



FACULTY OF SCIENCE (HTTPS://WWW.SCIENCE.MCMASTER.CA)

MENU

Department Of Biology (Http://www.biology.mcmaster.ca/)

MENU

McMaster University will continue to host undergraduate academic activities remotely for the Spring/Summer/Intersession term with only a few exceptions for courses that need student access to specialized equipment.

More Information (https://science.mcmaster.ca/news/637-updates-to-spring-summer-2021-science-courses.html)

Graduate Guide

The information on this webpage outlines the policies and procedures followed by the Department of Biology with respect to Graduate Studies. This is a guide of current practices only, not a set of binding regulations.

Graduate studies at McMaster are administered by the Graduate Studies Committee under the regulations of the School of Graduate Studies as described in the current Graduate Studies Calendar (http://academiccalendars.romcmaster.ca/index.php?catoid=25).

Please also visit: G https://www.science.mcmaster.ca/graduate-studies/grad-helpful-links.html (https://science.mcmaster.ca/graduate/grad-helpful-links.html)

Sessional Dates 2019/20

Please visit: Sessional Dates 2019-20 (https://academiccalendars.romcmaster.ca/content.php?catoid=39&navoid=8161)

Biology Graduate Studies Committee

Composition:

Graduate Studies in the Department of Biology are administered by the Associate Chair of Graduate Studies, assisted by the Graduate Studies Committee, under the authority of the Chair of the Department. Graduate Studies Committee members are appointed by the Chair of the Department, usually for a five-year term.

The Graduate Studies Committee consists of the Associate Chair (Graduate Studies), Chair of the Department, a minimum of three other departmental faculty members and one graduate student representative (elected by the graduate students) and the Academic Program Assistant (Graduate). The Graduate Studies Committee should be representative of the major research areas in the Department. All decisions of the Biology Graduate Studies Committee are subject to approval by the Chair of the Department who bears ultimate responsibility for Graduate Studies in the Department.

2019-20 BIOLOGY GRADUATE STUDIES COMMITTEE (BGSC) MEMBERS:

(add '@mcmaster.ca' to an email id)

- Dr. Jianping Xu, Associate Chair (Graduate Studies in Biology), Chair/Biology Graduate Studies Committee Email ID: jpxu
- Dr. Marie Elliot, Chair of Biology (Ex-officio) Email ID: biolchr
- Dr. André Bédard Email ID: abedard
- Dr. Patricia Chow-Fraser Email ID: chowfras
- Dr. Juliet Daniel Email: danielj
- Dr. Brian Goldling Email: golding
- Dr. Graham Scott Email ID: scottg2
- Barb Reuter (Academic Program Assistant Graduate) Email ID: biolgrad
- Graduate Student Representatives
 - o To be confirmed for 2019-20

All correspondences including inquiries, original transcripts and forms: "Change in Status", "Request to be Full-Time Off-Campus", "Petitions for Special Consideration to the Committee on Graduate Admissions and Study", including "up-to-date" study permit documentation for international students should be directed to the Academic Program Assistant (Graduate Studies)/Biology. The Biology Graduate office contact information is below:

- **♀** Life Sciences Building, Room 223
- Phone: 905-525-9140, ext. 23546

• Please Note: Normal processing time of forms and letter requests is 2-3 business days, not including the date that the request was submitted. However, during particularly busy times the normal turn-around time may be extended.

Mandate:

The Graduate Studies Committee assists the Chair of the Department by:

- a. setting standards for admission to graduate studies and recommending students for admission to Graduate School;
- b. maintaining the integrity and academic standards of the graduate program;

- c. maintaining and developing the graduate curriculum;
- d. regularly reviewing the graduate program, including methods of graduate student assessment and training;
- e. regularly reviewing the financial support of graduate students, including the award of teaching assistantships and departmental scholarship funds
- f. evaluating and ranking scholarship candidates;

- f. evaluating and ranking scholarship candidates; Careers & Co-op (http://www.science.mcmaster.ca/scce/)
 g. recommending prospective new graduate students for awards from "The Scholarship Fund" (see III-3);
- i. formulating departmental policy for graduate studies;
- j. advising individual students or staff mem<u>bess conto{httipro/sprewiscienceterrscretastat.tra/jradbraphps/sesealcahndetwalwielgome.html)</u>

✓ ASSOCIATE CHAIR OF BIOLOGY GRADUATE STUDIES RESPONSIBILITIES:

(/index.php)

The Associate Chair (Graduate Studies) is responsible for the ongoing operation of the Biology Graduate Studies Committee and the Graduate Office and for all issues relating to enrolled students. The Associate Chair (Graduate Studies) signs all academic change forms, etc., for continuing students and is responsible, in consultation with the committee, for the review and acceptance of prospective graduate students. Mailing Address

Department of Biology

McMaster University

Applications And Admissions

Life Sciences Building, Room 215 (https://goo.gl/maps/dnUpaMDBwLo)

1280 Main Street West Hamilton, Ontario, Canada

L8S 4K1

1. Information:

Contact Information

The departmental program in graduate studies is advertised by referring students to the Department of Biology website: & http://www.biology.mcmaster.ca (http://www.biology.mcmaster.ca/)

8:30 a.m. - 12:00 p.m.

1:00 p.m. - 4:30 p.m.

Prospective applicants are encouraged to correspond with potential supervisors because acceptance to the program, not only requires that the applicant meet the program Telephone: entry standard, but that a sueprvisory is willing to accept the applicant into his/her lab (tel://19055259140,24400)

Email: Our areas of research and faculty information can be reviewed at: hinlory@mcmaster.ca (maillo:biolog ca/research/ (/research/research-areas.html) and 🗞 @mcmaster.ca) http://www.biology.mcmaster.ca/faculty/ (/people/faculty.html)



(http://www.mcmaster.ca/)

CONTACT (HTTP://WWW.MCMASTER.CA/OPR/HTML/OPR/CONTACT_US/MAIN/CONTACT_US.HTML)

TERMS & CONDITIONS (HTTP://WWW.MCMASTER.CA/OPR/HTML/FOOTER/MAIN/TERMS_OF_USE.HTML)

PRIVACY POLICY (HTTP://WWW.MCMASTER.CA/PRIVACY/)

(https://www.instagram.com/mcmasteru) (http://www.twitter.com/mcmasteru) (http://www.facebook.com/mcmasteruniversity) (http://www.youtube.com/mcmasteruty)

(https://www.linkedin.com/school/164897/)

 $1280\ Main\ Street\ West.\ (https://www.google.ca/maps/place/McMaster+University/@43.260879, -79.919225, 17z/data = \%213m1\%214b1\%214m2\%213m1\%211s0x882c84ac44f72ac1:0x399e00ea6143011c)$

 $Hamilton, Ontario\ L8S\ 4L8.\ (https://www.google.ca/maps/place/McMaster+University/@43.260879, -79.919225, 17z/data=\$213m1\%214b1\%214m2\%213m1\%211s0x882c84ac44f72ac1:0x399e00ea6143011c)$

(905) 525-9140 (tel:+19055259140)

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• a \$110.00 CDN application fee for Fall 2019 applications (payable on-line)

*Please note that the statement of interest, CV, transcripts (and TOEFL or IELTS test results for foreign applicants) must be uploaded through Mosaic.

Final transcripts will be required in the event of a supervisor requesting a letter of offer for the applicant which is then submitted to the School of Graduate Studies for final review and approval.

If applicants experience issues with Mosaic, the Academic Program Assistant is to be contacted at 🖂 biolgrad@mcmaster.ca (mailto:biolgrad@mcmaster.ca)

3. Application Deadlines:

To ensure support from the Teaching Assistantship funding, students need to submit their full application before our early-bird application deadline(s) for the upcoming terms as follows:

Domestic Students/Permanent Residents: Preferred Early-Bird Deadline for May 2020 applications is January 17th, 2020. Extended Deadline is March 31, 2020.

Domestic Students/Permanent Residents: Preferred Early-Bird Deadline for September 2020 applications is January 31st, 2020. Extended Deadline Update is May 31, 2020.

International Students: September Term Entry ONLY: Application deadline for September 2020 applications is January 31st, 2020.

4. Application Procedure:

Information regarding application through Mosaic is available at:

https://gs.mcmaster.ca/academic-services/how-apply (https://gs.mcmaster.ca/academic-services/how-apply)

Applicants must apply on-line through Mosaic and upload the statement of interest, CV, transcripts (and TOEFL or IETLS test results for foreign applicants). Applicants also are required to provide two confidential academic letters of references, by providing referee email contact information in their on-line application.

Documents (official transcripts except for McMaster applicants who can provide unofficial transcripts) are submitted directly to the Biology Department and applicant contents are downloaded through Mosaic by the Academic Program Assistant.

Completed applications are reviewed by the Biology Graduate Studies Admissions Committee. If the student is academically acceptable, the student's information (status, program, application review results from the Biology Graduate Studies Admissions Committee and location of file on Red Folders) is sent by electronic mail to all Biology Faculty and Associate Members with graduate student privileges. (The completed file with original documentation is kept in the Biology Graduate Studies Office).

