

Master's Student Handbook

Academic Year 2025 - 2026

Mellon College of Science Physics

Master's in Modern Physics Student Handbook

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SECTION 1: Welcome & Introduction

Welcome to Carnegie Mellon University and the Department of Physics within the Mellon College of Science! Graduate students are an integral part of the educational and research mission of the department. Attracting and training talented graduate students is vital to Carnegie Mellon's mission and essential to the success of the department.

This handbook presents general information for all students enrolled in the MS in Modern Physics program in the Department of Physics at Carnegie Mellon University and summarizes the rules and degree requirements governing that degree program. While this handbook is specific to your academic experience in the department, 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:

- The Mellon College of Science does not have a dedicated graduate student handbook, but several graduate student related issues, in particular MCS-level degree policies and awards, can be found as sub-sections in the MCS faculty handbook.
- The university-wide Graduate Student Handbook (curated by the Office of Graduate & Postdoctoral Affairs), is accessible here.
- "The Word" Student Handbook contains information and resources to help you create your Carnegie Mellon experience and embrace your role as a valued member of our university.

SECTION 2: Vision, Mission, and Values

The MS in Modern Physics (MS-MP) program, launched in 2025, was developed to ensure that students in the foundational sciences receive training in modern physics with extensive yet flexible exposure to the latest developments in physics, thereby advancing scientific discovery. The departmental vision, mission, and values are in direct alignment with our program goals.

2.1: Vision

To be leaders in the quest to advance humanity's understanding of the physical world and a nexus for science at Carnegie Mellon.

2.2: Mission

To achieve this Vision, we will

- Enhance our areas of research strength while thinking boldly in order to seize new opportunities.
- Combine the unique contributions of Physics with the strengths of CMU.
- Educate and mentor future generations to succeed in a wide spectrum of careers.
- Increase appreciation of the contribution that Physics makes to CMU, the wider community, and the world at large.

2.3: Values

As a dynamic and collegial community, we value:

- Blue sky thinking, collaboration, excellence, and agility.
- Diversity.
- Fostering the talents of all our members and supporting their ambitions.
- Gaining a deeper knowledge of our world—both for the sake of pure understanding and as the source of technological innovation.

SECTION 3: Degrees Offered

The MS-MP program is currently the only terminal Master's degree offered by the Physics Department in the Mellon College of Science.

The MS-MP program is a two-year degree program. Some students in this program may be seeking advanced coursework and research opportunities to enable them to develop compelling applications to a doctoral program, while others will be going into areas in industry, such as the semiconductor industry, where the beyond-undergraduate coursework and research/internships in the MS-MP program will help them achieve their goals.

The Department of Physics also offers two doctoral degrees, which are described in separate Handbooks.

Throughout this Handbook, the term *graduate student*—meaning anyone beyond the undergraduate level—encompasses students in any Masters or Doctoral degree program.

The term "Master's student" refers to any student earning a Master's degree (specifically, a Master's degree in Science, or M.Sc.). This may be:

- the *en route* Master's degree, an interim milestone within the Physics Ph.D. program, or
- the stand-alone Master's degree in Modern Physics.

Since this Handbook is for the MS-MP program, any reference in this handbook to "the Master's degree" or "the Master's program" without additional clarification will refer by default to the MS-MP degree/program, not to the *en route* Master's degree.

SECTION 4: Important Contacts

This section identifies some key people that graduate students will get to know and interact with at some point throughout their career toward a degree in physics. A complete listing of all faculty, staff, post-doctoral researchers, and graduate students in physics can be found online at http://www.cmu.edu/physics/people/index.html.

