



**Department of Materials Science and Engineering**

**AY 2021 – 2022 Masters Student Handbook**

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## Welcome

Welcome to the graduate program in Materials Science and Engineering at Carnegie Mellon University. The Department of Materials Science and Engineering (MSE) is one of seven academic departments in Carnegie Institute of Technology, the engineering college at Carnegie Mellon. MSE has a long and distinguished tradition in materials education and research, and today our faculty continue to address the more important and challenging issues at the forefront of science and technology.

Materials Science and Engineering is an interdisciplinary activity that applies the principles of basic sciences and engineering to understanding the behavior of materials, their development and applications. Both our undergraduate and graduate students are exposed to this interdisciplinary approach.

While this handbook and the **College of Engineering handbook** are specific to your academic experience in the department, there are several other resources and offices graduate students are encouraged to consult during their tenure at Carnegie Mellon University. Information about The Word, the student handbook, the Office of Graduate and Postdoc Affairs, the Office of the Dean of Student Affairs and others are included in Appendix A of this handbook.

## **Carnegie Mellon University**

**Vision:** Carnegie Mellon University will have a transformative impact on society through continual innovation in education, research, creativity, and entrepreneurship.

**Mission:** To create a transformative educational experience for students focused on deep disciplinary knowledge; problem solving; leadership, communication, and interpersonal skills; and personal health and well-being.

To cultivate a transformative university community committed to (a) attracting and retaining diverse, world-class talent; (b) creating a collaborative environment open to the free exchange of ideas, where research, creativity, innovation, and entrepreneurship can flourish; and (c) ensuring individuals can achieve their full potential.

To impact society in a transformative way — regionally, nationally, and globally — by engaging with partners outside the traditional borders of the university campus.

## **General Information About the Department**

Graduate education in the Department of Materials Science and Engineering (MSE) at Carnegie Mellon is established upon a very broad basis. Emphasis is given to a spectrum of material areas, including nanotechnology, biomaterials, materials processing, structural and electronic, magnetic, and optical materials. Along with the fundamentals of structure, defect state, thermodynamics and transport phenomena that underlie the entire field, education is focused equally between the materials classes of metals, ceramics, semiconductors, and composite materials. Thus, students interested in topics such as nano- or bio-technology, material synthesis and processing, mechanical behavior of materials, the interrelationship between structure and properties, ceramic-science and electronic, magnetic and optical materials will get a solid grounding in the fundamentals of these areas through the graduate curriculum. Courses in special technical subjects in other engineering and science departments, as well as specific research topics, provide the breadth needed for a balanced program and special degree options. The comprehensive nature of the overall program is indicated by departmental faculty interests, which are balanced between engineering and science, and focused on contemporary and future topics of relevance to the application of materials in society.

Graduate study in MSE is designed to provide students with a systematic development of the fundamental scientific and engineering principles that govern the behavior and application of all materials. Entering graduate students typically have undergraduate and sometimes graduate degree backgrounds in a wide range of disciplines in engineering and science. Programs of study are planned individually in consultation with the faculty and academic advisor. These programs may be directed toward fundamental science, engineering, or a blend of the two, depending on the preference, capabilities, and professional career goals of the student. Recommended courses often include those offered by other departments within College of Engineering or by other colleges within Carnegie Mellon.

## **Mission of Department**

### **Degrees Offered**

The department offers the following Master's degree programs:

Master of Science in Materials Science and Engineering  
+ Master of Science in Engineering & Technology Innovation Management  
+ Master of Science in Technology Ventures  
Master of Science in Materials Science  
Master of Science in Computational Materials Science and Engineering  
+ Integrated Study in Computer Science  
Master of Science in Additive Manufacturing

## **University Policies & Expectations**

It is the responsibility of each member of the Carnegie Mellon community to be familiar with university policies and guidelines. In addition to this departmental graduate student handbook, the following resources are available to assist you in understanding community expectations:

