



Master's Student Handbook

Academic Year 2026 - 2027

Mellon College of Science  
Department of Biological Science  
&  
College of Engineering  
Chemical Engineering Department

Master of Science in Biotechnology and  
Pharmaceutical Engineering

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# SECTION 1: Welcome & Introduction

The directors and assistant directors of the Master of Science in Biotechnology and Pharmaceutical Engineering (MSBTPE) program, a joint offering from the Biological Sciences and Chemical Engineering Departments, would like to welcome you to the program and Carnegie Mellon University. Both Departments have prepared this statement of policies and procedures to address questions students may have as they enter the MSBTPE 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 MSBTPE 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 MSBTPE program seeks to train the world's best Biotechnologists, Pharmaceutical Engineers, and Bioprocess Engineers at the master's level. The curriculum provides both breadth and depth of training in Biotechnology and Pharmaceutical Engineering. Interested students are also given opportunities to pursue research. Our graduates are prepared for rewarding jobs in industry or to pursue their doctoral degrees at top universities.

## SECTION 3: Degrees offered

The degree title is Master of Science in Biotechnology and Pharmaceutical Engineering.

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

## MSBTPE Steering Committee Faculty

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## **SECTION 5: Departmental Resources**

### **5.1: Copy Machine Availability**

The [Libraries](#) offer 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](mailto:mcs-communications@andrew.cmu.edu) and University Communications and Marketing (UCM) at [media-relations@andrew.cmu.edu](mailto: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](http://brand.cmu.edu) website has up-to-date information and resources related to the creation and use of all logos and unitmarks.

# **SECTION 6: Advising**

## **6.1: Role of the Steering Committee**

The MSBTPE 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 MSBTPE 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 MSBTPE 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 MSBTPE 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**

BTPE 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., 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 of 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 program administration.

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

Students may appeal whether a violation occurred and 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.

## **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 BTPE**

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

University's complete [Schedule of Classes](#)

To receive the M.S. degree, students must complete these requirements:

- A. At least 108 units of coursework, which includes courses in specific categories as listed below
- B. Average grade of B or above (GPA = 3.0) in those 108 or more units counted toward degree certification
- C. Minimum grade of a C or above (GPA = 2.0) in any course that shall count towards degree certification
- D. Full-time course registration (at least 36 units) for each semester in the program

#### **Coursework consists of:**

Foundation Courses (42-60 units)

Minimum C grade in each course counted toward graduation

- 38-613 Professional Skills and Communication (Fall, 6 units)
- 03-622 Modern Biology (Fall, 9 units)
- 03-709 Applied Cell and Molecular Biology (Fall, 12 units)
- 06-621 Material Balances in Bioprocesses (Fall, 9 units)
- 06-685 Bioseparations and Bioprocess Analytical Technologies (Spring, 12 units)
- 06-722 Bioprocess Design (Fall, 12 units)
- 03-776-A3 Molecular Techniques for Bioprocessing (Spring, 6 units)
- 06-775-A4 Analytical Techniques for Bioprocessing (Spring, 6 units)

The MSBTPE Steering Committee may waive 03-622 and/or 06-621. To have a course waived, the student must demonstrate proficiency in the course topics through a placement exam or an interview with an instructor. Placement exams may be offered before the start of the fall semester. If a student

misses a placement exam due to illness or immigration delays, they must contact the committee before the start of classes to schedule a time to take the exam(s) before the end of the first week of classes. Because the total number of units required to graduate is 108, students who waive more than 9 units of foundation course must add a corresponding number of required depth course units (see below). This preserves the degree requirement at 108 units. Students who place out of a foundation course should take an appropriate course approved by the Steering Committee.

Note: The Professional Skills course should be taken during a student's first semester. This Pass/Fail course must be passed to complete the MSBTPE degree.

### **Elective Biological Science Courses (at least 24 units)**

At least 24 units of graduate-level elective courses must be taken from Biological Sciences, 03-XXX listed courses.

### **Elective Chemical Engineering Courses (at least 12 units)**

At least 12 units of graduate-level elective courses must be taken from Chemical Engineering, 06-XXX listed courses.

### **Additional Graduate-Level Elective Course (9-18 units)**

Additional Graduate-Level Elective Courses (12-21 units – depending on whether more than 9 units of foundation courses are waived, see above)

These may be courses from either the Biological Sciences or the Chemical Engineering departments. Other department courses may be used with permission from the Academic Advisor.