The following list of people might be of particular importance to graduate students in physics:

- Dean of Mellon College of Science: Barbara Shinn-Cunningham.
 Mellon Institute MI 414, 412-268-7699, mcsdean@andrew.cmu.edu.
- Associate Dean for Faculty and Graduate Affairs: **Dejan Slepčev**. Wean Hall 7123, 412-268-2562, <u>slepcev@andrew.cmu.edu</u>.
- Associate Dean for Community Engagement: Michael Young.
 Wean Hall 6122, 412-268-2545, michaely@andrew.cmu.edu.
- Head of Department (DH): Rachel Mandelbaum.
 Wean Hall 7327, 412-268-6681, rmandelb@andrew.cmu.edu.
- Director of Graduate Studies (DGS): **Markus Deserno**. Wean Hall 6319, 412-268-4401, <u>deserno@andrew.cmu.edu</u>.
- Director of the MS-MP program: **Sufei Shi.** Wean Hall 6307, sufeis@andrew.cmu.edu
- Academic Program Manager: Hanann Marawi.
 Wean Hall 7319, hmarawi@andrew.cmu.edu.
- Business Manager: Jeff Abels.
 Wean Hall 7313, jabels@andrew.cmu.edu.
- Senior Administrative Coordinator: **Kristine Perez**. Wean Hall 7329 (Remote), <u>kperez2@andrew.cmu.edu</u>.
- Administrative Coordinator: Johannah Dickenson.
 Wean Hall 7329, 412-268-8367, jdickens@andrew.cmu.edu.
- Buyer: Seth Wolbert.
 Wean Hall 7415, 412-268-2753, swolbert@andrew.cmu.edu.
- MCS Director, Scientific Computing: Florin Manolache.
 Wean Hall 6218, 412-268-8486, florin@andrew.cmu.edu.
- MCS Director, Information Technology: Al Scheuring.
 412-268-4535, <u>alberts@andrew.cmu.edu</u>.
- Senior Systems Engineer: Nuno Chagas.
 nchagas@cmu.edu; but IT-related questions should be sent to help@phys.cmu.edu.
- MCS Liaisons for Graduate Affairs:
 - o Manfred Paulini, paulini@cmu.edu.
 - **Gwen Stanczak**, <u>gwens@cmu.edu</u>.
 - o Michael Young, michaely@andrew.cmu.edu.

Wean Hall 6122, 412-268-2545,

CMU-level Ombudsperson: Monique McKay.
 4615 Forbes Avenue, Suite 344, 412-268-2845, mmckay2@andrew.cmu.edu.

MCS Graduate Student Assembly Representatives

The Graduate Student Assembly is the branch of CMU's student government that represents graduate students. The physics graduate students determine (typically) two members to represent the department graduate student body at the Graduate Student Assembly (GSA). The GSA offers a variety of resources, including funding for graduate student events or conference travel support, and students are encouraged to explore that spectrum of opportunities. Reach out to any MCS Departmental GSA Reps if you have questions, concerns or ideas for supporting the graduate community in MS-MP and CMU.

Our current GSA representatives are:

- Lucas Fernández Sarmiento, <u>lucasf@andrew.cmu.edu</u>.
- Aleesha Kallil Tharayil, akallilt@andrew.cmu.edu.

Website: www.cmu.edu/stugov/gsa/

Instagram: www.instagram.com/cmugsa/

SECTION 5: Important Resources

Contained in this section are just some of the MCS and CMU resources that may be useful during the MS-MP program. Students should refer to The WORD
(https://www.cmu.edu/student-affairs/theword/), the CMU online student handbook which serves as the foundation for the program handbook. The WORD contains university-wide academic policy information and resources, community policies and resources, and describes the university level procedures used to review possible violations of these standards. It is designed to provide all students with the tools, guidance, and insights to help you achieve your full potential as a member of the Carnegie Mellon community.

Department Canvas Page

The Department curates an extensive and up-to-date list of a wide variety of physical and online resources on a <u>Departmental Resources Canvas Page</u>. Students are encouraged to browse this site when they start at CMU to get an overview what type of resources are available. Notice that this Canvas site also contains a section on current announcements and opportunities (such as jobs, courses, workshops, fellowships, postdoc opportunities, and summer schools).

MCS Minute & Dean's Dispatch

Weekly e-newsletters (typically delivered on Monday and Friday) that provide news and events happening in MCS and CMU. Students are automatically opted in to receive this correspondence.