- The Word/Student Handbook: [www.cmu.edu/student-affairs/theword//index.html](http://www.cmu.edu/student-affairs/theword//index.html)
- Academic Integrity Website: <https://www.cmu.edu/student-affairs/ocsi/academic-integrity/index.html>
- University Policies Website: [www.cmu.edu/policies/](http://www.cmu.edu/policies/)
- Graduate Education Website: <http://www.cmu.edu/graduate/policies/index.html>
- College Of Engineering Website: <https://engineering.cmu.edu/education/academic-policies/index.html>

## **Carnegie Mellon University Statement of Assurance**

Carnegie Mellon University does not discriminate in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex, handicap or disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Furthermore, Carnegie Mellon University does not discriminate and is required not to discriminate in violation of federal, state, or local laws or executive orders.

Inquiries concerning the application of and compliance with this statement should be directed to the vice president for campus affairs, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2056.

Obtain general information about Carnegie Mellon University by calling 412-268-2000.

The Statement of Assurance can also be found on-line at:

<https://www.cmu.edu/policies/administrative-and-governance/statement-of-assurance.html>

## **The Carnegie Mellon Code**

Students at Carnegie Mellon, because they are members of an academic community dedicated to the achievement of excellence, are expected to meet the highest standards of personal, ethical and moral conduct possible.

These standards require personal integrity, a commitment to honesty without compromise, as well as truth without equivocation and a willingness to place the good of the community above the good of the self. Obligations once undertaken must be met, commitments kept.

As members of the Carnegie Mellon community, individuals are expected to uphold the standards of the community in addition to holding others accountable for said standards. It is rare that the life of a student in an academic community can be so private that it will not affect the community as a whole or that the above standards do not apply.

The discovery, advancement and communication of knowledge are not possible without a commitment to these standards. Creativity cannot exist without acknowledgment of the creativity of others. New knowledge cannot be developed without credit for prior

knowledge. Without the ability to trust that these principles will be observed, an academic community cannot exist.

The commitment of its faculty, staff and students to these standards contributes to the high respect in which the Carnegie Mellon degree is held. Students must not destroy that respect by their failure to meet these standards. Students who cannot meet them should voluntarily withdraw from the university.

The Carnegie Mellon Code can also be found on-line at:  
<http://www.cmu.edu/student-affairs/theword/code.html>

## **The Word**

<https://www.cmu.edu/student-affairs/theword/>

The Word is Carnegie Mellon University's student on-line handbook and is considered a supplement to the department (and sometimes college) handbook. The Word contains campus resources and opportunities, academic policy information and resources, community standards information and resources. It is designed to provide all students with the tools, guidance, and insights to help you achieve their full potential as a member of the Carnegie Mellon community. Information about the following is included in The Word (not an exhaustive list) and graduate students are encouraged to bookmark this site and refer to it often:

- Carnegie Mellon Vision and Mission
- Carnegie Code
- Academic Standards, Policies and Procedures
- Campus Resources & Opportunities
- Community Standards, Policies and Procedures



## **Graduate Study in Materials Science & Engineering: General Information**

Graduate education in the Department of Materials Science and Engineering (MSE) at Carnegie Mellon is established upon a very broad basis. Emphasis is given to a spectrum of material areas, including nanotechnology, biomaterials, materials processing, structural and electronic, magnetic and optical materials. Along with the fundamentals of structure, defect state, thermodynamics and transport phenomena that underlie the entire field, education is focused equally between the materials classes of metals, ceramics, semiconductors and composite materials. Thus, students interested in topics such as nano- or bio-technology, material synthesis and processing, mechanical behavior of materials, the interrelationship between structure and properties, ceramic-science and electronic, magnetic and optical materials will get a solid grounding in the fundamentals of these areas through the graduate curriculum. Courses in special technical subjects in other engineering and science departments, as well as specific research topics, provide the breadth needed for a balanced program and special degree options. The comprehensive nature of the overall program is indicated by departmental faculty interests, which are balanced between engineering and science, and focused on contemporary and future topics of relevance to the application of materials in society.

