



Master's Student Handbook

Academic Year 2026 - 2027

Mellon College of Science
Department of Biological Science

Master of Quantitative Biology &
Bioinformatics

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SECTION 1: Welcome & Introduction

The directors of the Department of Biological Sciences would like to welcome you to the Master's in Quantitative Biology and Bioinformatics (MSQBB) program at Carnegie Mellon University! This document also governs the Advanced Study degree option. The Department of Biological Sciences has prepared this statement of policies and procedures to address questions students may have as they enter the MSQBB program. The document specifies requirements that must be achieved to be a student in good standing; failure to meet any of these requirements may result in dismissal from the program.

While this handbook is specific to your academic experience in the MSQBB program, it is just one element of the Graduate Student Handbook Suite. There are several other resources within the suite that you should consult when needed:

[University-Wide Graduate Student Handbook \(Office of Graduate & Postdoctoral Affairs\)](#) (this is only for graduate students at CMU and covers academic and administrative policies at the university level).

[The Carnegie Mellon Student Handbook](#) (this is for all CMU students - undergraduates and graduates, and focuses on university-wide policies that affect student life (student rights and responsibilities, community standards, and the student code of conduct, etc.))

SECTION 2: Program Mission

The MSQBB program seeks to provide students with a basic science background who haven't yet had quantitative training with skills to enter careers in Bioinformatics and related fields, or to gain quantitative skills to help them in the next steps in their education and professional development. The curriculum provides both breadth and depth of training in Quantitative Biological Data Analysis and Bioinformatics skills. Interested students are also given opportunities to pursue research. Our graduates are prepared for rewarding jobs in industry or to pursue further degrees at top universities.

SECTION 3: Degrees offered

The degree title is Master of Science in Quantitative Biology and Bioinformatics.

The degree title is Master of Science in Quantitative Biology and Bioinformatics - Advanced Study.

Note: Immigration changes may impact an F-1 or J-1 student's ability to change their academic program, even if allowed to by the program. Students on F-1 or J-1 documents should proactively consult with OIE when considering a program change.

SECTION 4: Personnel

Departmental Personnel

Yongxin (Leon) Zhao, Ph.D.

Director, MSQBB

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Overall Program Management, Academic Integrity Issues, Leave of Absence Approval

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Assistant Director for MSQBB & Associate Department Head for Graduate Affairs

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Academic Advising and Course Selection, Periodic Academic Progress Checks, Change to P/F, Research for Credit, Graduation Certifications, Student Life Issues, International Student Issues, Oral Communication Skills, Alumni Networking, Bioprocessing Optimization, Entrepreneurship, and Regulatory Compliance and Social Events, Career Center and Industry Liaison, Diploma Ceremony, Overall Program Management, CPT authorization

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Department Head

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Director, Graduate Operations

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Graduate Program Management, Student Recruiting and Enrollment, University Groups Liaison, Graduate Database Management, Commencement Coordination

Ryan Parrotte

IT Support Consultant

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Server Administration, Computer and Network Support, Web Database Management, Hardware, Software Training, Computer and Software Purchasing

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Department Finances, Grants, Operating Budgets, Purchase Orders, Billing, Policy & Compliance Advising

Jaime Kosnosky

Employment Processes Manager

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Postdocs Job Posting (Interfolio), Hiring and Reappointments, Visitor Processing, Visa Processing, Mellon Institute Building Access

Ashley Carman

Senior Sponsored Research Administrator

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Proposals, Funding Opportunities, Pre-Award Sponsor Requests (JIT, Revised Budget)

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*Assistant to the Department Head, Faculty Promotion and Tenure Cases, General Departmental Inquiries,
Departmental Seminar Coordinator, Purchasing Card Verifications*

Tina Rankin
Associate Buyer

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Reimbursements, Purchase Orders, Vendor Payments

College-Level Contacts

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University-Level Contacts

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Student Affairs Liaison

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SECTION 5: Departmental Resources

5.1: Copy Machine Availability

The [Libraries](#) offers a list of printers, scanners, and copiers available at each location. Step-by-step instructions are posted at the machines. Mellon Institute has one printer (B&W), one printer (COLOR), and two scanners.

5.2: Lab/Office/Studio Space

Not applicable.

5.3: Key/Access Card Distribution

Key access is discussed with your Research Advisor and their lab.

Once you receive your CMU ID, complete this [form](#) to gain after-hours and loading-dock access to the Mellon Institute.

5.4: Purchasing and Reimbursement Procedures and Policies

The university has detailed and strict policies relating to the purchase of goods, services, equipment, etc., whether using general ledger accounts, restricted accounts, or grants. There are also reimbursement policies and tax-exempt considerations. If graduate students make purchases, they must be aware of the department's protocols and work with the business manager.