Interested potential supervisors may contact applicants directly. If you are visiting campus, please also inform Barb Reuter at biolgrad@mcmaster.ca (mailto:biolgrad@mcmaster.ca)

The Associate Chair (Graduate Studies) and Chair of Biology may authorize funds to support the travel of a prospective student for an interview.

5. Acceptance And Rejection:

Recommendation for admission of each student is handled by the Associate Chair (Graduate Studies) and the Graduate Studies Committee. The Committee reviews all applications and determines eliqibility.

Acceptance is recommended on the basis of:

- academic ability (normally an upper second class degree or better, equivalent to a McMaster 8.5 GPA in the last two years of an Honours undergraduate program in biology/science related courses, and for international applicants, a required TOEFL or IELTS score.
- · availability of an appropriate supervisor who is willing to take the student, and
- availability of both financing and space.

If a supervisor is interested in recruiting an eligible suitable candidate, and has sufficient funding and lab space, then the candidate is notified by the Academic Program Assisstant (Graduate) and an official letter of offer will be sent by the Office of the Dean of Graduate Studies on the basis of the recommendation made by the Associate Chair (Graduate Studies).

The official letter of offer contains significant information relevant to the student's program of study such as registration details, funding, teaching assistantship, and a deadline date for acceptance.

In some cases, applicant status is considered "Eligible-pending" which means that additional materials, such as up-to-date transcript, are pending. In these cases, a "conditional" offer can be requested.

All eligible applications will remain active for one academic year. During this time, applicants may provide updated information such as a revised transcript, an updated CV and other relevant materials (e.g., publications and awards). If an application is rejected by the Biology Graduate Studies Admissions Committee's review, the applicant is notified by the Department. Applicants may also contact the Academic Program Assistant (Graduate) for an update of their graduate application status.

6. Registration Of New And Returning Visa Students:

When new visa students first register, they must provide the Biology Graduate Studies Office with originals and photocopies of the Student and/or Employment Authorization. In addition, students must also ensure photocopies are kept for their own future reference.

Returning visa students who have recently renewed their visa documents must submit copies to the Biology Graduate Studies Office for submission to the School of Graduate Studies and Human Resources (as a Teaching Assistant).

Visa students are not eligible for OHIP coverage. Ontario universities have instituted a Health Insurance Plan (UHIP) which is mandatory for all visa students. UHIP premiums for visa students in the Department of Biology for 2019/20 are included as part of their salary. However, visa students must promptly visit the "International Students Office" in McMaster University Student Centre in Gilmour Hall – Room 110.

Financial Support Of Students

1. Minimum Support:

The Biology Department funds M.Sc. students for two years and Ph.D. students for four years. A minimum level of support is guaranteed for this period, providing that progress and performance are acceptable (for exceptional cases, see point 2 below).

The normal maximum term of a M.Sc. can be extended to and for a Ph.D. is six years but there is no guarantee of financial support after two years and four years of the M.Sc. and Ph.D. programs, respectively.

The financial support from the Biology Department normally comes from three sources – a Teaching Assistantship (For example, 2018-19 rate for a full-TA position is \$11,343.80 plus required funding for health and safety), Supervisor (Research Scholarship) contribution, and Graduate Scholarship funding contribution. If a teaching assistantship is not available, the student may be supported by other sources depending on the availability of funds.

The total minimum support for a domestic M.Sc. student in 2019-20 is at least \$21,533.68 and for a Ph.D. student \$24,005.58.

Additional funding is provided for international students due to higher tuition fees, which may include a tuition bursary.

When necessary, supervisors can supplement the minimum level of financial support from their research funds to make offers competitive with other institutions.

For 2019-20, the following information from the School of Graduate Studies applies regarding payroll:

- Tuition is due term-by-term on September 1, January 1, and May 1st
- Interest on tuition will not begin to be collected prior to the second to last day of those months.
- Lump sum (whole-term) graduate scholarship payment by mid-September, mid-January and mid-May.
- Lump sum (whole-term) research scholarship payment by mid-September, mid-January and mid-May.
- Bi-weekly employment payments in the case of a teaching assistantship.
- All funding is provided to the student as such students are solely responsible for paying their tuition.

Each year the Department receives an allocation of teaching assistantships from the Faculty of Science. The Biology Graduate Studies Committee then awards the assistantships to individual students. TA awards and conditions are subject to the regulations of both the School of Graduate Studies and the McMaster University Graduate Students (CUPE 3906) union. TA positions are assigned for each academic year, and may be from 65 hours to 260 hours, dependent on the details of the letter of offer that was accepted by the student.

Major external graduate scholarship awards [e.g. the Natural Sciences and Engineering Research Council (NSERC) of Canada postgraduate scholarship and the Ontario Graduate Scholarship (OGS)] have their own limitations on hours worked and total remuneration. Award holders should consult their terms of award for this information.

2. Waiving Support:

The Biology Department normally accepts students who can be assured of the minimum level of financial support by the Department. In exceptional cases, however, academically qualified candidates having adequate personal financial resources may be admitted to graduate studies without the Department being committed to the minimum level of support. In these cases, the potential supervisor and student must assure the Biology Graduate Studies Committee, in writing, of the availability of adequate financing for the duration of the student's degree program. Acceptance of students under such circumstances will not be automatic; each case will be reviewed by the Biology Graduate Studies Committee on the basis of its own merits.

3. The Graduate Scholarship Fund:

Each year, the Department receives an allocation of funds called the "The Graduate Scholarship Fund", a portion of which may be used for recruiting new graduate students and other competitive awards (e.g., Biology Travel Scholarship Awards assisting in travelling expenses to meetings/conferences, Annual Biology Graduate Achievement awards and others) to eligible in-time students. Decisions as to the awards from this discretionary fund are made by the Associate Chair (Graduate Studies) in consultation with both the Chair of the Department of Biology and the other members of the Graduate Studies Committee.

The Graduate Scholarship Fund may be used to provide entrance awards to incoming students based on academic excellence or to provide a departmental assistantship if a teaching assistantship is not available. Awards may also be made to the student's supervisor to help the supervisor meet the requirements of a departmental scholarship from their research funds. In addition, awards may be used to increase the student's total stipend. While academic excellence shall be one criterion in the award decisions, other factors such as the status of the prospective supervisor's research funds, the need for balance in the Department, and the interest of the Department in recruiting particular students at a particular time may also be influencing factors.

Entrance awards to incoming students are made only for the first year for the "first-term" of graduate studies at McMaster, and are not renewable.

4. Financial And Supervisory Statement:

Students are recommended to check their student accounts through Mosaic frequently (at least on a monthly-basis).

5. Absences And Vacations:

Permission for absences longer than two weeks is required from the supervisor, the Associate Chair (Graduate Studies) and the School of Graduate Studies. Please download the form at:

"Petitions for Special Consideration to the Committee on Graduate Admissions and Study (https://gs.mcmaster.ca/sites/default/files/resources

/full_time_off_campus_request_form_-revised_july_2017.pdf)".

Please ensure this form is submitted to the Academic Program Assistant (Graduate) in LSB-223 for final required signatures and submission to the School of Graduate Studies.

If possible, forms should be submitted at least one month ahead of a planned absence. Students are allowed a total of two (2) weeks vacation annually, which may be taken during the mid-term recess or subsequent to the completion of TA duties within an academic term during which they are employed. Scheduling of vacations shall be subject to the academic and residency requirements of the student's program of studies and must be approved by the supervisor.

For summarized details, please visit: 🖹 Leave of Absence (http://macdrive.mcmaster.ca/f/f157e547832146bca4df/).

6. Students With "Post Program" Status:

Students who are beyond 24 months in the M.Sc. program and 48 months in the Ph.D. program who absolutely require financial assistance to complete their thesis work may apply to the Biology Graduate Studies Committee for support. Appeals for support must be filed by the student with a letter outlining the circumstances and an anticipated timetable for completion of the thesis. The application must be accompanied by a letter from the student's supervisor indicating why the student has reached post program, what financial resources are available for continued support, and the supervisor's assessment of the student's timetable for completion. Applications will be assessed individually and support may be granted at the discretion of the Biology Graduate Studies Committee.

Supervisory Committees

[UPDATED - EFFECTIVE SEPTEMBER 2017]

1. Committee Formation:

It is the responsibility of the supervisor and the student to ensure that a Supervisory Committee be formed for each M.Sc. and Ph.D. student within eight (8) months of initial registration for students starting in September. Students starting in January or May need to form their Supervisory Committees within five (5) months. Please see the updated information below, for January and May start students, as this affects an earlier consideration and supervisory committee formation due to the required supervisory committee meeting and progress report deadline in the upcoming end of November of the same calendar year.

The supervisory committee information must be provided to Academic Program Assistant (Graduate) for Associate Chair (Graduate Studies)'s review and approval. The Supervisory Committee normally reports on the student's progress each academic year (September to August).