Graduate study in MSE is designed to provide students with a systematic development of the fundamental scientific and engineering principles that govern the behavior and application of all materials. Entering graduate students typically have undergraduate and sometimes graduate degree backgrounds in a wide range of disciplines in engineering and science. Programs of study are planned individually in consultation with the faculty and academic advisor. These programs may be directed toward fundamental science, engineering or a blend of the two, depending on the preference, capabilities and professional career goals of the student. Recommended courses often include those offered by other departments within College of Engineering or by other colleges within Carnegie Mellon.

### **Department Personnel**

The Main office of the MSE department is located in 3325 Wean Hall. MSE Staff members are located in both Wean Hall and Roberts Hall. MSE staff are here to assist you in your pursuit of graduate study.

#### **Faculty:**

The MSE faculty are listed on our website:

<http://www.cmu.edu/engineering/materials/people/faculty/index.html>

#### **Staff:**

Please see our staff “point of contact” webpage to determine which staff member to contact for different items:

<https://www.cmu.edu/engineering/materials/people/staff/index.html>

## Master of Science in Materials Science and Engineering (Course Option)

The 96 satisfactorily completed units that are offered for the degree shall be subject to the following distribution requirements:

- Students are required to take 24 units **of the departmental common MSE graduate core courses.**

Number	Title	Units
27-788	Defects in Materials	6
27-766	Diffusion in Materials	6
27-796	Structure of Materials	6
27-797	Bonding in Materials	6
27-798	Thermodynamics I	6
27-799	Thermodynamics II	6

- Students are required to take 24 additional units of **MSE graduate elective courses (27-7\*\*).**
  - 12 of these units may include the departmental core courses not used to count towards the MSE graduate core requirement
- Students are required to take **24** additional units of **approved MSE-related** courses.
  - Up to 24 of these units may include approved advanced undergraduate courses (4\*\*, 5\*\*, 6\*\* courses).
- Students are required to take **24** additional units of **approved graduate** courses.
  - Between 12 and 24 of these units can be individualized study courses, such as Masters Project (27-756) or Materials Problems (27-755).
  - Approved courses may come from CIT, Heinz, Tepper, SCS, and MCS.
- The average grade of the course work shall be at least a B (3.0), and the student may choose any 72 to 96 of the first 120 units attempted to compute the average course grade.

The College of Engineering offers two dual degree Master's programs attractive to students with an engineering background. The requirements for each degree must be satisfied and students will receive two degrees after completing the program.

Master of Science in Materials Science and Engineering can enroll in a dual degree program with the following programs.

## **Master of Science in Materials Science (Research Option)**

The 144 satisfactorily completed units that are offered for the degree shall be subject to the following distribution requirements:

### **Coursework Requirements**

Students are required to take 24 units of the departmental common MSE graduate core courses. (see previous page for list of courses)

Students are required to take 24 additional units of MSE graduate elective courses (27-7\*\*).

12 of these units may include the departmental core courses not used to count towards the MSE graduate core requirement.

Students are required to take 24 additional units of approved MSE-related courses.

Up to 24 of these units may include approved advanced undergraduate courses (4\*\*, 5\*\*, 6\*\* courses).

### **Research Degree Requirements**

Students are required to carry out MSE-related graduate research; they must take (at least) 72 additional units of 27-756 Masters Project.

MSE-related research can be conducted under the supervision of MSE-affiliated faculty advisor.

Because of the nature of research and the requirement for an approved final report to be written, it is anticipated that many students will require between 72 and 120 research units to complete this degree program.

Students can only register for up to a total of 120 units of graduate research (or substitutions) before they must complete the degree.

### **General Degree Requirements**

The student must satisfy the graduate research (27-756) and masters final report requirements upon completion of the first 120 units of graduate research (27-756) attempted.

Units of course-work and project-work are to be taken together insofar as possible. To ensure this, no more than 36 units of course-work may be taken in any given semester. (In the first semester, students may be permitted to take more than 36 course-work units.)

The student must satisfy all of the requirements upon completion of no more than 240 units attempted.

### **Research Unit Expectations**

Research units are expected to be equivalent to hours worked on project per week. For example, a student taking 12 research units in a semester is expected to work approximately 12 hours per week on the research project. These hours do not include hours worked on coursework taken at the same time as research units.