**For A, B, C, and D above, there is a Minimum C grade in each course counted toward graduation.**

Also, students should note that many courses (including some from host departments) require prerequisite knowledge. Students should consult with their Academic Advisor for all course information.

### **Other notes:**

#### **Course 42-684**

42-684, Principles of Immunoengineering and Development of Immunotherapy Drugs, may be counted as a Chemical Engineering (06-XXX) elective if the course is not otherwise offered under a 06-XXX course number.

### **Research**

Up to 12 units of research (06-600, 06-803, or 03-699) with a faculty advisor may be counted toward the depth credits. Research should be approved by the Assistant Director (Academic Advising). Research taken as 06-600, 06-803, or 06-700 will count toward the Chemical Engineering (06-XXX) requirement in the depth category; research taken as 03-699 or 03-700 will count as

biology 03-XXX depth coursework. Students may take as many units of research credit as they wish, and all units will be reflected on their transcripts. However, a maximum of 12 units of 06-600 OR 06-803, OR 03-699 can count toward graduation.

### **Honors Thesis**

- Students who write an honors thesis (see Section 7.11) may enroll in 03-700 or 06-700. Students require written approval from the full MSBTPE Steering Committee to enroll in these courses. Students may take as many units of thesis research credit as they like, and all units will be shown on the transcript. However, a maximum of 12 units of thesis research (06-700 and/or 03-700) can count toward graduation (in addition to the 12 units of 06-600/06-803/03-699 research, which can be counted).

### **Unlisted Courses**

- Any course not listed above will need written approval from the Assistant Director (Academic Advising). Course requests will be evaluated based on relevance to program educational goals and the absence of an equivalent pre-approved course.
- 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 an 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](#) confirming no double counting.

### **Important Coursework Rules**

- All student course selections are subject to the approval of the MSBTPE Steering Committee.

### **First Semester**

- All coursework must count toward degree completion. Any exceptions require written permission from the Assistant Director for Academics.
- Students may not audit a course during their first semester of the program.

### **Second Semester**

- Every course requires written permission from the Assistant Director for Academics.
- Students may take additional courses that don't count toward the degree. Exceptions require approval of the Assistant Director for Academics.

### **Third Semester**

- All course requirements must be fulfilled by the end of the students' third semester.
- In addition to completing all remaining degree requirements, students may take other courses that don't count toward their degree with permission from the Assistant Director for Academics.

### **Enrollment Status**

Students must maintain full-time enrollment in the program (minimum 36 units per semester - the only exception allowed is if CMU Student Affairs and/or a medical provider request that a student be allowed

to take a reduced course load).

## **Internships**

If a student completes a Biotechnology and Pharmaceutical Engineering internship, then they may receive three units of depth credit for each term for (03-600).

## **7.4 Program Learning Outcome**

1. In written and verbal contexts, communicate scientific ideas to technical and/or non-technical audience and communicate skills to potential employers.
2. Explain the mechanisms and limitations of contemporary biotechnology tools including Protein purification and separation, Genome Editing & Synthetic Biology, DNA technology and genomics.
3. Reach proficiency in foundational biopharmaceutical engineering principles and techniques, including design of experiments and biomolecule separation and characterization.
4. Discuss the industrial, academic, and medical applications of bioprocessing and apply them to novel scenarios.
5. Evaluate the challenges in and create solutions for producing biomolecules at large scale.

## **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 campus and outside, share knowledge, and hone their professional skills.

The primary goal is to position students for an on-time graduation and to empower students with the important tools necessary to find an internship, secure a job, or pursue a Ph.D.

#### **● Summer Courses**

Before registering for summer courses, students should check with Assistant Directors about tuition charges. Your base tuition for the BTPE program does not include summer courses. With a few exceptions (research and internships), you will have to pay for summer courses individually.

### **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 MSBTPE program: 03-742 (substitute with 03-642), 03-747, 03-750 (substitute 03-655), 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.

## **7.9 Protocol for Evaluation of Transfer Credit**

The MSBTPE program does not accept transfer credits.

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

## **7.10 Teaching Requirements/Opportunities**

Graduate students in the MSBTPE program can be hired as teaching assistants for courses in which they are qualified to TA. Typically, these are courses that they have already taken as part of their graduate degree requirements. TA opportunities are announced via email towards the end of a given semester for the following semester. MSBTPE students may not be a TA until their second semester.