Copy machines

These are located in the departmental mail room¹ (7322 Wean Hall), and can both produce physical copies or scan pages and send a pdf to a designated email. The number of physical copies made should be listed in the available record books together with the user or the course number for which the copies were prepared. If a machine jams, the user is responsible for either resolving the issue (in simple cases) or alert departmental staff to

¹ This room is open during usual business hours and accessible with a departmental key off-hours.

more difficult issues. If a machine runs out of paper, packs of copy paper are available in the copy room and the current user should restock the copier.

Web-Printers

A black-and-white (host name: phys-storeroom-copier.lan.local.cmu.edu) and a color printer (host: http://weh-7322-bizhub-color.phys.local.cmu.edu) are located in the mail room. For help with installing drivers students can check the Departmental Canvas Resource Page or contact the MCS Director of Information Technology. If they run out of paper, the user should restock them; if toner is low, the user should alert departmental staff.

Supplies

A shelf holding a limited selection of frequently needed supplies (such as basic stationary, chalk, blue books) is located on the left side of the mailroom. A detailed list can be found here.

Keys and Room Access

Graduate students are given keys to their offices and other spaces they need access to (e.g., graduate lounge, lab space, etc.) by departmental administrative coordinators. Some rooms (e.g., departmentally controlled classrooms or meeting rooms) require keycard access, for which a person's physical CMU ID card is used. To grant access, a departmental administrative coordinator will add the respective ID to a list of permissible users. Anyone who believes they need access to a given room should contact the Department's Administrative Coordinator.

Room Reservations

https://www.cmu.edu/hub/registrar/25live/index.html

Students can use the 25Live Room Reservation system to schedule rooms for group study or interviews. Specifically, the Cohon University Center (CUC) has a number of study spaces that are available to reserve for small groups or individuals.

To reserve departmental spaces, students should reach out to the Administrative Coordinator or Academic Program Manager via email or in-person and list their requested times, dates, and room preference.

CMU Graduate Student Lounge

https://www.cmu.edu/cohon-university-center/center-facilities/graduate-student-lounge/index.html

Located on the 3rd floor of the Cohon University Center (CUC), the Graduate Student Lounge is a central gathering space for all CMU graduate students that includes various seating options, a media nook, and a coffee bar. NOTE: There is also a lounge space available on the 6th floor of Wean Hall that is available for use - Wean Hall 6325. https://www.library.cmu.edu/services/reserve-space

The Hunt and Sorrell Libraries also offer study space or reserved seating options.

CMU Libraries Data Services

https://www.library.cmu.edu/services-overview/data

Offers several in-person and virtual events as well as resources to support and supplement your data science education.

CMU Pantry

https://www.cmu.edu/student-affairs/resources/cmu-pantry/

The CMU Pantry is a free, supplemental food resource open to all undergraduate and graduate students. Shoppers are able to visit the Pantry once a week.

Wellness Resources

https://www.cmu.edu/wellbeing/resources/therapy.html

There are many online, individual and group wellness initiatives to support your whole being while a student at CMU. Some highlights include weekly pet therapy, free access to the Headspace App, individual consultation with a professional counselor at the Counseling and Psychological Services (CaPS), and group therapy session.

Center for Diversity & Inclusion

https://www.cmu.edu/student-diversity/

The Center is located in the CUC, lower level and is a centralized place for all students on campus looking for a place to socialize, host a meeting, or take a break between

classes/study. Sign up to receive The Center's Newsletter and stay up-to-date on diversity, equity and inclusion events happening across campus.

Office of Disability Resources

https://www.cmu.edu/disability-resources/

Works with students who self-identify as having a physical, sensory, cognitive, and/or emotional disability to coordinate and provide reasonable accommodations.

Student Leadership, Involvement & Civic Engagement (SLICE)

https://www.cmu.edu/student-affairs/slice/index.html

SLICE is the central office for student engagement and offers a number of events, activities and resources to support student involvement on- and off-campus. It also maintains Tartan Connect, an online directory to explore and join CMU student organizations. Through Tartan Connect, you can sign up for things like Pittsburgh Connections which sponsors outdoor and cultural adventures to many recreation facilities in the area and Days of Service, coordinated volunteer opportunities in the local community.