5.5: Department Office/Building Security, Repairs and Services

Contact FMS immediately at 412-268-2910 in case of emergency. Contact the PI (or Glassware Facilities Manager for common equipment) and email the Department Head and Building and Facilities Manager to report damage, needed repairs and/or security concerns.

5.6: Student Academic Responsibilities

Student responsibilities include consistent attendance and participation in the following activities:

- The Graduate Student Assembly (GSA representative)
- Social Events

5.7: Student Committee Work

Participation in committees is essential to being a good citizen of the department. Students are encouraged to work in one or more of the following committees:

- The Graduate Student Assembly (GSA)
- Social Events
- In addition, students may request occasional help on an ad hoc basis. Student participation in any of the above is very much appreciated.

5.8 Department Approach to Press and Media Relations

Contact MCS Communications at mcs-communications@andrew.cmu.edu and University Communications and Marketing (UCM) at media-relations@andrew.cmu.edu. All official university statements, news releases, and media responses related to crises or emergencies are coordinated through UCM.

If a reporter contacts you: Ask for their name, media organization, contact information, the reason for their inquiry, and their deadline. Let them know that you or a UCM representative will follow up. Do not feel pressured to respond immediately. You are not required to provide a statement on the spot.

5.9 Department/College/University Brands and Logos

For brand strength, recognition, and retention, it is important that Carnegie Mellon University maintain a consistent use of brand identity elements. The brand.cmu.edu website has up-to-date information and resources related to the creation and use of all logos and unit marks.

SECTION 6: Advising

6.1: Role of the Steering Committee

The MSQBB Steering Committee plays a central role in the students' academic, research, and professional development.

The role and expectations of the students include how often you will meet, the reasons for meeting, and what to bring in preparation for the meeting. This helps establish a successful relationship.

6.2: Advisory Committee Collaboration

Before each semester, each student must share their plan with the MSQBB Steering Committee. All changes must be approved by the Assistant Director (Academics).

Students who have specific concerns about their progress are urged to speak with the Assistant Director (Academic Advising) as early as possible. The Assistant Director (Academic Advising), along with members of the MSQBB Steering Committee, meets with the student at least twice a year to provide guidance and monitor the student's overall progress. In addition, the Assistant Director (Academic Advising) meets with the student as and when needed to discuss progress and resolve issues.

6.3: Review/Redress of Academic Issues

If the MSQBB Steering Committee determines that a student is making inadequate progress, it will notify the student in writing of the deficiencies and the consequences of failing to correct those deficiencies. Any student whose cumulative QPA is at or below 2.5 after one term or who is otherwise not making satisfactory progress toward their degree will receive a letter from the program placing

them on academic probation. Under most circumstances, the student will be given one semester to earn a B average in the courses that will be counted toward the degree. Additionally, students who don't earn minimum required grades in any classes (B- or higher in foundation classes or C or higher in other classes counting toward the degree will also be placed on academic probation. Other cases may occur and will be reviewed by the department head along with justifications for the probation or other academic action.

Academic probation will end only when the student returns to a B average and fulfills the other requirements outlined in their probation terms. Failure to return to good academic standing after one semester of dismissal from the program or other actions as decided upon by the administration of the program.

A student not satisfied with the achieved resolution may file a formal written appeal to both the Associate Dean for Graduate Affairs and the Dean of the Mellon College of Science.

For the University policy, please refer to the [Summary of Graduate Student Appeal and Grievance Procedures](#) for connection to university policy and procedures.

6.4: Academic Integrity for Program

QBB course instructors set specific policies for every assignment in their course. Instructors typically state in their syllabus what types of collaboration are allowed or not allowed on different assignments. However, students are responsible for making sure they understand what kind of collaboration is allowed or not. If you are not 100% certain about what is permitted on an assignment, do not start working on it until you have contacted the instructor to clarify. Unintentional violations of course policy are treated as violations of academic integrity and can result in course-level and program-level penalties.

In addition to any course-level actions taken by instructors (e.g., assigning a failing grade on the assignment or failing the entire course without the option to withdraw), the program directors or the university may impose additional consequences. More information can be found here:

<https://www.cmu.edu/student-affairs/ocr/students/index.html>

In most cases, two violations (and in some cases, a single violation that is severe or when the student lies about the facts of the case) are grounds for dismissal from the MSQBB program.

Students may appeal whether a violation occurred and the course- and/or program-level outcomes following University procedures: <http://www.cmu.edu/academic-integrity>.

Note that university policies about academic integrity are subject to change, and students should review current procedures each semester.