Graduate students are required to have a certain level of fluency in English before they can instruct in Pennsylvania, as required by the English Fluency in Higher Education Act of 1990. Through this Act, all institutions of higher education in the state are required to evaluate and certify the English fluency of all instructional personnel, including teaching assistants (TAs) and interns. The full University policy can be reviewed at:

<https://www.cmu.edu/policies/faculty/evaluation-certification-english-fluency-instructors.html>

The fluency of all instructional personnel will be rated by Language Support in the Student Academic Success Center to determine at what level of responsibility the student can serve as a TA. In addition to administering the International Teaching Assistant (ITA) Test (a mandatory screening test for any non-native speaker of English), Language Support in the Student Academic Success Center helps teaching assistants who are non-native English speakers develop fluency and cultural understanding to teach successfully at Carnegie Mellon. Visit the Student Academic Success Center website for additional information: [www.cmu.edu/student-success](http://www.cmu.edu/student-success). There are no available departmental-level resources.

## **7.11 Research Requirements/Opportunities**

### **Research**

Students interested in conducting research for academic credit take M.S. Thesis Research 03-700 or 06-600, under the guidance of a Biological Sciences faculty mentor or a Chemical Engineering faculty mentor, respectively.

- Up to 12 units of 06-600 or 03-700 may be counted toward the degree without written approval from the MSBTPE advising committee.
- Students may be eligible for "Research Honors."

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

Students are strongly advised to wait until their second semester to begin research.

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.

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.

For **CPT**, you'll need to refer to the OIE website for updated information on requirements.

## **7.12 Internship/Co-op Requirement and Opportunities Internships**

### **INTERNSHIPS**

Students often secure internships in industry or academia during the summer between their first and second years and less often during the academic year. The internship must be relevant to Biotechnology and Pharmaceutical Engineering. Students must contact the Assistant Director (Internships and Job Placement) in late fall to plan an internship.

#### **Registration for internships**

- Summer off-campus internships (including paid research at University of Pittsburgh): Register for 03-600R (3 units, tuition can be waived in most cases).
- Fall or spring internships: Register for 03-600A (3 units, included in full-time tuition).
- Paid on-campus summer research: No course credit can be earned for paid work at CMU.

**Important: Written approval** is required from the Assistant Director before registering for 03-600 or 03-699.

#### **International students**

If doing a **paid summer internship off campus**, you must apply for:

CPT (Curricular Practical Training) or

Pre-Completion OPT (Optional Practical Training)

— through the Office of International Education (OIE).

You are not eligible for CPT until the summer after your first full academic year.

The internship must be relevant to your program.

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/index.html> 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 MSBTPE 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 MSBTPE community, such as serving as a GSA representative or organizing social events, will receive an award for leadership.

Suppose you are interested in completing a research-based thesis. In that case, you are required to:

(1) complete 12 or more units of independent research study with a faculty advisor (with MSBTPE Advising Committee approval), and (2) write and defend a master's thesis. If you satisfy the above requirements, you qualify for Research Honors.

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

1. Title page & Dedication/Acknowledgements
2. Abstract (1 page)
3. Introduction chapter (4 or more pages):
  - a. Separate from the introduction sections in other chapters

b. This is a place for the student to put the entire thesis in context

4.1 or more additional chapters (20 or more pages each).

a. 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 standalone 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 MSBTPE Steering Committee determines that a student is making inadequate progress. The committee 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 MSBTPE 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 written feedback. 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](#): Three forms of student emergency support funding are 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 MSBTPE student accepts another program's offer to begin before matriculation in the MSBTPE program, the MSBTPE committee reserves the right to nullify the MSBTPE 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.

## **COMPLIANCE ISSUES**

### **Environmental Health and Safety Training**

Department of Biological Sciences BTPE graduate students must complete Laboratory Safety, Hazardous Waste Management, and Biological Safety training presented by Environmental Health & Safety during the Departmental Graduate Student Orientation. Graduate students must receive training before beginning regular coursework. Radiological Safety Training, Compressed Gas Cylinder Training, and Bloodborne Pathogen Training may be required.

### **Animal Training**

Animal training is required for any individual listed on an animal protocol. Currently, training is offered through the University of Pittsburgh Animal Research Protection Office and must be completed before research studies involving animals can begin.

All necessary approvals must be completed before research studies involving laboratory animals can begin.

For more information on training, please contact the IACUC at 412-383-2008 or [iacuc@pitt.edu](mailto:iacuc@pitt.edu).

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).

Biological Sciences/EM September 2026