- M.Sc. Students: The supervisory committee must consist of a minimum of two "research-stream" faculty members. While one member must be a full-time Biology faculty (normally the Supervisor), the other could either be a Biology associate or adjunct, or a tenured full-time faculty from another department at McMaster University.
- Ph.D. Students: The supervisory committee must consist of at least three members. Two must be full-time "research-stream" Biology faculty, including the supervisor. The third member could be a Biology associate or adjunct, or a tenured full-time faculty from another department at McMaster University.
- Please note: Additional committee members (for both M.Sc. and Ph.D.) may be included assuming they meet the above criteria. Such members could vote on the student's performance as well. A member who does not meet the above criteria, including teaching/CLA faculty, could still serve on the committee, but will not be recorded on the supervisory committee form, unless approved in writing by the Dean of Science and Dean of School of Graduate Studies.

When there are membership changes in the supervisory committee (e.g., replacements, additions, etc.), the new committee composition must be approved by the Associate Chair (Graduate Studies) prior to holding the next meeting.

The Associate Chair (Graduate Studies) may recommend changes in membership if necessary. Depending upon the case, the Associate Chair (Graduate Studies) may consult with the Biology Graduate Studies Committee for additional input. The decision of the Biology Graduate Studies Committee will be considered final.

2. Supervisory Committee Meeting And Progress Reports:

The supervisory committee must meet at least one and preferably twice a year with the student. It is both the responsibility of the supervisor and the student to ensure that these meetings take place.

NEW: Based on the new School of Graduate Studies regulation, beginning in September 2017, the supervisory committee meeting and progress report must be completed BEFORE the end of November.

For students who start their program in January and May in 2019, they must have have their supervisory committee meeting and progress report completed for submission to the School of Graduate Studies by November 30th, 2019.

For those who started their program in September 2019, as well as those will will start in January and May 2020, their supervisory committee meeting and progress report must be completed by November 30th, 2020.

In summary, ALL supervisory committee meetings and progress reports must be held, completed and submitted to the School of Graduate Studies by November 30th.

For MSc and PhD students who are "over-time" (over the normal two years and four years, respectively for MSc and PhD) or "out-of-time" status (over three years and six years respectively for MSc and PhD) status, a formal supervisory committee meeting EVERY six months MUST occur.

Supervisory Committee Report Guidelines:

The student provides a progress report to members of the Supervisory Committee Members a week prior to the "confirmed" Supervisory Committee Meeting date. It is important to ensure that the members of the Committee have sufficient time to read the report. Failure to provide the progress report in a timely manner may result in rescheduling of the Supervisory Committee Meeting.

The report should contain a title for the thesis project, an abstract, background and rationale of the project, specific hypothesis/objectives, key results (including relevant figures and tables) and progress accomplished since the last Supervisory Committee Meeting The report should also describe the programs encountered and outline an experimental plan or a list of research priorities for the next 12 months, and with key references listed at the end. Students could also request a supervisory committee meeting at any time, when they have academic problemls or difficulties with their research program.

All students are responsible for arranging the date, booking the room and audio-visual equipment if necessary. MSc students may download the form in advance at: % http://www.biology.mcmaster.ca/graduate/graduate-forms/ (/graduate/current-students/graduate-forms.html) for their meeting.

For PhD students, there is a new process, involving an electronic supervisory committee form. It is important to ensure that the supervisory committee member(s) are up-to-date in Mosaic. Please ensure that the Academic Program Assistant has the most recent information. PhD students can directly submit their progress reports online, with supervisory committee members providing their assessments of the progress directly online for each student. At the present, both the online and paper forms are still acceptable for PhD student's supervisory committee reports.

For the paper forms, each completed supervisory committee report must contain all signatures of all supervisory committee members and the student to be subm, itted to the graduate office, after each committee meeting.

NOTE: STUDENTS MUST ALSO KEEP A COPY OF THEIR COMMITTEE REPORTS FOR THEIR OWN RECORDS AND ALSO PROVIDE A COPY FOR THEIR SUPERVISOR.

For MSc student, on each report the student's progress to date must be rated as "Satisfactory" or "Unsatisfactory". "Satisfactory" indicates that the student has received a passing grade on graduate courses and that the thesis research is progressing well and on schedule. If an "Unsatisfactory" rating is indicated, another committee meeting must be held between two to four months to further evaluate the student's progress and again only a "Satisfactory" or "Unsatisfactory" rating can be given. All "Unsatisfactory" ratings from committee meetings will be brought to the attention of the Associate Chair/Biology Graduate Studies Committee which may recommend further courses of action to the student and/or supervisory committee.

For PhD students the progress is rated "Excellent", "Good", "Marginal" or "Unsatisfactory". If a "Marginal" or "Unsatisfactory" rating is given, the student must have another committee meeting within four months to further evaluate the student's progress.

A MSc or PhD students receiving two consecutive "marginal" or "unsatisfactory" ratings may be asked to withdraw from the graduate program.

3. Supervisor's Absence:

If a graduate supervisor leaves the University, or is absent on research leave, or is required by the University to perform other duties that would impair effective supervision, the supervisor must make formal written arrangements for an interim supervisor. Copies of this written arrangement must be given to both the student and the graduate office to be put in the student's file.

4. Student Grievance:

A student who is dissatisfied with his/her progress, or feels that the commitments of the supervisor are not being fulfilled, should call a meeting of the supervisory committee to discuss the problem. Students are urged to discuss any problems with their supervisor and/or supervisory committee immediately as they arise. The student or a member of his/her supervisory committee can request the involvement of the Associate Chair (Graduate Studies) or a member of the Graduate Studies Committee in such discussions, through the graduate studies office. If this procedure is unsatisfactory or inappropriate, the student should request an interview, through the Biology graduate office, with the Associate Chair (Graduate Studies) and/or a member of the Graduate Studies Committee, who will recommend an appropriate course of action.

5. Change Of Supervisor:

The initial selection of a supervisor is usually considered a permanent arrangement by the student and professor. If, however, the student and the professor do not work well together, or find that their research interests are not compatible, a request to change supervisors may be made in writing to the Graduate Studies Committee. In all cases, it is recommended that the student discuss proposed changes with all members of his/her supervisory committee and with the Associate Chair (Graduate Studies) before a formal request for change is made.

6. Conflict Resolution:

Although rare, conflicts between supervisors and students do arise. The primary instrument to resolve a conflict should be the Graduate Supervisory Committee. With a proper composition, it is expected that most conflicts will be resolved in a fair and timely manner. However, if a resolution cannot be found, the Associate Chair (Graduate Studies) has the obligation to intervene and, if necessary, participate in the meetings of the Graduate Supervisory Committee, acting as "mediator". If the conflict persists, then it is proposed that the Associate Chair (Graduate Studies) become a de facto member of the graduate supervisory committee with active role and voting right until, in consultation with supervisory committee and BGSC, the conflict is resolved.

7. Withdrawal From The Program:

For students who withdraw for reasons other than unsatisfactory reports or failure of an examination, a letter and academic change form from the student and a letter from the supervisor detailing the reasons for withdrawal must be sent to the Associate Chair (Graduate Studies). Students are also required to complete a "Change of Status" form including signatures, and submission to the Biology Graduate office for final review, Associate Chair's signature and final submission to the School of Graduate Studies.

8. Non-disclosure (Confidentiality) Agreements:

Commercial or patent arrangements with industrial partners may require a legal agreement that defines ownership and confidentiality. University guidelines regarding appropriate use and appropriate text for such arrangements are provided by the Office of Research Contracts and Intellectual Property (ORCIP) and the School of Graduate Studies. University policy on Intellectual Property is posted on the web at: http://ip.mcmaster.ca (http://ip.mcmaster.ca.). Students should also refer to section 6.6 (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%226.4.4+%22&returnto=search#6.6_Student_Faculty_Non-Disclosure_Agreements) of the Regulations of Graduate Study, in your Graduate Studies calendar. Signatories of non-disclosure agreements who are graduate faculty or graduate students in the Department of Biology are requested to provide the Biology Graduate Studies Committee AND the ORCIP with a copy of the agreement. Prospective graduate students should be aware that signing such non-disclosure agreements may impair their ability to publish their research, and therefore impede development of their career. Further to the Research Data section 6.4.4 (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%226.4.4+%22&returnto=search#6.4.4 Research_Data) (under the Ownership of Student Work section 6.4 (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%226.4.4+%22&returnto=search#6.4.0 Ownership_of_Student_Work)) states that, the Faculty and Department "recommend that students and supervisors make clear agreements in advance concerning the ownership and use of data".

Guidelines For Graduate Courses In Biology

The graduate course offerings in the Department of Biology are continually being revised to better reflect emerging issues in modern biology and the research interests of faculty members in the department.

For a complete listing, please visit: SGS Calendar Biology Courses (http://academiccalendars.romcmaster.ca/preview_program.php?catoid=20&poid=12558&hl=%22Biology+courses%22)

For Biology Graduate Courses Offerings for 2019-20, please visit: % 2019-20 Biology Graduate Courses (https://biology.mcmaster.ca/graduate/prospective-students/grad-courses.html)

1. Overview:

Graduate courses are an essential part of the program of graduate studies in the Department of Biology. Apart from providing a formal means for students to increase their biological knowledge, courses should test and improve students' skills at scientific reporting, both written and spoken, and should act to stimulate the research climate and interests of both students and instructors.