Student Academic Success Center (SASC)

https://www.cmu.edu/student-success/

The Student Academic Success Center's (SASC) work to support success focuses on creating spaces for students to engage in their coursework and approach to learning through many group and individual program options.

SECTION 6: Advising

6.1: Role of an Advisor and Advisor Assignments

During their time in the Department, students have multiple resources in terms of advising and mentoring. This section lays out the basic framework.

The MS-MP Director, Sufei Shi, will be a student's main point of contact for any administrative, programmatic, personal, or academic concerns. Open Advising Hours will be posted each semester. MS-MP students may also schedule an appointment in person or virtually at a mutually convenient time during normal business hours (9 am – 5 pm). Students may also arrange to meet with the Physics Department Head to discuss any academic concerns.

The Director will also regularly monitor students' progress towards degree requirements. Students will be notified in writing if there are any indications that a student is not making adequate progress and provided with assistance, where needed.

All students are encouraged to explore research advisors, and it is also recommended that they try to finalize their choice before the first summer semester so that they can have a long-term research experience when they graduate from the two-year MS program. MS-MP students who participate in research will also have a research advisor.

6.2: Advisor/Advisee Collaboration

Students are encouraged to communicate openly with the Director. Students can expect to receive a reply to any written communications to the Director within 1-2 business days. The Director will notify students when they will be out of the office for any extended period. All conversations will remain confidential unless issues fall within Pennsylvania State Laws for Mandated Reporting.

Students are also encouraged to reach out to MS-MP faculty for additional support. Students who are experiencing difficulty in a class should consult with the Director and the course instructor for resources to support success in the classroom.

Students in the MS-MP program are strongly encouraged to explore research opportunities by finding a research advisor. It is strongly encouraged that the students take initiative to

reach out to faculty of interest to discuss a mutually interesting project. It is understandable that the students might try out different research projects, but it is strongly recommended that the students finalize the choice of the research advisor before the first summer, so that the students can benefit from a relatively long-term research experience.

6.3: Review/Redress of Academic Conflicts

Generally, graduate students are expected to seek informal resolution of all concerns within the applicable department, unit, or program before invoking formal processes. Students may confer with one of the designated MCS Liaisons for Graduate Affairs if needed. For more information on the MCS Liaisons and departmental guidelines for navigating the grievance process, please visit: https://www.cmu.edu/mcs/grad/liaison.html.

When an informal resolution cannot be reached, however, a graduate student who seeks further review of the matter must follow the formal procedures outlined in the appeal and grievance procedures outlined at:

https://www.cmu.edu/graduate/policies/appeal-grievance-procedures.html.

These appeal and grievance procedures apply to all students in the University's graduate programs.

SECTION 7: Master's Degree Requirements

7.1: Residency Requirements

The MS-MP program is offered at the CMU Pittsburgh location only. Students will reside in Pittsburgh, off-campus, and be expected to participate fully, in-person, in all course requirements. No part of the program will be delivered using distance education; this is a fully residential program. US. Government regulations require that international students on F-1 and J-1 visas be enrolled in an in-person degree program, with in-person coursework expectations. However, it is the program's expectation that all students, regardless of citizenship status, attend and participate in in-person class sessions.

7.2: Registration Process

Incoming MS-MP students will register for fall courses during orientation week prior to the start of fall classes. Students will be responsible for registering themselves for courses for subsequent semesters when course registration opens, including a 3-unit internship or research course for the summer (see below).

The MS-MP Director will perform an audit after the open registration period and after the add/drop period to ensure all students are registered for the courses needed for graduation.

7.3: Required Units for Degree Attainment

MS-MP students are required to complete a minimum of 147 units to satisfy the degree requirements. These units can be achieved by completing four 12-unit core courses and eight 12-unit elective courses during the fall and spring semesters of the two years of the program (i.e., three such courses per semester), and a 3-unit internship or research course in the summer. The specific core and elective course options are described below.