In addition to any course-level actions taken by instructors (e.g., giving the student a failing grade on the assignment or failing the entire course without the option to withdraw), the program co-directors will impose penalties for academic integrity violations. Program-level consequences may include any or all the following: probation (see section 9.7, Satisfactory Academic Standards below); suspension for one or more semesters dismissal from the program; required additional training on academic integrity; or other action as decided upon by the administration of the program.

The program administration will determine the consequences for violations of academic integrity or other

program polices on a case-by-case basis, considering a variety of different factors, including:

- The severity of the violation, including factors such as the number of assignments in question, the weight of those assignments in the course, the type of violation, fraction of the assignment in question that violated course policy, overall impact of the violation on the academic environment in the course, impact of the violation on the academic environment in the program and university in general, and other factors determined by the two program co- directors.
- Whether a student has had an academic integrity violation in the past
- Lying about the facts of the violation or fabricating evidence to cover up a violation

In most cases, two violations (and in some cases, a single violation that is severe or when the student lies about the facts of the case) are grounds for dismissal from the MSQBB program.

SECTION 7: Master's Degree Requirements

7.1: Residency Requirements

U.S. government regulations require F-1 and J-1 international students to be enrolled in an in-person degree program, with in-person expectation coursework. Even though this immigration requirement is specific to international students, residency requirements for a degree program must be consistent for both international and domestic students.

7.2: Registration Process

Incoming students will work with the Assistant Director over the summer to prepare for their fall courses. The 4 Easy Steps to Registration are available at <https://www.cmu.edu/hub/registrar/registration/index.html>.

- To be in good standing, students must be full-time, meaning they must take at least 36 units per semester.
- Requests for part-time status are only granted in rare, extenuating circumstances.
- Students are advised to take no more than 48 units in any semester.
- Requests to take more than 48 units require approval from the Assistant Director. Students need to meet all the following criteria: (1) have a QPA above 3.50, (2) justify the value of the added coursework to their goals, (3) show how they will balance the added work in their weekly schedule, and (4) justify the need to take the extra courses in the requested semester and not delay the class to a later semester.

7.3: Required Units for Degrees in QBB and QBB - AS

Before beginning courses, all students are required to satisfactorily complete an academic integrity instructional module, as prescribed by the Steering Committee.

The university's complete Schedule of Classes is available at www.cmu.edu/hub.

To receive the M.S. in QBB (not advanced study) degree, students must successfully complete these requirements:

1. At least 90 units of coursework, which includes courses in specific categories as listed below
2. Average grade of B or above (GPA = 3.0) in those 90 units counted toward degree certification
3. Full-time course registration (at least 36 units) for each semester in the program

4. Required Courses (34-36 units)

Minimum C grade in each course counted toward graduation.

- A. 38-613: Communication & Professional Issues (6 units, Fall)
- B. 03-701-A1: Statistical Computing for Biological Sciences (6 units, Fall – first half)
- C. 03-702-A2: Data Analysis for Biological Sciences (6 units, Fall – second half)
- D. Programming (10-12 units, one of the following)
 - 02-601: Programming for Scientists (12 units, Fall)
 - 15-110: Principles of Computing (10 units, typically Fall but Spring option exists)
 - 15-112: Fundamentals of Programming and CS (12 units, typically Fall)
- E. 03-713-A4: Bioinformatics Data Integration Practicum (6 units, Spring – second half)

5. Core Elective Courses (12 units from the list below)

Minimum grade of C in each course

- 02-604: Fundamental Bioinformatics (12 units, Spring)
- 02-719: Genomics and Epigenetics of the Brain (12 units, Fall)
- 02-731: Modeling Evolution (12 units, Spring)
- 03-709: Applied Cell & Molecular Biology (Fall)
- 03-711: Computational Molecular Biology and Genomics (Fall)
- 09-615: Computational Modeling, Statistical Analysis and Machine Learning in Science (Fall)

6. Graduate Biology Electives (12 units)

Minimum C grade in each course

03-6xx, 03-7xx, or 03-8xx courses

7. Other biology-relevant graduate courses (30-32 units)

NOTE: If 02601 was waived with a placement exam, you must take 12 extra units of this.

Minimum C grade in each course counted toward graduation.

These can be graduate-level courses in Biological Sciences (03-6xx, 03-7xx, or 03-8xx) or Computational Biology (02-6xx, 02-7xx, 02-8xx). Courses from other departments may be counted only with written permission from the Steering Committee.

MSQBB-AS

To receive the M.S. QBB - AS degree, students must successfully complete these requirements:

1. At least 114 units of coursework, which includes courses in specific categories as listed below
2. Average grade of B or above (GPA = 3.0) in those 90 units counted toward degree certification
3. Full-time course registration (at least 36 units) for each semester in the program

4. Required Courses (34-36 units)

Minimum C grade in each course counted toward graduation.

