and committee (ie regular progress reports submitted every 6 months), and respond to requests for research updates, in a collegial manner, with their supervisor and committee. Expectations for professional conduct include providing advance notification of planned absences and negotiaing the timing of vacation with their supervisors in advance to ensure time away does not impede progress in program.

What happens when a student is determined to NOT be making satisfactory progress?

Students may take longer to complete their research or may experience unexpected challenges. When this happens, a student making unsatisfactory progress will discuss the challenges s/he is facing and work with their supervisor(s) and committee members to plan for contingencies. A determination of "unsatisfactory progress" overall suggests that the student is failing to meet expectations across a range of categories in the progress report form and/or has failed to perform in a professional and ethical manner. An overall determination of not making satisfactory progress is not given lightly. It does not arise when a single deadline is missed. It is reserved for situations where the behaviour or inattention of the student places in jeopardy the completion of their program of study.

If progress is deemed **unsatisfactory** by a majority of the advisory committee on the first instance (report), the following steps should occur:

- Detailed minutes of the discussion should be documented on the progress report form and shared with the committee and the department (GSC chair and graduate program coordinator).
- Within 2 weeks, a detailed written plan to address issues and adjust timelines should be agreed upon by both the committee and student. This adjustment can include a recommendation for change of scope of the project, coursework, or other measures and the terms by which the student's satisfactory progress may be achieved.
- As required by CGPS, the meeting report document, the student's progress report document, and the remediation plan will be referred to the CGPS Dean/Associate Dean.
- The student must meet the conditions and continue to report on progress within the stated timelines.

If progress is deemed **unsatisfactory** by a majority of the advisory committee on the second instance (not necessarily consecutive reports), the committee will review the case in detail and upon deliberation, the Graduate Chair and committee members will make a recommendation to the student and Department to:

- Initiate changes in working conditions, committee structure (e.g., new supervisor), scope, degree, or expectations made of the student; or
- Discontinue their program.

Upon receipt of the recommendation for Category A, the Graduate Chair will confer with the Department Head and Graduate Secretary to determine next steps including facilitating a transition to different arrangements (if possible). For Category B, the student will be offered the opportunity to withdraw voluntarily. If the student refuses to withdraw voluntarily, the Graduate Chair will inform the College of Graduate Studies that the student is required to discontinue.

All relevant information relating to these decisions will be conveyed to the student, the College of Graduate and Postdoctoral Studies, and the Department Head. A student may appeal the decisions to the College of Graduate and Post- doctoral Studies.

APPENDIX D: GRADUATE STUDENT PROGRESS REPORT FORM

The full form is available here https://usaskca1-my.sharepoint.com/:w:/g/personal/cam202_usask_ca/EaEiGxcngYpPkMcwV8huSXwBXY9OvKI_RoTufY3v9hMaEg?e=Ksij3C

Graduate Student Committee Meeting Report Form

Progress reporting for Masters or Doctoral thesis students in the Department of Biology at USASK is **mandatory**. The report must be completed on the designated timeline (inaugural **4 months**, proposal defense/qualifying exam **8 months**, regular meetings every **6 months until completion**, comprehensive exam **36 months**) where thesis students, their supervisors, and supervisory committee member(s) will collectively assess the student's progress toward degree completion. The department requires at least 1 in person meeting every year, but the student needs a progress report documented every 6 months to be evaluated. In cases where the student has missed an established progress report deadline and has not responded to the Department within 4 weeks after being contacted, the report may be completed in the student's absence, and progress may be judged unsatisfactory.

This report is to be completed by the supervisor or designated Chair during the meeting and shared with the student and committee for approval. The completed report along with a written summary produced by the student is then sent to the department for final GSC Chair signature. The student, supervisor(s), and Department GSC Chair must review, sign (page 6) and retain copies of this form. It must also be made available to members of the supervisory committee and university administrators authorized to view student records upon request.

_____ _____

DATE **MEETING (written only, in person, or online meeting)**

_____

STUDENT'S NAME

_____

DEGREE

_____

START DATE IN PROGRAM

_____

SUPERVISOR'S NAME

_____

COMMITTEE MEMBER

_____

COMMITTEE MEMBER

_____

COMMITTEE MEMBER

_____

COGNATE MEMBER (PHD only)

Mark (X) for *all* that apply:
This report is a(n)

__ **Inaugural** report to set program of study for new students (within 1st term or 4 months)

__**MSc Proposal defense** report (before end of 2nd term or 8 months)

__**PhD Qualifying exam** report (before end of 2nd term or 8 months))

__**Regular Progress Update** report (every 6 months until completion)

__**Permission to Extend Time in Program** report (beyond 6 years)

__**Comprehensive exam** report (PhD only-recommended upon completion of all coursework not later than 36 months)

__ **Permission to write** report (see page 5)

__**Permission to defend** report (see page 6)

APPENDIX E: GUIDANCE FOR EVALUATION OF A THESIS PROPOSAL/DISSERTATION

The following criteria are important for evaluating the student on their MSc or PhD thesis proposal and/or dissertation. Questions posed offer some guidance for committees to evaluate the student based on 6 criteria. Students and faculty may use this document as guidance when examining a thesis proposal or thesis prior to or at the point of defence.