The experience of the instructor(s) in presenting course material and leading well-focused discussions is generally crucial. It is suggested, therefore, that some formal seminars or lectures be given by the instructor(s) in each course. General guidelines are listed below. Instructors wishing to teach a course involving major deviations from these guidelines should discuss these with the Graduate Chair.

2. Course Outline:

A written outline of the course should be given to the students at the first or second course meeting. This course outline should contain a marking scheme and a list of weekly topics to be covered. A copy of the course outline should be forwarded to the graduate office.

3. Weekly Meetings:

Except for reading courses, a graduate course is expected to involve regular weekly meetings totaling approximately three hours/week.

4. Level Of Instruction:

Graduate courses (700 level) should be presented primarily at the level of the current original literature in the field. Students lacking the necessary background to cope with such a course should be given preparatory reading or course work.

5. Structure And Evaluation:

The structural organization and the method of evaluation of students must be discussed and determined at the beginning of the course. It must then be given to the student in a written fashion.

6. Formal Critiques By Instructor:

If student seminars or "participation" are graded, a critique should be made by the instructor. This critique may be written or oral and should cover content, style, approach, delivery, etc. In order to improve the effectiveness of future presentations, this critique should be made before the student's next presentation.

7. Number Of Instructors:

Whenever possible, two (or more) instructors should be involved in each graduate course. This provides students with a diversity of opinions and expertise and helps ensure objectivity of evaluation.

8. Statement Of Academic Integrity:

Each course outline should provide explicit expectations regarding academic integrity and procedures for dealing with allegations of academic dishonesty.

9. Official Registration:

For a graduate course(s), enrollment/registration is completed through Mosaic. For more information, please visit: A https://graduate.mcmaster.ca/academic-services/how-enroll (https://graduate.mcmaster.ca/academic-services/how-enroll)

Course Requirements

1. Course Requirements:

All M.Sc. students must complete at least two three-unit 700 level courses in Biology or related fields in order to graduate. All MSc students are encouraged to take Biology 712 (Communication and Scholarship Skills in Biology) course. Upon the recommendation of the supervisor and/or the supervisory committee members, additional courses, including Biology 600 level course(s), may be taken to enhance the student's knowledge and background. A minimum passing grade is B- in each course.

For Ph.D. students, if the student already has an M.Sc. degree before starting his/her Ph.D. program, there is no mandatory course requirement. However, if the Ph.D. candidate is a transfer from our own M.Sc. program, then a total of two three-unit 700 level courses in Biology or related fields are required beyond the B.Sc. degree. It should be noted that the Department may require students enrolled in the Ph.D. program to take graduate or undergraduate courses to remove program deficiencies. The student may meet with his/her Supervisory Committee within nine months of enrolling in their doctoral program to outline expectations with respect to courses.

In addition to the above-mentioned courses, Biology students are also required to have passed SGS 101 (Academic Integrity and Research Ethics) and SGS 201 [Accessibility for Ontarians with Disabilities Act (AODA) Training, see below].

All graduate students at McMaster University are required to enrol through Mosaic for SGS 101 and SGS 201 within the first term after their admission into graduate studies at McMaster University and pass these two courses.

THESE COURSES MUST BE COMPLETED WITHIN THE FIRST MONTH OF JOINING OUR GRADUATE PROGRAM.

SGS 101 - Academic Research Integrity And Ethics

This course will introduce incoming graduate students to the standards of academic integrity expected at McMaster. It will provide examples of acceptable and unacceptable practices and will clarify the responsibility and expectations of graduate students with respect to academic integrity. Students will be exposed to the Academic Integrity Policy of McMaster and best practices will be described that will minimize the likelihood of incorrectly attributed work from appearing in their assignments and research records.

SGS 201 – Accessibility For Ontarians With Disabilities Act (AODA)

All graduate students are required to complete appropriate training required to complete their research and studies (health and safety training, ethics training, biosafety training, etc.), as determined by their home Department or Program. All graduate students also are required to complete training on the Accessibility for Ontarians with Disabilities Act (AODA), which can be completed on-line [www.mcmaster.ca/accessiblity]. Having an understanding of how we can identify and reduce attitudinal, structural, information, technological, and systemic barriers to persons with disabilities is core to McMaster University's commitment to supporting an inclusive community in which all persons are treated with dignity and equality, and completion of AODA training is critical as McMaster's graduates move forward in their varied, chosen professions. Students may not graduate or register for subsequent years in their program until they have completed their required training.

Please ensure that the Academic Program Assistant (Graduate Studies) has email confirmation of the completed SGS mandatory courses. These courses are included on your transcript. In-time new students with a failure to complete and pass these mandatory courses will result in an "F" grade on their transcripts and prevent enrollment for the upcoming academic year.

For details regarding the enrollment process, please visit: That https://graduate.mcmaster.ca/academic-services/how-enroll (https://graduate.mcmaster.ca/academic-services/how-enroll)

For completion of the "Violence and Harassment Prevention Training", please visit:

🗹 http://www.workingatmcmaster.ca/eohss/prevention/workplace-violence/ (http://www.workingatmcmaster.ca/eohss/prevention/workplace-violence/)

Graduate Students also must discuss safety training with their supervisor and ensure that all the safety training requirements are met as soon as possible.

2. Course Failure:

A student who fails to obtain B- in a prescribed graduate or undergraduate course is normally asked to withdraw from Graduate Studies. In some cases, the student's supervisory committee may recommend to the Associate Chair (Graduate Studies) that the student should:

- a. repeat the course or
- b. take a substitute course

Such a recommendation should be made in writing to the Associate Chair (Graduate Studies) within one month of the grade being announced, outlining possible reasons for the student's failure in the course. The Associate Chair (Graduate Studies) will then send this request to the Chair of the Department and the Dean of Graduate Studies for approval.

3. Illness During Course Work:

If a graduate student is ill or is under a doctor's care prior to an examination or course deadline, this must be brought to the attention of the course instructor at that time so that examinations or deadlines may then be deferred at the instructor's discretion. Medical excuses made "after the fact" will not be accepted.

Graduate Course Offerings For 2019-20

For a listing of Biology graduate courses offered in 2019-20, please visit the website at:

🗞 2019-20 Biology Graduate Course Offerings (https://biology.mcmaster.ca/graduate/prospective-students/grad-courses.html)

For a complete listing of all of our Biology Graduate Courses, please visit the School of Graduate Studies Calendar at:

SGS - Calendar - Biology Courses (http://academiccalendars.romcmaster.ca/preview_entity.php?catoid=20&ent_oid=3032&hl=%22Campos%22&returnto=search#Program_and_Course_Offerings)

PLEASE NOTE:

Students should consult the Biochemistry and Biomedical Sciences, Mathematics and Statistics, Radiation Sciences, and the Medical Sciences graduate program sections of the School of Graduate Studies Calendar for additional course selections.

SGS - Calendar (http://academiccalendars.romcmaster.ca/index.php?catoid=20)

Guidelines For Graduate Student Teaching

1) TA Duties:

Most graduate students have a Teaching Assistantship (TA) during their in-time graduate student career (i.e. 24 months for M.Sc. students and 48 months for Ph.D. students). Assigning individual graduate students to the TA slots of various biology undergraduate courses is carried out in July/August and finalized in early September, each academic year, by the Biology Administrator.

Your specific TA duties for a particular undergraduate course are assigned by the faculty member/instructor responsible for that course. You must have a clear understanding as to your specific TA duties at the beginning of each course and this understanding is a joint responsibility of both the TA and the instructor of the course.

2) Teaching Evaluation:

Graduate student teaching in undergraduate courses is evaluated by the undergraduate students taking the course and the instructor responsible for the course. This information may be used by the Department in preparing recommendations for scholarships and/or job placements.

Guidelines For Graduate Student Seminars

M.Sc. students are expected to give at least one satisfactory seminar to the department during their graduate studies.

Ph.D. students are required to give at least one departmental seminar on their research work at the time of their supervisory committee meeting to request to write their thesis. This is in addition to that required for the comprehensive examination during their graduate studies. The seminar will be evaluated with feedback provided by the student's supervisory committee and recorded in the student's file. Ph.D. students may download the "Biology Ph.D. Student Exit Seminar (http://macdrive.mcmaster.ca/f/ba4c27d474314cd7979e/)" form prior to the seminar to be given to their supervisor for completion.

While the Exit Seminars by PhD students are generally given at the weekly Departmental Seminar Series, seminars by MSc students and the non-exit seminars by PhD students are generally given in one of the specialized weekly Departmental seminar series (i.e. the Ecology and Evolutionary Biology Seminar Series, the Molecular, Cell and Developmental Biology Seminar Series, and the Integrative Physiology Seminar Series).

Transfer From M.Sc. To Ph.D. Program

The first Supervisory Committee (SC) meeting of a new M.Sc. student must be held within the first 9 months of registration – dependent on the start date (applies to students starting in September, students starting in January or May meet earlier to meet the November 30th deadline. In this meeting, among other things, the SC will discuss the possibility of transfer to the Ph.D. program and an approximate date (in the next 3-11 months) for holding another meeting (dependent on the start date).