- A. 38-613: Communication & Professional Issues (6 units, Fall)
- B. 03-701-A1: Statistical Computing for Biological Sciences (6 units, Fall – first half)
- C. 03-702-A2: Data Analysis for Biological Sciences (6 units, Fall – second half)

- D. Programming (10-12 units, one of the following)
- 02-601: Programming for Scientists (12 units, Fall)
 - 15-110: Principles of Computing (10 units, typically Fall but Spring option exists)
 - 15-112: Fundamentals of Programming and CS (12 units, typically Fall)
- E. 03-713-A4: Bioinformatics Data Integration Practicum (6 units, Spring – second half)

5. Core Elective Courses (24 units from the list below)

Minimum grade of C in each course

- 02-604: Fundamental Bioinformatics (12 units, Spring)
- 02-719: Genomics and Epigenetics of the Brain (12 units, Fall)
- 02-731: Modeling Evolution (12 units, Spring)
- 03-709: Applied Cell & Molecular Biology (Fall)
- 03-711: Computational Molecular Biology and Genomics (Fall)
- 09-615: Computational Modeling, Statistical Analysis and Machine Learning in Science (Fall)

6. Graduate Biology Electives (24 units)

Minimum C grade in each course

03-6xx, 03-7xx, or 03-8xx courses

7. Other biology-relevant graduate courses (30-32 units)

NOTE: If 02601 was waived with a placement exam, you must take 12 extra units of this.

Minimum C grade in each course counted toward graduation.

These can be graduate-level courses in Biological Sciences (03-6xx, 03-7xx, or 03-8xx) or

Computational Biology (02-6xx, 02-7xx, 02-8xx). Courses from other departments can only be counted with written permission from the Steering Committee.

Notes on Courses

- Up to 12 units of research (03-699) with a faculty advisor may be counted toward the depth credits. Research should be approved by the Assistant Director (Academic Advising).
- Any course not listed above will need written approval from the Assistant Director (Academic Advising). The request will be evaluated based on relevance to program educational goals and absence of equivalent pre-approved courses.
- CMU undergraduate students enrolling for a continuing M.S. can use relevant courses from their undergraduate years to count toward the M.S. degree. The courses used toward the M.S. degree CANNOT be counted toward undergraduate degree certification. Undergraduate degree advisors need to verify and sign the Declaration of Carry-Over Credit form to confirm that no double-counting has occurred.
- All elective courses in Biological Sciences and other Departments have limited space, and some courses may not have space for all students who want them. Every effort will be made to help students get into appropriate and relevant elective courses.

Important Rules for Coursework

- All student course selections are subject to the approval of the MSQBB Steering Committee.
- Students must maintain full-time enrollment in the program (a minimum of 36 units per semester; the only exception is when CMU Student Affairs and/or a medical provider requests that a student be allowed to take a reduced course load).
- Optional summer internships for course credit (with CPT authorization) may be counted toward

elective credit for students in the MSQBB-AS program. CPT authorization depends on the regulations set by the Office of International Education. Any internship should be discussed with the Assistant Director of the MSQBB program before applying.

7.4 Program Learning Outcome

- Design a well-crafted resume and be prepared for interviews for internships and jobs.
- Understand the mathematical and computational skills needed to succeed in quantitative biology research and industry.
- Be able to work with a wide range of data sets to answer biological questions.
- Demonstrate proficiency with genomic data analysis.
- Discuss the health implications of medical treatments of applying quantitative biological analysis to research.

7.5 Other Courses & Electives

Courses

• Professional Skills Course

Professional Skills (38-613) meets weekly. This course offers students the opportunity to learn about available resources on and off campus, share knowledge, and hone their professional skills. The primary goal is to position students for on-time graduation and to equip them with the essential tools to secure an internship, secure a job, or pursue a Ph.D.

• Summer Courses

Students registering for summer courses must pay summer tuition (including the Quantitative Biology Internship 03-602-I). Before registering for these summer courses, students should check with the Assistant Directors about tuition.

Electives

• Seminars, Invited Talks, and Journal Club

Each semester, all students may register for and attend the weekly seminars (Graduate Research Seminar 03-655, 3 units). Graduate students are strongly urged to meet the speakers to broaden their knowledge of cutting-edge science and make useful contacts; the faculty host can arrange individual or small-group meetings for interested students.

Note: The above seminar courses are pass/fail; however, students may apply up to 3 seminar units toward graduation units as Biological Science Graduate Electives. These courses are very beneficial for staying current with research and networking, so we encourage students to enroll, particularly if they are interested in pursuing a Ph.D. or another advanced degree.