Students must make satisfactory progress toward their research each semester they are enrolled in the program. Satisfactory progress is determined by the MSE-affiliated research advisor. Your advisor will assign a grade based on the research progress and the number of units you are registered in that semester.

## **Changing Research Advisors**

"If the working relationship between a masters student in the research degree program\* and their research advisor ends in a semester, the student must find a new research advisor before the end of the next mini session to remain in good standing for the degree program. If a student is unable to find a new research advisor by that date, they will be transferred to the coursework\*\* degree program."

\* MS in Materials Science

\*\* MS in Materials Science and Engineering

## **Summer Research and Off-campus Internships**

Students have several options for the summer session. If you have any questions about your plans for the summer, please discuss with your academic advisor prior to the summer session. The department also encourages students to reach out to the Career and Professional Development center to start their internship search.

27-773: Graduate Reading and Research– Summer reading and research is recommended for the summer months (May through August) during the first three semesters of full-time academic work. Summer research (27-773) does not count towards MSE-related graduate research (27-756) requirements. However, the work completed in 27-773 can be used in the Master's Final Report. Students are not permitted to take coursework while being registered for 27-773 in the summer session.

If students need to make up research units missed in the first two semesters of the program, students may choose to take 6-12 units of "27-756 Masters Project" to fulfill research requirements for the degree. Tuition will be assessed for these units.

Students choosing to take other coursework on the CMU campus in the summer session will be charged tuition for these units.

Students wishing to participate in an off-campus summer internship are responsible to secure their position. Students applying for CPT must register for 3 units of "27-995 Internship" during this session. Those units may be used toward the degree requirements. The student will be assessed tuition for these units as an essential component of the degree requirements. The Internship must be integral to the student's masters curriculum. For the 3 units of 27-995 to satisfy the degree requirements, students must submit the "Internship Plan" (Appendix B) before the summer session begins. At the completion of the internship, students must submit the "Internship Report" along with a 1-2 page summary of the accomplishments during the internship (Appendix C). The faculty research advisor will be responsible for giving a letter grade for these units.

International Masters students with a visa status must apply for CPT for their summer internship. <https://www.cmu.edu/oie/foreign-students/docs/cpt.pdf>

## **Final Research Report**

A Master's Final Report that clearly and successfully states the objectives and accomplishments of the MSE-related research must be written and approved.

The Master's Final Report must embody the results of independent MSE-related research, be an original contribution to knowledge, and ideally include material worthy of publication.

### Report Requirements

- Other than 12 point font (preferably a Sans Serif font), 1" margins all around, and single spacing, there are no strict formatting requirements, but the report must contain the essential elements of a scientific paper: Abstract, Author affiliation, Figures, Tables, Funder information, Introduction, Materials/Methods, Results, Discussion, Conclusions/Summary, and References.
- The report should be a minimum of 6 pages long, excluding figures, tables, and references.
- References can be in any style or format, so long as a consistent scholarly citation format is applied. Author name(s), journal or book title, article or chapter title, year of publication, volume and issue (where appropriate) and page numbers are essential. All bibliographic entries must contain a corresponding in-text citation. The addition of DOI (Digital Object Identifier) numbers is recommended but not essential.

The Master's Final Report is to be submitted to the research advisor and academic advisor at least TEN calendar days before grades are due.

A passing grade will be assigned to "27-675 Master's Report" based on approval of the report by the research advisor or department head.

## **Master of Science in Computational Materials Science & Engineering (CMSE)**

Course Requirements (120 units over 3 semesters):

- 24 units of MSE core courses
- 24 units of CMSE Coursework
  - 27-734 Methods of Computational Materials Science (Fall Semester – required)
  - 12 units of CMSE Elective Coursework
- 24 units of MSE graduate elective courses (27-7\*\*)
- 48 units of Approved Graduate Courses
  - Graduate level coursework in CIT, Tepper, CS, Mellon
  - Content must be related to Computational Materials Science and Engineering
  - 24-48 units of research units can be counted here

### **CMSE + Integrated Study in Computer Science**

In addition to graduate study in Computational MSE, students will also learn core and emerging skills in Computer Science, and the ability to implement and practice advanced computational-based methods applied to engineering. CMSE + ICS is a highly competitive master's program for engineers with a background in programming and computation. The MS in CMSE and Integrated Study in CS is a four-semester program where you will complete a minimum of 180 units –120 units for CMSE + 60 units of approved SCS courses.