Whether the second meeting is termed as a regular committee meeting or a Transfer Examination (TE) meeting will depend on the progress of the student and his/her wishes to continue in the graduate program. In any case, the TE must be completed within 12-20 months from the initial date of registration. A successful completion of TE will allow the student to register as a Ph.D. candidate in the following term.

In the event that the SC does not approve transfer, the second meeting will be an opportunity to discuss an anticipated date for the M.Sc. defense examination and degree completion (see Section XIV for Thesis Examination guideline). This information will be indicated on the meeting report.

For further information, please visit: 🔼 " Biology Transfer Student Checklist Process (http://macdrive.mcmaster.ca/f/9e3c1f0398674903b552/)".

Format Of Transfer Examination:

The format of TE will be mostly similar to the annual supervisory committee meeting (i.e., a written progress report, a short presentation and a "Question/Answer" period).

However, for the transfer examination, the student is also required to submit a brief outline (2 pages maximum) of the proposed Ph.D. research plan. The research outline

should contain an overall goal or hypothesis, short and long-term aims, a general plan of action, expected outcomes and the significance of the work.

Process

Prior to holding a TE the Supervisor, in consultation with the SC, will propose the names of TE Committee members. This information, along with the following requirements of TE, will be forwarded to the Associate Chair (Graduate Studies).

- **1** The following seminar information should be provided to the Associate Chair (Graduate Studies) 7-10 business days in advance to obtain formal approval of the transfer examination process.
- · name of student
- supervisor
- · seminar title
- · date of presentation
- · location and time
- proposed TE examination members, including TE Chair (see below for membership composition)
- proposed PhD research outline (2 page maximum)
- lay abstract 100 words maximum (a new requirement for the seminar notice)

It is the responsibility of the student and the Supervisor that the above process takes place in a timely manner.

The Associate Chair will confirm approval in writing to the student, supervisor and examination committee members, and Academic Program Assistant (Graduate). Once this information is confirmed, the notice will be posted.

The TE will be open and can be attended by all Biology and McMaster community members. The seminar will be 30 min long (45 min maximum), followed by 30-60 min "Q/A" period. The Q/A session will normally be restricted to the TE Committee members and the candidate but the audience may be invited to ask questions if time permits

Committee Structure And Roles:

The Examination Committee will consist of three "research stream" full-time faculty members, namely the Supervisor, one Supervisory Committee member and a Biology faculty member external to the committee. At least two of the examiners must be full members or associates of the Department of Biology.

Please note: Additional committee members may be included assuming they meet the above criteria. Such members could vote on the student's performance as well. A member who does not meet the above criteria, including teaching/CLA faculty, could still serve on the committee, but will not be recorded on the transfer examination form, unless approved in writing by the Dean of Science and the Dean of the School of Graduate Studies.

The External member will chair the examination. Care will be taken to ensure that this person has no conflict of interest with the supervisor and the student. The TE Chair will ensure that the process occurs in accordance with established procedures (outlined above) and will be responsible for completing a new "Transfer Examination Form" in consultation with other committee members.

Q Assessment:

The TE Chair will complete the "Transfer Examination Form". The following items will be addressed in the Form,

- Evidence of research progress so far, including accomplishments in the program (Publication/scholarship/award etc.)
- Quality of the proposed research plan
- · Maturity of the candidate, i.e., preparedness and commitment to pursue graduate study
- Communication skills (written/oral)
- Willingness to transfer to Ph.D.
- Overall rating of the student (Excellent/Good/Not acceptable)

Based on the above assessments, arrived at by consensus or majority agreement, the TE Chair will make a final recommendation (Proceed to Ph.D./Proceed to complete M.Sc.) that will be considered final and implemented by the Department.

If the decision is to complete M.Sc., then the procedure described in Section XIV will follow.

The completed TE form with all signatures must be submitted to the Biology Graduate Office.

It is required that upon successful completion of TE, the student completes the SGS online "Change in Status" form at: 🔀 https://gs.mcmaster.ca/sites/default/files/resou.

 $\label{lem:change_of_status_form_september_2017.pdf} \end{substitute} $$ \c of status_form_september_2017.pdf (https://gs.mcmaster.ca/sites/default/files/resources/change_of_status_form_september_2017.pdf) $$ \c of status_form_september_2017.pdf (https://gs.mcmaster.ca/sites/default/files/resources/change_of_status_form_september_2017.pdf) $$ \c of status_form_september_2017.pdf (https://gs.mcmaster.ca/sites/default/file$

The student must submit a hard copy of the completed form to the Biology Graduate Office. The Ph.D. status will become effective in the following term.

Ph.D. Comprehensive Examination

Ph.D. Comprehensive Examination (New Procedure)

All Ph.D. candidates, either transferred from M.Sc. or accepted directly into the program, are required to pass a Comprehensive Examination (CE).

The CE of a student will normally be held between 12 and 20 months (with an upper limit of 24 months in exceptional cases) after the date of registration in the Ph.D. program. The purpose is to test the breadth of knowledge, skills and competency of a Ph.D. student necessary to undertake the Ph.D. research work.

Process, Format, Examination Committee And Timetable

The first SC meeting of a Ph.D. student will occur within 9 months of registration as a doctoral candidate, for students starting in September. Students starting in January or May must meet by the end of November of the same calendar year for supervisory committee report submission to the School of Graduate Studies by November 30th. Apart from reviewing the progress of the student, the CE procedure, potential examiners, and a time frame will also be discussed. This information will be included in the meeting report.

In this meeting, the SC will also identify up to three (3) study topics for the student that are chosen to broaden their breadth of scientific knowledge, extending beyond the topic of their Ph.D. research. The study topics will be identified in the newly revised SC Meeting Form. The student will be required to read this information and sign the form to confirm their agreement and understanding of the approved topics.

Subsequent to this meeting, the Supervisor, in consultation with the Supervisory Committee and the student, will propose the composition of the Comprehensive Examination Committee (CEC). The CEC will consist of a minimum of four (4) "research-stream" full-time faculty including the Supervisor, two Supervisory Committee members, and another McMaster faculty member who is not a member of the SC. At least two members of the CEC must be Biology faculty or Biology associates.

Please note: Additional committee members may be included assuming they meet the above criteria. Such members could vote on the student's performance as well. A member who does not meet the above criteria, including teaching/CLA faculty, could still serve on the committee, but will not be recorded on the Ph.D. comprehensive form, unless approved in writing by the Dean of Science and Dean of School of Graduate Studies.

The Associate Chair (Graduate Studies) will approve the CEC composition and appoint one member of the Committee as the Chair of the CEC. This information will be communicated in writing with all individuals involved.

Subsequent to the committee formation, the student will contact all CEC members and confirm a date of the examination 6-8 weeks in advance of the actual CE date. In addition, the student will also prepare a one-page outline of the research work to be undertaken.

- The following seminar information must be provided to the Associate Chair (Graduate Studies) to obtain formal approval of the Comprehensive Examination process:
- name of student
- supervisor
- · seminar title
- date of presentation
- location and time
- a brief (no more than 1 page) outline of the proposed research
- lay abstract 100 words maximum (a new requirement for the seminar notice)

The Associate Chair (Graduate Studies) will confirm approval in writing to the student, supervisor, CE committee members and the Academic Program Assistant (Graduate). This approval initiates the start of the CE process. The seminar notice will be posted following the approval. A minimum of 6 weeks is required after this approval date to hold the examination.

At least 8 to 12 days prior to the examination date the student will submit a copy of the written research proposal to each member of the CEC and an electronic copy to the Biology Graduate Office. The examination will consist of a public seminar followed by an in camera session with the candidate and the CEC.

The comprehensive examination will consist of the following three parts:

- i. Preparation of a formal research proposal outlining the long term and short-term goals of the thesis project, the hypothesis being tested, the experimental approach to address the proposed objectives, and the progress till date.
- ii. Presentation on the background of the proposed project, an overview of the aims and progress thus far in a seminar. At the discretion of the CEC, the presentation may also cover the literature in assigned study topics intended to fill knowledge gaps in areas outside of the current Ph.D. work.

Graduate Guide - Department of Biology | McMaster University https://www.biology.mcmaster.ca/graduate/grad-guide.html#announcements

iii. Defense of the research proposal, progress, and oral examination of the background preparation including the integration of knowledge gained through reading study topics by the CEC.

Written Component Of CE

The scope of the written component of Comprehensive Examination is broadly defined by the content of the research proposal. The format of the research proposal is described below. The proposal should outline experiments to be carried out within a reasonable timeframe of a Ph.D. degree and the progress that has been achieved since the Ph.D. transfer. The committee will advise the candidate on structural details of the proposal taking into account the specific goals, needs, and background of the student.

Research Proposal Format

The research proposal shall not exceed a total of 10 single-spaced pages with 12-point font and 1 inch margins all around. The reference list and Figures are not included in the 10-page limit.

The following is a brief description of a common format for research proposals. The student should seek specific input from the CEC on the required sections and expectations regarding content and level of detail.

In general terms a research proposal should include review of the relevant literature, preliminary results or progress to date, the proposition of one or more testable hypothesis(es), and adequate description of the methodology and technology necessary to address the questions posed.