Invited talks from outside speakers and alums are arranged throughout the year. They will be announced via e-mail.

Summer research in a lab requires you to either be paid (as a CMU employee) or to register for a

course. Most students prefer to be employed, but if you want to get course credit for summer research, please ask the program advisors.

7.6 Department Policy on Double Counting Courses

No courses may be double counted.

7.7 Department Policy for Courses Outside the Department/College

Students may enroll in courses outside the Department of Biological Sciences with permission from the Steering Committee. Space in courses outside of the Department of Biological Sciences (including space in Computational Biology courses) is not guaranteed. A student may not register for courses without first verifying with the instructor that all required background knowledge has been met. This can be either through CMU prerequisite courses or by discussing relevant background with the instructor and obtaining written confirmation that the background knowledge meets expectations. Students must also verify that all degree requirements are satisfied or on track to be satisfied before registering for classes in other departments. Furthermore, with the exception of other MCS departments and computational biology courses, no student may register for a course from another department during the first semester of study.

7.8 Course Exemptions

The following courses are not open to students in the MSCB program: 03-742 (substitute with 03-642), 03-744, 03-747, 03-750, 03-755, 03-762 (substitute with 03-662), and 03-900. Also, the following courses have limited space and require special permission: 03-740, 03-741, and 03-751. Finally, 02-620 (machine learning) is not a typical part of the MSQBB or MSQBB-AS curriculum. However, it can be taken as any other Computational Biology course (see notes above in sections 7.3 and 7.7).

7.9 Protocol for Evaluation of Transfer Credit

The MSQBB program does not accept transfer credits.

CMU undergraduate degree holders, please refer to the carry-over course credit details.

7.10 Teaching Requirements/Opportunities

No students are required to teach or TA.

7.11 Research Requirements/Opportunities

Research

Students interested in conducting research for academic credit take M.S. Research 03-699 with a Biological Sciences faculty mentor.

- Up to 12 units of 03-699 may be counted toward the degree.

Typically, students contact faculty directly to learn about available research opportunities. To register for this class, please contact the Assistant Director (Academic Advising & Internship), who will assist with registration.

Some faculty members may be willing to pay for research assistantships. You can receive either research credit or pay for research in a given semester, but not both.

7.12 Internship/Co-op Requirement and Opportunities

Internships (MSQBB-AS Only)

Students often secure internships in industry or academia during the summer between the first and second years, and less frequently during the academic year. The internship must be relevant to Quantitative Biology and Bioinformatics. Students must contact the Assistant Director in late fall to plan an internship.

International students

If doing a paid summer internship off campus, you must contact the Office of International Education (OIE) for:

- CPT (Curricular Practical Training, <https://www.cmu.edu/oie/employment/f1-students/curricular-practical-training.html>) or
- Pre-Completion OPT (Optional Practical Training, <https://www.cmu.edu/oie/employment/f1-students/opt-stem-opt-extension/pre-completion-opt.html>)
- You are not eligible for CPT or OPT until the summer after your first full academic year. The internship must be relevant to your program.

7.13 Thesis (Optional)

BEFORE BEGINNING: Students who wish to do a Master's Thesis should find a research lab. To complete a thesis, a student must work at least 1 semester (typically 1 semester plus a summer) in a research lab before beginning their last semester in the MS program. The following steps will begin before the program's last semester and continue through the weeks leading up to degree completion. Students who want to have help finding a research lab should contact the Assistant Director (Academics). Please review the [Research Thesis Requirements and Timeline](#).

7.14 Research Honors

The directors of the MSQBB program confer awards for academic achievement, research honors, professional honors, and outstanding leadership at graduation. Students maintaining a GPA of 4.0 or higher will receive an award for academic achievement. Students with substantial research accomplishments, such as a publication or honors thesis, will receive an award for research achievement. Students who make substantial contributions to the MSQBB community, such as serving as a GSA representative or organizing social events, will receive a leadership award.

Suppose you are interested in completing a research-based thesis. In that case, you are required to: (1) complete 12 or more units of an independent research study with a faculty advisor (with QBB

Advising Committee approval), and (2) write and defend a master's thesis. If you satisfy the above requirements, you qualify for Research Honors.

Students who complete a thesis may register for 03-700 during their final semester.

Full research honors requirements are available from the Assistant Director (Academics). The final thesis should have the following sections:

1. Title page & Dedication/Acknowledgments
2. Abstract (1 page)
3. Introduction chapter (4 or more pages):
 - *Separate from the introduction sections in other chapters
 - *This is a place for the student to put the entire thesis in context
 - *1 or more additional chapters (20 or more pages each).
4. Chapter format should be consistent and may match the format of any journal article in the field of study.
5. Bibliography (pages are enumerated but do not count toward page total). This may be a stand-alone bibliography for the whole thesis, or each chapter may have its own bibliography.