Students will be limited to 36 units per semester, with exceptions for increased units made only for students needing additional units to meet the minimum unit requirement for graduation.

NOTE: Carnegie Mellon has adopted the method of assigning a number of "units" for each course to represent the quantity of work required of students. For the average student, one unit represents one work-hour of time per week throughout the semester.

7.4: Core Courses

The program requires 4 mandatory 12-unit core courses, chosen from 6 existing graduate courses:

33-755 Quantum Mechanics I (fall semester)

33-756 Quantum Mechanics II (spring semester)

33-757 Classical Mechanics (fall semester)

33-761 Classical Electrodynamics I (fall semester)

33-765 Statistical Mechanics (spring semester)

33-783 Theory of Solids I (fall semester)

The core curriculum provides rigorous foundational training in general physics to the students, providing a solid basis in physics that will enable students to then focus on their desired area such as Condensed Matter Physics, High Energy Physics, Astrophysics, etc. Most students will complete all 4 core courses in their first year in the MS-MP program.

7.5: Flectives

The program requires 8 elective courses that the students can choose from existing graduate courses, advanced undergraduate courses, and research courses with faculty. Advanced undergraduate courses (33-3xx, 33-4xx, and 33-6xx) will provide additional options for students to focus their education on preparation for future PhD studies or employment. We require that the units from advanced undergraduate courses not exceed 48.

We strongly encourage the students to choose one research course (12 units) in their area of interest, at most one per semester. Taking at least two research courses, one for each

semester of the second year (semesters 3 and 4), is strongly recommended. The students are encouraged to contact faculty in the Physics Department to arrange these research opportunities, and may seek assistance from MS-MP program leadership to explore opportunities outside of the Department if appropriate for their interests.

The following is the listing of advanced undergraduate and graduate courses available as elective courses for the MS-MP program. Note that 33-776 (Introduction to Research), which is a 12-unit graduate course, can be selected as an elective course. We also have 33-997 (Graduate Laboratory) as a variable unit course (3-12 units) depending on the course load. As most of the advanced undergraduate units are 9 units rather than 12 units, students can take 33-997 in semesters when they take an advanced undergraduate course to ensure that full-time standing and minimum units for graduation are satisfied. Students are not permitted to take any courses outside of the Physics Department for the elective requirement, except by permission of the MS-MP Director.

Depending on students' background and interests, they may wish to take electives on similar topics at different levels (e.g., undergraduate followed by graduate quantum mechanics). In general, electives on similar topics should be taken in sequential order. Students should consult the MS-MP Director to identify a suitable sequence of electives given their background and interests.

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33-331 Physical Mechanics I
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33-332 Physical Mechanics II

33-338 Intermediate Electricity and Magnetism I

33-339 Intermediate Electricity and Magnetism II

33-340 Modern Physics Lab

33-341 Thermal Physics I

33-342 Thermal Physics II

33-353 Optics

33-355 Quantum Electronics

33-431 Stars & Black Holes

33-432 Galaxies

33-433 Cosmology

33-441 Introduction to Biophysics

33-444 Introduction to Nuclear & Particle Physics

33-445 Advanced Quantum Physics I

33-446 Advanced Quantum Physics II

- 33-448 Introduction to Solid State Physics
- 33-456 Advanced Computational Physics
- 33-466 Extragalactic Astrophysics and Cosmology
- 33-467 Astrophysics of Stars and Galaxy
- 33-650 General Relativity
- 33-658 Quantum Computation and Information
- 33-659 Quantum Hall Effect and Topological Insulators
- 33-731 Stars & Black Holes
- 33-732 Galaxies
- 33-733 Cosmology
- 33-767 Grad Biophysics
- 33-769 Quantum Mechanics III Many Body Theory and Relativistic Systems
- 33-770 Field Theory 1
- 33-771 Field Theory 2
- 33-776 Introduction to Research
- 33-777 Introductory Astrophysics
- 33-778 Intro to Cosmology
- 33-779 Nuclear and Particle Physics I
- 33-780 Nuclear and Particle Physics II
- 33-785 Special Topics in Condensed Matter

7.6: Department Policy on Double Counting Courses

If a student has previously taken a required MS-MP course as part of a prior degree at CMU, they may count the course toward the MS-MP graduation requirements. The student will work with the Director to identify suitable credits to transfer.