A research proposal normally begins with an Abstract, which is followed by an Introduction that states in general terms, the question that will be addressed and covers the relevant background (review of the literature and relevant results). This is followed by a section in which the Hypothesis to be tested is stated. The Long and Short Term Goals of the proposed research should be explicit and should be clearly linked to the hypothesis being tested. The Proposed Research section should clearly address the short-term goals of the proposal. For each section of the proposed research, state succinctly the question being addressed, the methodology that will be employed as well as potential pitfalls and caveats. Possible outcomes and interpretation of results should be discussed at the end of each section. A brief description of alternative approaches should also be included.

Oral Component Of CE

The oral component of the Comprehensive Examination is the presentation of the public seminar, in the presence of the CEC and general audience. The entire duration of the seminar should be 45-50 minutes.

The content must include the background in the broad area relevant to the proposed work. The candidate should briefly articulate the hypotheses to be tested, experimental approach to test these hypotheses, potential problems, possible outcomes, and how these results may advance knowledge. The progress since the start of the Ph.D. research should also be presented.

The candidate must also demonstrate integration of the knowledge gained through reading the literature in assigned study topics. The onus is on the candidate to demonstrate that the presentation is thorough, reveals depth in scientific knowledge, and not merely based on textbook or single article information.

The candidate may be questioned by any member of the audience on the content of the seminar. The candidate should be prepared to answer questions examining all aspects of the proposal and seminar presentation.

Defense

The defense will take place immediately following the seminar. No additional presentation is necessary. The candidate will be examined by the CEC on the conceptual and technical background that supports the research proposal as shown in the written document and as presented in the public seminar. The candidate should be able to adequately discuss and support the rationale and technical background of the written proposal, progress made since starting the Ph.D. work, outline additional experiments and evaluate possible outcomes of experiments proposed and discussed during the defense.

The CEC will also ask questions on study topics assigned previously by the Supervisory Committee. It is expected that the student will have sufficient and critical understanding of the pertinent literature and will be able to identify key questions that need to be addressed in the field.

Evaluation

The criteria of CE assessment will be:

- i. Effective research proposal writing and seminar presentation:
 - a. The major thrust and content of the seminar and research proposal must be understandable by anyone with a B.Sc. in Biology, but should extend beyond what is generally available in textbooks.
 - b. The technical language (for example, the use of acronyms) must be understandable by a generalist.
 - c. The writing style should be concise, precise and demonstrate the candidate's ability to use the language of the specialty.
- ii. Effective demonstration of critical thinking and theoretical knowledge:
 - a. Understanding the hypotheses being tested and knowledge of pertinent literature.
 - b. Ability to answer questions related to the theories and techniques used or planned to use in the proposed research.
 - c. Ability to design experiments that will address the proposed hypotheses and extend current knowledge in the specialty.
 - d. Ability to identify important findings and critically evaluate progress in the field related to assigned study topics.

Q Assessment

In the end, the CEC Chair will be responsible for filling out the CE form and providing the necessary details. The following points must be included:

- Background knowledge of the Ph.D. project
- · Evidence of progress so far
- Quality of the research proposal (including aims, design, and experimental details)
- Seminar presentation (organization, style, contents etc.)
- List of assigned study topics and broad knowledge in these areas
- Accomplishments in the program (Publication, scholarship, award, etc.)
- · Maturity of the candidate

Based on the above assessment, arrived at by consensus or majority agreement, the CE comprising the Seminar, the Written Proposal and the Defense shall be marked as Pass, Fail or Pass with Distinction.

Within a week of their comprehensive examination, successful candidates will receive written comments on all aspects of the CE namely the proposal, the seminar and the defense from the CEC Chair, providing constructive feedback for future reference. A copy of the CEC report to the candidate containing comments and the result of the examination signed by the student and the members of the CEC must be submitted to the Biology Graduate Office.

A fail normally requires that the candidate repeat the CE in its entirety – i.e. seminar, research proposal and defense. The candidate will normally be allowed six weeks to repeat the CE. This option may be exercised only once.

At its discretion, the CEC, rather than providing a grade of "Fail", may ask the candidate to revise any aspect of the CE within a period, not exceeding six weeks, before the final mark is assigned. This option may be exercised only once.

For candidates who fail the CE, or who are asked to revise the research proposal, seminar or to undertake another examination, a form will be provided containing specific written directions from the CEC, including a timetable for the candidate to complete the examination process. The candidate must sign the form, acknowledging that he/she understands the directions received and agrees to complete the exam process by the specified date. A copy of the CEC report containing comments and the results of the examination to the candidate must be submitted to the Biology Graduate Office.

Two failures of the CE will lead to the dismissal of the student from the Ph.D. program. A memo detailing the CEC decision regarding the CE outcome and supporting reasons, written by the CEC Chair in consultation with the CEC members, must be submitted to the candidate and Associate Chair (Graduate Studies) a week following completion of the CE. The candidate and the SC should meet within a month to discuss options available to the student. Normally, the student will be able to submit and defend a M.Sc. thesis resulting in a Master's degree (see Section XIV).

Thesis Examinations (M.Sc. And Ph.D.)

M.Sc. Thesis Examination:

Please visit thesis examination date information at: 🗷 <u>Master's Degree – Thesis (https://graduate.mcmaster.ca/masters-degree-thesis)</u>

Students are required to submit to the graduate assistant a completed "M.Sc. Approval to Submit Thesis For Oral Defense" form indicating approval by a majority of the examination committee that the thesis is ready for formal defense. This form may be obtained at:

M.Sc. Approval to Submit Thesis For Oral Defense (http://macdrive.mcmaster.ca/f/b87882e180ec471a80ed/)

The examination committee normally consists of three (or more) members of the Department of Biology including the supervisor. These committee members must be "research-stream" faculty. One of these (other than the supervisor) is designated to be Chair of the examination.

Please note: Additional committee members may be included assuming they meet the above criteria. Such members could vote on the student's performance as well. A member who does not meet the above criteria, including teaching/CLA faculty, could still serve on the committee, but will not be recorded on the M.Sc. examination forms, unless approved in writing by the Dean of Science and Dean of the School of Graduate Studies.

The "Chair" selection is discussed between the student and supervisor and this information must be communicated to the Associate Chair (Graduate Studies) and approved in advance:

- **1** The following seminar information should be provided to the Chair of BGSC two (2) weeks in advance to obtain formal approval of the M.Sc. thesis examination process. Please ensure to carbon-copy the Academic Program Assistant (Graduate) at <u>biolgrad@mcmaster.ca (mailto:biolgrad@mcmaster.ca.)</u>.
 - · name of student
 - supervisor
 - examination committee members, including Chair of M.Sc. Defence
 - seminar title
 - · date of presentation
 - · location and time
 - lay abstract 100 words maximum (a new requirement)

The School of Graduate Studies is now tracking Masters defences in Mosaic. It is mandatory for students to initiate the process listed below after their defence date is confirmed.

NEW THESIS INITIATION IN MOSAIC:

- Login to MOSAIC
- · Student Center
- Academics Section
- Drop-down menu Select THESIS INTENT DEFEND THESIS
- REVIEW: Your Committee Members inform Academic Program Assistant (Graduate) if revisions are required.
- ADD: Defense details (Date, Time, Location and Abstract)
- SUBMIT: Review information
- CLICK: SUBMIT AGAIN
- Student will receive a confirmation email. Academic Program Assistant (Graduate) should be informed of this completion promptly by email at ☑ <u>biolgrad@mcmaster.ca</u> (mailto:biolgrad@mcmaster.ca)
- If there are issues with this process, the student is to inform the Academic Program Assistant (Graduate Studies).

The student submits his/her thesis to the examination committee giving them a minimum of a weekend plus a week to read the thesis before the defense. In consultation with the supervisory and examining committee, the student is responsible for identifying a date, time and location for the M.Sc. defense.

The oral presentation for the M.Sc. thesis should be 20-25 minutes long including a brief introduction. Focus should be on where the key findings contribute new knowledge to the field of study.

The role of the examination chair is to ensure that the process is fair, and in accord to guidelines.

Any major or minor corrections must be approved by the Chair of the exam, or by the student's supervisor before the student submits the thesis electronically – please visit the SGS website (E Thesis Process) information at:

🗹 https://graduate.mcmaster.ca/masters-degree-thesis (https://graduate.mcmaster.ca/masters-degree-thesis). Please visit the "Submit" tab.

At the conclusion of the defense, the four forms that were previously prepared and distributed to the Chair of the M.Sc. examination by the Academic Program Assistant (Biology) are signed by all committee examiners. All of these signed documents are returned to the Academic Program Assistant for submission to the School of Graduate Studies as a "Service Request" - a process in Mosaic that is completed by the Academic Program Assistant. The final thesis upload (MacSphere) occurs upon completion of the School of Graduate Studies Final Thesis Submission form that is signed by the supervisor. The form is included in the "Service Request" submission.