7.15 Requirements for Application/Consideration for Entry into the PhD program

If you're interested in advancing your career in computational biology, biotechnology, or bioinformatics, or in preparing for leadership in scientific research and education, our graduate program is designed to provide you with the skills, experience, and connections to thrive. Our PhD program in Biological Sciences offers comprehensive training in experimental design, data analysis, scientific communication, and teaching.

SECTION 8: Department Policies & Protocols

8.1: Petition Procedures

Suppose the MSQBB Steering Committee determines that a student is making inadequate progress. In that case, it will notify the student in writing of the deficiencies and the consequences of failing to correct those deficiencies. Any student whose cumulative QPA is at or below 2.5 after one term or who is otherwise not making satisfactory progress toward their degree will receive a letter from the program placing them on academic probation. Under most circumstances, the student will be given one semester to earn a B average in the courses that will be counted toward the degree. Additionally, students who don't earn minimum required grades in any classes (B- or higher in foundation classes or C or higher in other classes counting toward the degree will also be placed on academic probation.

Academic probation will end only when the student returns to a B average and fulfills the other requirements outlined in their probation terms. Failure to return to good academic standing after one semester of dismissal from the program or other actions as decided upon by the administration of the program.

8.2: Department Policy for Withdrawing from a Course

To withdraw from a course, a student must consult with their academic advisor before any further steps. Students in this program must maintain at least 36 full-time units, and withdrawing from a course will affect their enrollment status, academic progress, and, for international students, their visa eligibility.

8.3: Requirements for Those Without a Bachelor's Degree in Discipline

Not applicable.

8.4: New Policies / "Grandfather" Policy

Students are to refer to the handbook that is in effect for the academic year in which they entered the program. Any future policies will be applied to all enrolled students. If some of the contact personnel change, students will be notified of those changes in writing.

Other changes and amendments to the handbook after dissemination to students are exceptionally rare. In these cases, the new policies will be communicated in writing to all current students with a requirement that the students acknowledge the new policies.

The university handbook change policy governs changes to the university handbook.

Additionally, if any internal inconsistencies are found within the handbook, the program will clarify which policy is correct within 1 week of being notified of the inconsistency. Students who have grievances related to any ruling on internal inconsistencies can follow the graduate student grievance procedures.

Finally, if any part of this handbook is found to be invalid or unenforceable for any reason or in any way, the remainder of the handbook remains effective and binding.

8.5: Time Away from Academic Responsibilities

Graduate students should not assume that their time off follows the academic calendar of courses. Many are coming from an undergraduate environment where their university employment followed their course schedule. For many graduate degree programs, there is an expectation that graduate students continue research during academic breaks and time away from campus, which may or may not be negotiated with the students. Students who are doing research are required to discuss time expectations with their faculty supervisor and their coworkers.

Although University Holidays are also commonly student holidays, students doing research are required to consult their faculty advisor about time away from research during those holidays. For example, if experiments are running that need to be monitored continuously, students should speak with their faculty about arrangements to take an equal number of days off at another time.

8.6: Other Policies and Protocols / Inclusion of Any Variations to University Policies and Protocols

Other Policies and Protocols: As applicable, add policies that are not included here or in the University-Wide Graduate Student Handbook and are not easily accessible on your website.

Inclusion of Any Variations to University Policies and Protocols: As applicable, be clear regarding any department or college (approved) deviations from University Policies and Protocols. For example, if the specific time expected to complete the intended master's degree deviates from the statute of limitations as outlined in the [Master's Student Statute of Limitations](#), indicate those variations here. Typically, any such variations are stricter at the department or college level, e.g. minimum grades for passing, standards for academic standing, shorter time to degree, etc. Regardless, any and all variations must be approved by the Provost's Office and/or the Office of General Counsel depending on the nature of the variation (e.g. academic versus procedural).

SECTION 9: Grading & Evaluation

9.1: Grading Scale/System

The department follows the Graduate Grading Standards provided by the university's [Grading Policy](#). The grading standard for +/- grades applies to all students classified as seeking a graduate degree and to special students taking graduate courses. Specifics for how grades will be assigned are determined by course instructors. Questions should be addressed to course instructors no later than the end of the second week of classes.

9.2: Department Policy on Grades for Retaking a Course

When a course is repeated, all grades will be recorded on the official academic transcript and will be calculated in the student's QPA. This is the case regardless if the first grade for the course is a passing or failing grade.