CMU undergraduates may take this program as a fifth-year master's degree provided they take 93 units or more in one year, provided that: (1) 36 units of senior physics coursework "double count" towards the master's degree requirements; (2) 18 units of advanced undergraduate physics coursework from the student's junior year can be exempted from the master's degree requirements. Students will then be required to complete 93 units to fulfill the master's degree requirements within one-year, totaling 147 units. For example, it could be 45 units for one semester and 48 units for the second (48 units translate to 4 courses with each being 4 credits).

7.7: Overloads and Additional Electives

Students will be limited to 36 units per semester, with exceptions for increased units made only for students needing additional units to meet the minimum unit requirement for graduation.

7.8: Course Exemptions

Students may petition to take a non-approved elective course in place of one of the elective options listed above provided the course aligns with the overall program philosophy. Students must seek approval from the MS-MP Director prior to the drop deadline for the semester in which the course is offered.

7.9: Department Policy for Withdrawing from a Course

MS-MP students may withdraw from core or elective courses provided an approved core or elective course substitute is added prior to the add/drop deadline for the semester. Consult with the MS-MP Director before withdrawing from any course and consult course instructors when adding courses after the start of classes to ensure it is possible to catch up on work the class has already done.

7.10: Protocol for Evaluation of Transfer Credit

The MS-MP program does not accept transfer credits for any courses taken before enrolling in the program, except for CMU courses as detailed in Section 7.6.

SECTION 8: Grading & Evaluation

8.1: Grading Scale/System

The Department of Physics follows the University Policy on Grading, which is outlined online at https://www.cmu.edu/hub/registrar/student-records/transcripts/legend.html. This policy offers details concerning university grading principles for students taking courses and covers the specifics of assigning and changing grades, grading options, drop/withdrawals and course repeats. It also defines the graduate grading standards using the following letter grades:

Translations of these letter grades into a numerical score (such as "A+" = 4.33, "A" = 4.0, "A-" = 3.67, ...) can again be found in the university guidelines.

For MS students, a passing grade is at least a B-.

8.2: Department Policy on Retaking a Course

Students are not permitted to retake a course for credit that was already successfully completed. Withdrawal from a course does not constitute a completed course.

Exceptions to this policy include:

If a student fails a course, either core or elective, with a grade of C+ or below, they must then pass another course of the same type to meet the MS requirements. They are permitted to retake the same course or another course within that category. Both the failing grade and the new grade for the retaken course will appear on the student's transcript and both grades will be factored into the student's MS-MP and overall QPA calculation. If the student fails to successfully pass the replacement core/elective course, the MS-MP administration may dismiss the student from the program for failure to maintain satisfactory academic progress.

A student may be required after academic review by the MS-MP administration to retake a course if it is deemed that the student did not master the course material. The original

grade and the new grade will appear on the student's transcript and will be factored into the student's MS-MP and overall QPA calculation.

8.3: Department Policy on Pass/No Pass

Students are not permitted to take any required courses Pass/No Pass. Courses that count towards the degree requirements must be taken for a grade. MS-MP students are NOT permitted to take any courses towards degree requirements as an audit.

8.4: Department Policy for Incompletes

The Department of Physics follows Carnegie Mellon's university-wide policies on the assignment of Incomplete grades, as outlined in the CMU grading policy referenced in Section 8.1. Briefly:

- An Incomplete grade ("I") may be assigned by the instructor when the following conditions are met:
 - The student was unable to complete course requirements within the academic semester due to circumstances beyond their control;
 - The work completed to date is of passing quality (note: this does *not* mean the cumulative points must already constitute a passing grade);
 - Granting the incomplete does not confer an unfair advantage over other students.