Summer semesters are not considered part of the required semester and students cannot transfer into this program once already enrolled in another of MSE's MS programs.

*Course Requirements: 60 units of Computer Science coursework:*

#### **Required CS Courses:**

**24 units of Core CS;** 1 course taken each of the first 2 semesters:

- 15-513, Introduction to Computer Systems (12 units)
- 17-514, Principles of Software Construction: Objects, Design, and Concurrency (12 units)

#### **36 units of CS graduate elective courses**

The remaining SCS courses, taken during semester three and four will be electives

Example courses that have been approved for MSE students: 16-720 Computer Vision;

10-601 Introduction to Machine Learning; 11-663 Applied Machine Learning

#### **Completion Timelines**

MS in CMSE - The average grade of the course work shall be at least a B (3.0), and the student may choose any 72-120 of the first 132 units attempted to compute the average course grade.

## **Master of Science in Additive Manufacturing (AM)**

The degree requirements include 96 units to be completed as follows:

### **Course Requirements**

- 36 units of (3) core courses 39-601, 39-602 and 39-603, *along with their corresponding cross-listings in Mechanical Engineering or Materials Science & Engineering are described below.*
  - *Students must take the two core courses in the first semester and the laboratory course in the second semester.*
- 24 units of additive breadth\*
- 24 units of disciplinary concentration\*
- 12 units of breadth elective\*

*\*Electives must be pre-approved by the student's academic advisor.*

### **Seminars**

To broaden their education, students in the MSAM program are encouraged to attend any of the seminars that are typically offered each week in all engineering and science departments.

### **Grade Requirements**

- All students must achieve a B average in order to graduate.
- Course units with a grade below C will not be counted towards the degree.
- Students must be registered for a minimum of 48 units to be registered full-time each semester.
- Agreement of the MSAM advisor must be obtained for a student to take more than 60 units in a given semester.

The formal course requirements of the Master of Science in Additive Manufacturing (MSAM) degree are similar to those of the existing MS programs: 36 units of additive manufacturing core, 24 units of additive breadth, 24 units of disciplinary concentration, and 12 units of breadth elective. The total is 96 units.

The required three Additive Core courses are managed by the MSAM program; course descriptions are provided below. Breadth and Elective courses are offered by other engineering departments, and these courses are updated based on what is available each semester. The MSAM program leverages CIT's significant faculty expertise and strengths in advanced manufacturing. The required three Additive Core courses ensure that students gain the knowledge of and grounding in additive manufacturing specifically. The two required Additive Breadth courses explore design, commercialization and computational materials topics in the context of AM applications. The technical depth in engineering is ensured by the disciplinary concentration that the student selects. The breadth elective gives flexibility and leverages the interdisciplinary strengths of CMU.

### **MSAM Degree comprises 96 units & breakdown by course type**

<b>Course type</b>	<b>Course numbers</b>	<b>Units/ Course</b>	<b>Total Units</b>
Three (3) Core Courses in additive manufacturing, each 12 units, required	<b>39-601/24-632 Additive Manufacturing Processing and Product Development</b> <b>39-602/27-703 Materials Science for Additive Manufacturing</b>  <b>39-603 Additive Manufacturing Laboratory</b>	12 units each	36
Breadth Courses targeting additive manufacturing ( <i>choose two</i> )	<b>Example Courses:</b> <b>24-787 Artificial Intelligence and Machine Learning for Engineering Design</b>  <b>24-680/19-670 Quantitative Entrepreneurship: Analysis for New Technology Commercialization</b>  <b>09-860 Special Topics in Computational Chemistry: Machine Learning for Experimentalists</b>  <b>27-792 Solidification Processing</b>  <b>12-709 Data Analytics for Engineered Systems</b>  <b>24-651 Material Selection for Engineers</b>  <b>42-612, 27-720 Tissue Engineering.</b>	12 units each	24
Existing courses in CIT approved as electives	Chemical Engineering, Civil & Environmental Engineering, Materials Science & Engineering, Mechanical Engineering, Engineering & Public Policy, Electrical & Computer Engineering	6 or 12	24
Breadth Electives	Graduate level engineering courses, and limited pre-approved non-engineering graduate classes	6 or 12	12
<b>TOTAL UNITS</b>			<b>96</b>