9.3: Department Policy on Pass/Fail, Satisfactory/Unsatisfactory

Pass/Fail Courses

Students may elect to take a course Pass/Fail, with a petition and approval from the Assistant Director (Academic Advising). Pass/Fail courses are strongly discouraged and are not counted toward the degree in the student's program of study. Such a petition must provide a compelling reason for taking a course Pass/Fail and defend why that will not impact the student's program of study (i.e., a medical hardship in completing a course).

Taking a course for credit indicates an intellectual commitment to the material and may be viewed more positively by other professors and potential employers than a Pass. Potential employers gain more information about a student's ability from seeing a letter grade on a transcript than from a P. Except for 06-602 Bioprocessing Optimization, Entrepreneurship, and Regulatory Compliance in Biotechnology and Pharmaceutical Engineering, Pass/Fail courses cannot satisfy any MSQBB program requirements or prerequisites.

The student must complete the Pass/Fail Approval Form** during the registration ADD period (the first two weeks of each semester) and receive permission from the Assistant Director (Academic Advising) and the Department Head (Biological Sciences). Switching a course to Pass/Fail mid-semester is generally approved only under special circumstances.

- Prerequisites may not be taken Pass/Fail.
- Classes taken Pass/Fail may not be used to fulfill graduation requirements, except for seminar courses.
- Pass/Fail status is irrevocable.

Satisfactory/Unsatisfactory Courses

Not applicable.

9.4: Department Policy for Incompletes

Students are not permitted to take incompletes.

Carnegie Mellon students are expected to complete a course during the semester in which it was offered. However, if the instructor agrees, a grade of I (incomplete) may be given when a student, for reasons beyond their control, has been unable to complete the coursework. Still, the work completed to date is of passing quality, and the grade of incomplete provides no undue advantage to that student over other students.

In awarding an I grade, an instructor must specify the requirements for completing the work and designate a default letter grade where no further work is submitted. Students must complete the required coursework no later than the end of the following academic semester, or sooner if required by prior agreement. The instructor must record the permanent grade by the last day of the examination period of that following semester, or Enrollment Services will administratively assign the default grade.

9.5: Independent Study/Directed Reading

Independent study in Biological Sciences is not typically available. It is used whenever a faculty member offers a personal educational experience that doesn't fall under research but is instead a customized course delivered to 1-2 students. Most semesters, no such personalized courses are offered.

In the extremely rare cases of personalized courses offered that meet department criteria for graduate independent study, the course must be thoroughly reviewed by the MS steering committee to count as elective credit and to verify how, if at all, it can count toward the degree. Therefore, it is not guaranteed that graduate independent study in biology will automatically count as biology elective credit for the degree.

Independent study in other departments (including close partner departments such as computational biology, chemical engineering, biomedical engineering, the neuroscience institute, etc.) must also be thoroughly reviewed by the steering committee to determine whether it can be counted as elective credit.

Note that, in addition to independent study being rarely available, the majority of independent study classes do not count as degree electives, even when offered in biological sciences or an affiliated department.

9.6: GPA Requirements and QPA Requirements for Graduation

To be in good academic standing, a student is expected to maintain a B average (GPA = 3.0) in coursework that will count toward the degree. No grade lower than B- in foundation course(s) and no grade lower than C in other course categories shall be used to complete degree requirements.

9.7: Satisfactory Academic Standing

Probationary status and returning to good standing

Students can be put on academic probation if one or more of the following conditions occur:

- The student receives below the minimum grade in any course that would fill a requirement or elective toward the degree.
- The student has a semester QPA below 3.0 in any semester.
- The student does not complete a prerequisite course.

The MS program steering committee believes that the student is not making satisfactory progress toward graduation (in this case, the specific reason will be stated in the letter, described below).

If a student is on academic probation, they will be given a letter informing them of the probation before the end of the first week of the semester in which the probation begins. The letter will include the following:

- The reason for probation.
- The steps the student must take while on probation to avoid any further academic action (such as suspension or dismissal from the program), e.g., regular meetings with advisor, showing completed homework assignments, regular meetings with TA's, etc.
- The academic outcomes the student must achieve during the semester of probation to be taken off probation, e.g., achieving certain minimum grades in individual courses and/or overall average QPA requirements at mid-semester and/or at the end of the semester of probation.
- Any other information the committee wishes to communicate to the student.

Suspension and return to program

If a student does not complete the required steps during the probationary semester, the steering committee will discuss the case internally. In most cases, failure to complete required steps during the probationary semester will result in immediate suspension or dismissal from the program.

What are some reasons for suspension?

- Failure to complete one or more required steps during the semester of probation as laid out in the probation letter: e.g., regular meetings with advisor, showing completed homework assignments,

regular meetings with TA's, etc.