A typical example would be a medical emergency that prevents the student from taking the final exam.

- The instructor must specify what work remains and indicate the default grade the "I" will convert to if no further work is submitted. This is done using an official CMU form called the "Incomplete Grade Agreement."
- The student and instructor must both sign and date the Incomplete Grade Agreement.
- Students must complete the required coursework no later than the end of the following academic semester, or earlier if required by prior agreement.

It is important to note that *an Incomplete is intended for unforeseen interruptions*, not for situations where a student falls behind due to poor time management or overcommitment. For instance, if, during the semester, it becomes evident that a student is overwhelmed by

their workload, the appropriate course of action is to drop a class—not to postpone the work until after the semester ends.

While CMU provides deadlines for dropping a course, a *late drop option* exists in exceptional cases. This requires the use of a <u>dedicated form</u> and the signatures of the student, the MS-MP Director, and the Department Head.

Historically, Incomplete grades have had low completion rates: CMU data collected between Fall 2015 and Spring 2020 show that approximately 60% of Incompletes convert to the default grade. The structured use of the Incomplete Grade Agreement is intended to help improve this outcome. Setting deadlines that are as soon as is feasible (rather than the latest possible option, the end of the subsequent semester) has also been shown to increase the chances of success, and is strongly encouraged. Instructors are also encouraged to maintain regular communication with the student to support the timely completion of outstanding work.

8.5: GPA/QPA Requirements and Degree Attainment

To graduate from the MS-MP program, students must complete a total of 147 units of required coursework or approved substitutes with a cumulative QPA of 3.00 or higher and no grades below a B- in required coursework, including core and elective courses. Grades for any additional elective courses that are not counted towards the minimum degree requirement will not be factored into cumulative QPA or individual course minimum grade thresholds.

In addition to GPA/QPA requirements, to graduate from the MS-MP program, students must also satisfy the following additional requirements:

- A student account in good standing with the university with no delinquent charges.
- All materials borrowed from Carnegie Mellon University must be returned in satisfactory condition or sufficiently replaced.
- Students must be in good standing with the university with no University Disciplinary Committee or University Review Board decisions outstanding.

8.6: Satisfactory Academic Standing

To remain in good academic standing, students must maintain a cumulative QPA of 3.00 or higher in required courses counted towards the degree requirements. Grades for any additional electives taken beyond the required MS-MP coursework will not count towards degree or minimum QPA requirements but will factor into the student's overall QPA. No grade lower than a B- can be used towards the degree requirements.

Students receive mid-semester grades as an indication of progress in the course. These do not appear on their final transcript. The MS-MP Director will review grades mid-semester and after the final exam period at the end of the Fall semester. At mid-semester, the program director will contact the student to assess whether additional academic support measures are needed. Students are always encouraged to reach out to the program director and/or MS-MP faculty for assistance.

If at the end of the Fall semester, a student is not maintaining good academic standing, the student's file will be reviewed by the MS-MP Director to determine whether a penalty will be incurred. Penalties can range from academic probation to academic suspension to dismissal from the program. Students will be informed in writing of any academic actions taken by the committee including any remediation plan.

Academic Probation

A student on academic probation may not take any additional courses beyond the MS-MP requirements and must consult with the program director for any course changes. Students will be reviewed in mid-semester to assess whether adequate progress is being made. Students who are unable to return to satisfactory academic standing may be placed on academic suspension or be dismissed from the program.

Academic Suspension

A student may be placed on academic suspension if a student is unable to make satisfactory academic progress or if the student is in violation of an academic requirement. The student will be notified of the decision and the terms of a return to the program and university. Students studying on a visa will need to consult with the Office of International

Education. The MS-MP Director will notify the Hub of the suspension and the student will be immediately withdrawn from classes. Any tuition adjustments will follow the university's tuition adjustment policy. The student will need to follow the Leave of Absence policy to return to the university.