1) Communication skills

- Does the structure and readability of the thesis/proposal bring clarity to the work?
- Is the form and delivery of presentation appropriate given the topic, methodology, and nature of the study?
- Is the purpose of the thesis clear?
- Is the written and oral presentation well organized?
- Comment on the quality of any figures, tables, maps, photographs, and general formatting.
- Is referencing complete, clear, and appropriately formatted using an acceptable style?
- Is the quality of the writing sufficient?

2) Clear rationale

- Is there sufficient engagement with relevant research literature? Is it sufficiently focused?
- Is the method of engaging with the literature appropriate to the chosen methodology?
- Are the objectives or research questions and hypotheses clearly stated?
- Is the thesis/proposal clearly guided by the research questions, hypotheses, or objectives as appropriate to the methodology?

3) Theoretical, Conceptual, or Analytical Framework

- Completeness of the literature review
- Coherent conceptual framework or theory
- Is the theoretical/conceptual or analytical framework appropriate for the study?
- Does the thesis demonstrate sufficient depth of understanding in description and application of theoretical framework?
- Is the work sufficiently situated within research traditions and literature associated with the discipline?

4) Research Skills and Appropriate Methodology

- Is the methodology appropriate for the study questions?
- Does the methodology adopt sufficiently acknowledge research traditions applicable to the field of study?
- Are the methods well-selected and executed?
- Are the data collection methods adequate? Are they clearly explained?
- Are the methods of analysis appropriate to address the questions?
- Are the results and discussion clearly presented? Do they relate back to the framework?
- Are the population, study area, and/or sample(s) is/are clearly specified, if applicable?
- Is it practical/feasible (e.g., timeline, data availability, field site access, etc.)?
- Does it meet ethical standards?

5) **Significance of the Research**

- potential for contribution to scholarly knowledge is evident
- contribution to “community” is specified, if relevant
- demonstrates originality or significance
- exhibits critical thinking

6) **Overall Knowledge**

- Does the thesis/proposal demonstrate original work/thought (original contribution to knowledge)?
- Are the conclusion(s) and/or research recommendations relevant to the thesis aims?
- Does the student have a clear grasp of the topic and field of study?

APPENDIX F: INSTRUCTIONS FOR PHD CANDIDACY EXAM (WRITTEN)

The Advisory Committee, in consultation with the student, will choose **Option 1 (Grant Proposal) or Option 2 (Review Article)** to complete the written component of the Candidacy exam.

General formatting requirements: The entire document can be presented as a Word or PDF file. For simplicity, we have specified page lengths instead of character counts. In preparing the document students should observe the following formatting guidelines:

Format guidelines:

1. Submit as a single MS Word or PDF file, with each section beginning on a new page
2. Explain any acronyms and abbreviations fully;
3. Pages must be 8 ½" x 11" (216 mm x 279 mm);
4. Pages must be single-spaced, with no more than six lines of type per inch;
5. All text must be in 12 pt Times New Roman font;
6. Condensed fonts will not be accepted;
7. Margins must be set at a minimum of ¾" (1.87 cm);
8. All pages should be numbered sequentially and appear in the order specified below
9. Author-Date format must be used for in-text citations

There are **two sections** for the written PhD Candidacy Exam:

1. Notice of Intent (1-2 pages)
2. Written a) Grant proposal or b) Literature Review (10 page limit plus references)

Procedures and formatting specifications for each section are detailed below.

1. Notice of Intent (NOI) (1-2 pages)

The NOI should be submitted prior to completing the Candidacy Exam, and the topic approved by the advisory committee. The purpose of submitting this document is to ensure that the committee approves the subject area for the Candidacy Exam as not duplicating a candidate's research project. It is acceptable for the proposed topic to extend some aspects of the student's research beyond that completed for PhD.

In reviewing the NOI committees should consider whether the topic and option (grant proposal or literature review) is sufficiently different from the PhD thesis work and student background to allow for assessment of the student's ability to work independently. In approving the topic, committee members are encouraged to give the student some initial feedback about the proposal topic and research scope based on information contained within the NOI.

For Grant Proposals, the Notice of Intent should briefly but sufficiently outline the background and need for the proposed research, describe the main and sub objectives, and briefly suggest experimental approaches to address the objectives.

For Literature Reviews, the Notice of Intent should provide a proposed abstract (no more than 1 page) justifying the need for a review on the topic, its novelty, and the scope of the review. Then it should provide a sufficient outline of the literature review article to allow for evaluation on the scope and its differences from the student's thesis work.

2a. Written Grant Proposal Option 1

1. *Proposal* (10 page limit – single spaced with 12 pt. font, including graphics/tables/figures)

a. *Background/ Literature Review (approx. 4 pages)*

b. *Goal, Objectives, and Hypotheses*

c. *Methodology*

d. *Significance of the Research*

2. *List of References* (2 page limit)

2b. Written Review Article Option 2

The student will submit a literature review that follows the style and convention for a target journal.

The journal will have a "guide for authors" relevant for review articles that will provide specific formatting guidelines.

The committee can evaluate the contents of the article within the specific context of the proposed journal.

Word length and format should follow the journal review guidelines but should be approximately 10 pages single spaced including tables/figures (plus as many as needed for references).