- Failure to complete one or more academic outcomes required during the semester of probation, e.g., achieving certain minimum grades in individual courses and/or overall average QPA requirements at mid-semester and/or at the end of the semester of probation.
- Failure to meet other conditions specified in the initial notification of academic probation. Such as failure to meet regularly with academic advisors. Note that this could even result in suspension taking place before the end of the semester of probation.

Note: Students may appeal probation or may appeal other actions following the procedures outlined in the link to the [Summary of Graduate Student Appeal and Grievance Procedures](#).

9.8: Regular Reviews and Evaluations by Department

The academic advisor regularly reviews students' grades and progress. The academic advisor notes any concerns with progress toward graduation that they see. Any concerns are reviewed with the steering committee. Both the academic advisor and committee are appointed by the department head(s). The department head also makes any reviews/changes to the academic advisor or steering committee. If a student wants to share a concern about the academic advisor or steering committee, then it should be directed to the department head or dean.

If a student has a complaint during a review or evaluation, they can request that the dean or department head allow them to provide input. The Dean or Department Head can review that request and judge whether the student should participate in this review. They will also provide the student with feedback in writing. The timeline of this process will depend on the complexity of the situation. At the start of the process, the student will be notified of the expected timeline.

If the student successfully completes the review or evaluation, the next steps will be provided in writing by the Dean or Department Head upon conclusion of the process.

If the student is not successful, the implications will be provided to the student in writing from the dean or department head upon the conclusion of the process.

If there is an opportunity for re-evaluation, you will need to reference the [Summary of Graduate Student Appeal and Grievance Procedures](#). The graduate grievance procedure also determines timelines for re-evaluation.

If there is an opportunity for appealing an unsuccessful evaluation, please check the [Summary of Graduate Student Appeal and Grievance Procedures](#).

Inadequate progress toward a degree will result in probation and follows the probationary guidelines in the previous section. Below are the criteria for an "inadequate progress toward degree" determination.

- Failure to complete a required course with the minimum required grade.
- Failure to complete a course that is a prerequisite for a required course with the minimum required grade.

- Failure to obtain a QPA of 3.0 or higher in any semester.
- Any other situation that the steering committee identifies and justifies in writing.
- Any of the above can be appealed by the student as outlined in this section and in the section on probation, above.

The student will be notified in writing before the second week of classes in the semester of probation.

A student may appeal a decision of “inadequate progress toward degree” by a written notification of request to appeal to the dean or department head or following graduate grievance procedures.

SECTION 10: Funding & Financial Support

10.1: Statement of Department Financial Support

Not Applicable.

10.2: Stipend

Not Applicable.

10.3: Department Fees

Not Applicable.

10.4: Conference and Research Funding

Students have two opportunities to obtain funding for conference travel and research. The first link provides information on [MSC funding](#), and the second on the [Office of Graduate and Postdoctoral Affairs](#), which also offers funding opportunities.

10.5: Funding Payment Schedule

Not Applicable.

10.6: Additional Sources of Internal & External Financial Support

There are no internal funds.

It is strongly recommended that students refer to the [Funding and Opportunities Fellowships](#) if anything applies to them.

10.7: Availability of Summer Employment

Students are responsible for searching on their own; we do not provide opportunities.

10.8: Department Policy on Outside Employment

Students are responsible for searching. Max 20 hours per week. Non-US citizens are required to obtain valid work authorization.

10.9: Requirements for the Continuation of Funding (if applicable)

Not Applicable.

10.10: Procedure for Written Notification of Change in Financial Support

Not Applicable.

[University Emergency Student Loan](#) There are three forms of student emergency support funding available: emergency student loans, parental loans, and non-qualified scholarships from the Tartan Emergency Support Fund. These funds have been established through the generosity of alumni, trustees, friends of the university, the Undergraduate Student Senate, the Graduate Student Assembly, and student organizations to provide enrolled CMU undergraduate and graduate students with emergency funds. More information about funding options will be provided when you meet with a member of the Office of the Dean of Students to discuss your needs.

The department does not offer emergency support funding.

SECTION 11: ADDITIONAL DEPARTMENTAL INFORMATION

Changing Programs & Multiple Enrollments

If an MSQBB student accepts another program's offer to begin before matriculation in the MSQBB program, the MSQBBB committee reserves the right to nullify the MSQBBB offer.

Note: International Students must understand the visa implications of making these changes. International students must consult the Office of International Education before making any changes.

Additionally, our program is a full-time program, and we reserve the right to disallow students from simultaneous enrollment in a second MS program.

Below are the contents of the [University-Wide Graduate Student Handbook \(Office of Graduate & Postdoctoral Affairs\)](#) (this is only for graduate students at CMU and covers academic and administrative policies at the university level).