Dismissal

A dismissal may occur if a student is not able to sustain adequate academic progress. If a student is dismissed from the program, they may not return without successfully reapplying to the program. The MS-MP Director will notify the Hub of the suspension and the student will be immediately withdrawn from classes. Any tuition adjustments will follow the university's tuition adjustment policy.

Students may appeal an/all academic standing decisions as outlined in the Summary of Graduate Student Appeal and Grievance Procedures at:

https://www.cmu.edu/graduate/resources/appealgrievance-procedures.html

SECTION 9: Funding & Financial Support

9.1: Statement of Department Financial Support

Students are required to pay the MCS graduate student full-time tuition rate and associated fees for the duration of the MS-MP program prior to the start of each semester. Students must satisfy all university financial obligations for their degree to be conferred. The 2025-26 MCS Graduate Tuition & Cost of Attendance can be found at: https://www.cmu.edu/sfs/tuition/graduate/mcs.html

9.2: Billing and Payments

The Student Accounts Office will create monthly electronic invoices. Students can view their monthly statement on Student Information Online (SIO) at www.cmu.edu/hub/sio. Invoices are due on August 15th for the Fall semester and January 15th for the Spring semester. Failure to pay an invoice by the posted due date may incur a monthly interest fee until the balance is paid in full.

More information on billing and payments can be found at: https://www.cmu.edu/sfs/billing/index.html.

9.3: Tuition Adjustments

Tuition and fees are fully refundable if a student takes a leave of absence or withdraws from the university within the first 10 days of classes or 15 calendar days. After this date, students who take a leave or withdraw before completing 60% of the semester will be assessed tuition based on the number of days completed within the semester, including calendar days, class & non-class days, from the first day of classes to the last day of final exams. Thanksgiving and Spring break are not counted. No adjustment will be made after 60% of the semester is completed.

More details on tuition adjustments can be found at: https://www.cmu.edu/sfs/tuition/adjustment/.

9.4: Travel/Conference and Research Funding

Mellon College of Science provides supplemental conference travel funding for MCS graduate students to enable MCS graduate students to attend and participate in key conferences and workshops that advance their research and professional development. Travel awards up to \$500 are available to individual graduate students or a group of graduate students attending the same meeting.

Students can find more information about the application process and deadlines at: https://www.cmu.edu/mcs/grad/grad-student-conference-funding.html.

In addition to MCS Graduate Conference Travel Awards, the university offers a number of options to support professional and academic pursuits through the Graduate Student Association (GSA) and the Office of Graduate & Postdoctoral Affairs including:

- GSA Special Allocations: https://www.cmu.edu/stugov/gsa/Resources-for-Graduate-Students/Special%20Allocations.html
- Graduate Small project Help (GuSH) Research Grants: https://www.cmu.edu/graduate/funding/research-grants.html
- Conference Funding: https://www.cmu.edu/graduate/funding/conference.html
- Professional Engagement Funding:
 https://www.cmu.edu/graduate/funding/professional-engagement.html

9.5: Additional Sources of Internal & External Financial Support

Graduate students who find themselves in need of immediate funds for emergency situations should contact the Office of the Dean of Students,

https://www.cmu.edu/student-affairs/dean/, to inquire about the types of emergency funding available to enrolled students.

Graduate students should consult the graduate student financial aid information found on The HUB website: https://www.cmu.edu/sfs/financial-aid/graduate/index.html. Students will find the Graduate Financial Aid Guide, information about funding options and how to apply for financial aid and other helpful links.

Note: International Students must notify the Office of International Education (OIE) if they lose their funding.

9.6: Department Policy on Outside Employment

Students are discouraged from seeking or obtaining outside employment during the Fall and Spring semesters. Given the rigor of the coursework and unit requirement, full-time employment will likely not be possible. However, the MS-MP program does not restrict students from obtaining relevant part-time positions during the academic year provided employment does not interfere with the student's ability to maintain adequate academic progress and participate fully in required academic activities including, but not limited to, class attendance.

International students must notify OIE regarding their ability to hold employment.