The School of Graduate Studies then clears the student to graduate. For more details, please contact the Academic Program Assistant (Graduate) at biolgrad@mcmaster.ca (mailto:biolgrad@mcmaster.ca)

Ph.D. Thesis Examination:

A Ph.D. student must receive formal "permission to write" from his/her supervisory committee prior to the preparation of the thesis. The permission can be obtained at a Ph.D. supervisory committee meeting and should be indicated on the Ph.D. supervisory committee report.

When a Ph.D. student has written the thesis and made changes and corrections as suggested by all his/her supervisory committee members, the student initiates the defense process electronically.

There are two processes for PhD thesis examinations:

- i) the accelerated process;
- ii) the traditional process.

Please visit the SGS Calendar - PhD Thesis (https://academiccalendars.romcmaster.ca/content.php?catoid=39&navoid=8156#4-3_thesis_)

For a flow-chart summary, please download the 🖾 " Ph.D. Defense Examination – Time Line Flow Chart (http://macdrive.mcmaster.ca/f/3ce1ad893bf4411196e1/)".

Please review: Thttps://gs.mcmaster.ca/doctoral-degree (https://gs.mcmaster.ca/doctoral-degree)

Once a student has logged onto Mosaic, he/she needs to navigate to "Your Student Centre" and under the "My Academics" tab, please select "other academics", and then select "Thesis Intent-Defend my Thesis" to initiate the process.

▲ IMPORTANT: The process should be initiated online approximately 2-3 weeks before an electronic copy of the thesis will be submitted to the School of Graduate Studies.

Also, please note that an electronic copy is all that is required unless otherwise requested – sometimes the external or internal examiner requires a hard copy. In that situation, the Thesis Coordinator will request one from the student. In this case, the text of the hard-copy version must be the same as that of the electronic thesis, and must be printed on regular quality 8 1/2" x 11" printed paper and back-printed to save paper.

After online initiation, the student's supervisor will be prompted by email to submit to the School of Graduate Studies a list of potential external examiners who are qualified to evaluate the thesis. All other supervisory committee members will be prompted to indicate their approval or rejection of one or more of the proposed external examiners.

It is the student's responsibility to propose a date and time for the defense that is acceptable to both the supervisory committee members who will attend and acceptable in terms of the School of Graduate Studies' scheduling guidelines.

The pre-defense copies of the thesis should be formatted according to the requirements in the Guide for the Preparation of Theses, which is available on the SGS website at:

https://gs.mcmaster.ca/sites/default/files/resources/guide_for_the_preparation_of_masters_and_doctoral_theses-_december_2016.pdf (https://gs.mcmaster.ca/sites/default/files/resources/guide_for_the_preparation_of_masters_and_doctoral_theses-_december_2016.pdf)

As indicated above, the student must arrange a defense date and time that allow for the supervisor and two other supervisory committee members to attend.

It is imperative that the student consult the SGS website for guidance on arranging a defense date. Please visit:

☑ https://graduate.mcmaster.ca/doctoral-degree (https://graduate.mcmaster.ca/doctoral-degree)

Once the supervisor committee members have approved the thesis and the proposed defense date/time, an email is sent to the student indicating that the School of Graduate Studies has received notice of the proposed date/time. If an external examiner has agreed to evaluate the thesis, the thesis has been submitted in a timely manner and the proposed defense date is acceptable according to SGS guidelines, the Thesis Defense Coordinator will recruit the remaining examination committee members.

If there is a problem with the proposed date/time, the student will be contacted directly. The Thesis Defense Coordinator can be reached at x23680 or qthesis@mcmaster.ca (mailto:gthesis@mcmaster.ca.).

If possible, the oral examination will be held in the Thesis Defense Room in the School of Graduate Studies (Gilmour Hall, Room 212/B). If an alternate location is required, it will be arranged by SGS and you will be notified. A data projector is available in the Thesis Defense Room. If a PowerPoint presentation is planned, it is advisable that the student arrange a time to visit SGS before the defense date to be sure that your laptop is compatible with the School's projector.

A chair and one internal examiner are usually recruited by SGS to participate in a Ph.D. defense. The internal examiner is usually a faculty member from outside of the candidate's department/program who is unfamiliar with the student's work. Please note that if the external examiner agrees to attend the defense, an 'internal-external' examiner is normally not recruited. If the external examiner does not attend the defense, their identity will not be revealed to the candidate until the date of the examination. Please note that in rare cases, external examiners prefer to remain anonymous.

When a positive report from the external examiner is submitted to the School of Graduate Studies, a defense notice listing the participants will be sent to the candidate's department in addition to being posted on the SGS website.

The Examination Committee consists of the Supervisor, and at least two Supervisory Committee members, an external examiner (if he/she wishes to attend), and a Chair of the Examination. The Chair of the Examination runs the defense and has no voting privileges. Inclusion of a member to the committee who does not meet the above criteria will require approval from the Dean of Graduate Studies. Information is provided in the School of Graduate Studies Calendar. Please visit: 4.4 Thesis -Selection of Examination Committee (http://academiccalendars.romcmaster.ca/content.php?catoid=20&navoid=3574&hl=%22Examination+Committee)

After the defense, when the student has made corrections and/or revisions, dissertations are submitted electronically on MacSphere (https://macsphere.mcmaster.ca/). The student is then cleared to graduate.

Thesis Copy Submission Requirement And Deadlines

As of July 1992, the requirements for the thesis format have been relaxed. The format of the M.Sc. or Ph.D. thesis may now be either the traditional integrated document or the newer, more liberal "sandwich" (or open-faced sandwich) format building around a series of papers either already published or to be submitted for publications. The "sandwich" format is designed to speed the process of thesis writing and to encourage the student to prepare his/her work for peer-reviewed publications in professional journals.

The precise regulation is:

"The dissertation or thesis will be a coherent document that provides a complete and systematic account of the research accomplished by the writer. If some of the research undertaken expressly for the degree has previously been published or prepared for publication as one or more journal articles, or parts of books, those items may be included within the thesis under the following conditions: there must be material preceding the article or articles which sets the context for the work, and material that draws out the overall implications of the work; if there is multiple authorship of the separate articles, there must be a preface to the thesis that documents clearly the student's contribution to each of the papers, and the student's contribution to the originality of the work, thereby clarifying in what way this work becomes the student's thesis."

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Please visit:

- ☑ https://graduate.mcmaster.ca/masters-degree-thesis (https://graduate.mcmaster.ca/masters-degree-thesis)

If you require further assistance, please contact:

- Frank Coruzzi
- **⊘** Thesis Defence Coordinator
- **9**05-525-9140 x23680
- ☑ E-Mail: gthesis@mcmaster.ca (mailto:gthesis@mcmaster.ca)

All students will be required to upload their dissertations electronically. Further information regarding department regulations regarding copies will be forth-coming.

Final Thesis Submission Deadline:

In addition, students may also choose to have your thesis bound, binding service is available through 🗷 pageforpage.com (http://pageforpage.com/).

Optional Bound Copies – Should the supervisor and/or department require one or more bound paper copies of your thesis, it is the student's responsibility to obtain and distribute these bound copies.

Please ensure that the electronic thesis copy is submitted online at MacSphere (https://macsphere.mcmaster.ca/) in a timely manner to avoid future tuition deductions. Also, please remember to submit the signed documentation to the Academic Program Assistant to be submitted as a "Service Request", a procedure in Mosaic that is completed by the Academic Program Assistant. The final completion deadline date for the 2018-19 academic year is September 30th, 2019.

Review Of Academic Decisions

• Review Of Course Grade:

- a. In agreement with the policies of McMaster University, students are strongly encouraged to contact their Instructor, Chair or relevant Associate Dean of Faculty or Graduate Studies before seeking a review under a formal procedure. It is our experience that a majority of questions can be resolved satisfactorily through informal discussion.
- b. A student who is not satisfied by (a) should apply to a "Re-Read/Re-Assessment" as described in Section III C) of the "Student Appeal Procedures" document. In brief the request is presented on "Form A" to the relevant Associate Dean (Science) of the School of Graduate Studies, who submits a copy of the application to the Chair of V

Graduate Guide - Department of Biology | McMaster University

https://www.biology.mcmaster.ca/graduate/grad-guide.html#announcements

Department. The Chair selects an appropriate reader who may be external to the Department. The Chair provides the reader with a copy of the student work and protects "the anonymity of the student and impartiality of the reader by ensuring that all identifying material, along with the original instructor's comments and markings, has been removed"5. Results of the re-assessment are provided within three weeks of submission and are communicated to the Associate Dean of the School of Graduate Studies. The Associate Dean notifies the student and Instructor of the decision in writing. The results of a formal re-read/re-assessment are final and cannot be appealed.

c. Under exceptional circumstances, an Instructor may approve an extension for the student for completion of the work and assign a grade of "Incomplete" (INC). This extension is generally in the range of a few weeks or less. The student must then complete the assignment in a timely manner and have the INC grade cleared by the deadline indicated by the Instructor.

Withdraw On Academic Grounds:

- a. All decisions to withdraw a student from the graduate program are reviewed by the Chair of Biology and Associate Chair (Graduate Studies). This decision must be approved by the School of Graduate Studies.
- b. The recommendation of the graduate supervisory committee regarding a student failing a course must be approved by the Associate Chair (Graduate Studies). In addition, the decision to allow students with a failed course grade to remain in the program is submitted to and must be approved by the School of Graduate Studies.

Statement Of Academic Dishonesty

The Department of Biology considers academic dishonesty to be a very serious matter.

All graduate students are required to complete SGS #101- Academic Research Integrity and Ethics within twelve months of enrolling in the program.

Instructors will seek to identify instances of academic dishonesty and bring cases to the attention of the Academic Integrity Officer. The penalty for academic dishonesty is high. We have prepared the following guidelines to ensure that you are aware of what the Department of Biology considers breaches of academic integrity. (See section 6.1 (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%22Academic+Integrity%22&returnto=search#6.1_Academic_Integrity) in the Graduate Studies calendar). As a teaching assistant, you will also be expected to enforce these regulations and report any instances of academic dishonesty which you detect to the course supervisor.

A. Deliberate Cheating:

Examples include:

- Use of unauthorized aids during an exam.
- Alteration of an exam after it has been returned and claiming that the altered sections were present in the original exam script.
- · Alteration of the marks given on an exam and then claiming that the original addition was incorrect.
- · Verbal communication of answers from one student to another during a test.
- Allowing someone else to write an exam in your place.
- Fabrication or falsification of data.

B. Presentation Of Material That Is Not Your Own Work

Examples include:

- Copying an answer from another student during an exam.
- Copying (either directly, or after memorization) from texts, journal articles, lab reports, essays, old exam scripts etc. However, it is permitted to quote a limited amount of text (one sentence, for instance) describing a key principle or seminal idea with appropriate reference citation.
- Submitting essays, drawings, micrographs, cultures or other laboratory results that were prepared or obtained by others as though they were your own.

When in doubt, students should seek advice from their supervisor or members of the Graduate Studies Committee. We also strongly encourage students to visit the web site on academic integrity of McMaster University:

The following section taken from the University web site and replicated with the permission of the Office of Academic Integrity provides a definition of what is plagiarism:

A Plagiarism:

McMaster University defines plagiarism as "the submission of work that is not one's own or for which previous credit has been obtained".

What Does This Mean?

- When writing an assignment you must use your own words and thoughts.
- When you use another person's words you must distinguish the text or material taken from the other source by, e.g., indentation or quotation marks.
- When you use another person's thoughts or ideas (even when not directly quoting them) you must acknowledge they are not your own and cite the source through a footnote or other appropriate form of reference.
- If you are paraphrasing what another person has said, you must use completely different language, essentially re-writing it. Altering a sentence or paragraph slightly is not appropriate. When paraphrasing a reference notation is still required.
- Thoughts or ideas can be gathered from many sources, e.g. articles, the internet or interviews. You must acknowledge any thought or idea that is not your own regardless of where it came from. If you are unsure how to reference one of these sources, speak to your professor.
- Each professor will have expectations for how you are to acknowledge sources in their course. Often these expectations will be explained in the course outline or in class. You must ask questions if you do not understand what is expected of you.
- The work you do for each course must be unique to that course. Submitting an assignment that has already been graded in another course is considered plagiarism. The only way you can use previous work is to gain the permission of the professor in the second course.
- If you are unsure whether or not to reference something, do so anyway. The consequences for plagiarism are serious so it is best to be cautious.

Why Is This Important?

The main purpose of a university is the pursuit of knowledge and scholarship. This requires the integrity of all members of the University community. As a student at McMaster University you are expected to practice intellectual honesty and to fully acknowledge the work of others by providing appropriate references. Scholars do not take credit that is not earned. Academic dishonesty is destructive to the values of the University; furthermore, it is unfair and discouraging to those students who pursue their studies honestly.

C. Aiding Other Students To Commit An Act Of Academic Dishonesty

This includes not only giving unacceptable aid to students taking a course at the same time you are taking the course, but also providing the means whereby students in future may cheat. Examples include:

- Writing an exam or completing an assignment for someone else.
- Assisting another student to cheat by making it possible for that student to see your exam.
- Discussing an exam that you have just completed with students from other sections that have yet to write the exam.

Students should be aware that by providing their laboratory reports, essays or exam scripts to another student they may be helping that student commit an act of academic dishonesty.

As a teaching assistant, you must be very careful not to give unacceptable aid to your student or to show favoritism in any way in the assignment of marks. Furthermore, the marks assigned to the student must be the same as the marks submitted to the instructor. Otherwise, these acts also constitute academic dishonesty.

Further regulations affecting graduate students such as "Code of Conduct" (6.2) (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%22Code+of+Conduct%22&returnto=search#6.2_Code_of_Conduct); "Appeal Procedures" (6.3) (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%22Code+of+Conduct%22&returnto=search#6.3_Appeal_Procedures); and "Ownership of Student's Work" (6.4) (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4664&hl=%226.4%22&returnto=search#6.4_Ownership_of_Student_Work), can be reviewed from the School of Graduate Studies Graduate Calendar.

Request To Be Full-time Off Campus

- 1. Full-time students are obliged to be on-campus, except for vacation periods or authorized off-campus status, for all three terms of the university year. In cases of unauthorized absence, the student will have to petition for readmission. The appropriate Faculty Committee on Graduate Admissions and Study will rule on each request. There is no guarantee of readmission or of renewal of financial arrangements.
- 2. Students who plan to be absent from campus for more than TWO WEEKS during the Fall or Winter terms OR FOUR WEEKS in the Summer term require permission from the Department and the appropriate Associate Dean of Graduate Studies on behalf of the Faculty Committee on Graduate Admissions and Study.
- 3. Permission to be full-time off-campus will not be given for a period longer than ONE YEAR.

Procedure To Be Followed:

- 1. Each request to be full-time off-campus should be forwarded by the Department to the School of Graduate Studies not later than one month prior to the date on which it is hoped the recommendation will be effective. If necessary, instructions regarding the mailing of graduate student pay cheques should also be provided to the School of Graduate Studies.
- 2. Sufficient information should be provided so that the Associate Dean or committee members have a sound basis for arriving at a decision. Otherwise, approval of the request may be delayed or denied.

*Off-campus forms can be downloaded at:

https://gs.mcmaster.ca/sites/default/files/resources/full_time_off_campus_request_form_-_revised_july_2017.pdf (https://gs.mcmaster.ca/sites/default/files/resources/full_time_off_campus_request_form_-_revised_july_2017.pdf)

Upon completion by student and supervisor, including signatures, the form must be submitted to the Biology Graduate Studies office for the Associate Chair's review, approval and signature. Upon final completion of the form, it is submitted to the School of Graduate Studies by the Academic Program Assistant (Graduate). As always, please ensure that you have a copy of the form before submission to the Biology Graduate Studies office.

Work Alone Policy

All graduate students who work alone must review the following: A http://www.workingatmcmaster.ca/med/document/RMM-304-Working-Alone-Program-1-36.pdf (http://www.workingatmcmaster.ca/med/document/RMM-304-Working-Alone-Program-1-36.pdf)

Please download, review, complete and sign laboratory template working alone form at:

http://fhs.mcmaster.ca/safetyoffice/forms_and_records.html
http://fhs.mcmaster.ca/safetyoffice/forms_and_records.html

1 This information must be submitted to the Main Office in Life Sciences Building – Room 218.

Off-campus Requirements

Students are encouraged to communicate with their supervisor in advance regarding upcoming off-campus requirements (e.g., possible extended vacation).

Full- Time students are obliged to be on campus, except for vacation periods or authorized off Campus status, for all three terms of the university year. Vacation entitlement is discussed in Section 2.5.8 (http://academiccalendars.romcmaster.ca/content.php?catoid=25&navoid=4667&hl=%22Vacation+Entitlement%22&returnto=search#2-5-8_vacations).

Any absence of one week or longer from campus, which is not part of the student's vacation entitlement requires the supervisor's approval. If the absence exceeds two weeks, the approval of the department chair is also required. In accordance with government regulations (see Section 2.5.2 (http://academiccalendars.romcmaster.ca /content.php?catoid=25&navoid=4667&hl=%22Vacation+Entitlement%22&returnto=search#2.5.2_Provincial_Definition_of_Full-_and_Part-time_Status)) students who will be absent from campus for more than four weeks in any one term require not only permission from the Department but also that of the appropriate Associate Dean of Graduate Studies.

Note that this permission is needed even for field work or study elsewhere in the world, in order to allow the University to comply with the regulation requiring that a written explanation for such absences be lodged in the Graduate School office. Students may arrange, through the Department and the Associate Dean of Graduate Studies, to be "full-time off-campus" for periods of up to a year. In cases of unauthorized absence, the student will be deemed to have withdrawn voluntarily from graduate study and will have to petition for readmission. No guarantee of readmission or of renewal of financial arrangements can be made.

Announcements

- 2019-20 Biology Graduate Research Day February 20, 2020
- 2018-19 Annual Biology Graduate Achievement Awards Date of application deadline to be announced.
 - o Research Communication
 - o Research Publication
 - Service Leadership
 - o Teaching Assistantship Award
- Exit Interview and Feedback voluntary participation sent for feedback upon completion of graduate studies.

← Go Back