## General Rules for the MS Program

- All students must maintain a B (3.0) average to graduate.
- Course units with a grade lower than C (2.0) are not acceptable toward the degree requirements.
- Grades in approved projects may not be used in calculation of the B (3.0) average.
- Grades in approved projects must be B (3.0) or above to count towards the unit calculation for graduation.
- A student is considered full time at 36 units. A typical student enrolls in 48 units per semester. By permission of the department head, students may take more than 51 units.
- The average grade of the course work shall be at least a B (3.0), and the student may choose any 72 of the first 120 units attempted to compute the average course grade.
- All full-time students must enroll, attend, and actively participate in the Graduate Seminar course (27-774) each semester in which they are registered.

## Transferring Between Programs

Students can apply to transfer from the course-based program to the research-based program by completing the form in Appendix D. Applications should be received by the academic advisor during the regular application cycle to be considered (October 15<sup>th</sup> or January 15<sup>th</sup>).

Students interested in the CMU MSE PhD program must also apply to the program to be considered. Students should consult the website for application deadlines, and should submit their application during the regular application cycle.

International students should also consult with OIE regarding any immigration policies or paperwork (including a new I-20) that may result from transferring degree programs.

## Statute of Limitations

As outlined in the Master's Students Statute of Limitations, <https://www.cmu.edu/policies/student-and-student-life/masters-students-statute-of-limitations.html> students will complete all requirements for the master's degree within a maximum of seven years from original matriculation as a master's student, or less if required by a more restrictive department, school or college policy. Once this time-to-degree limit has lapsed, the person may resume work towards a master's degree only if newly admitted to a currently offered master's degree program under criteria determined by that program.

Under extraordinary circumstances, such as leave of absence, military or public service, family or parental leave, or temporary disability, a school or college may, upon the relevant department's recommendation and with the written approval of the dean (or department for extension of the time to degree limit."designate), defer the lapse for a

period commensurate with the duration of that interruption. Students who are pursuing a master's degree as part-time students for all semesters of their program, as approved by their program, may also appeal to their program or department for extension of the time to degree limit.

## **Withdrawal of a Degree**

The university reserves the right to withdraw a degree even though it has been granted should there be discovery that the work upon which it was based or the academic records in support of it had been falsified. In such a case, the degree will be withdrawn promptly upon discovery of the falsification. The complete reference to this university policy is available at: <https://www.cmu.edu/policies/student-and-student-life/withdrawal-of-a-degree.html>.

## **Registration Policies and Procedures**

### **Course Registration**

Course registration is available at the HUB website. Full-time students should be registered for between 36-48 units per semester. Full-time students must request permission from program director to enroll in more than 48 units.

### **Drop/Add/Withdraw procedures**

Students taking undergraduate and Master's level courses must follow the procedures and deadlines for adding, dropping, or withdrawing from courses as identified on the academic calendar. Information can be found at <https://www.cmu.edu/hub/registrar/course-changes/index.html> There is a separate calendar for masters level courses.

### **Audit Courses and Pass/Fail Courses**

Auditing a course is "presence in the classroom without receiving academic credit". To audit a course, a student must register for the course and complete the course audit form (available through the Hub forms page) and submit before the deadline. Audit units count toward the maximum units, but do not count toward the degree requirements.

Pass/No Pass grades are an alternative to course audit as it indicates a greater level of engagement in the course than the audit. Students who wish to receive pass/fail grading must register for the course, obtain the permission of their advisor, and complete and return the [Pass/Fail Approval \(pdf\)](#) form to the University Registrar's Office by the pass/fail deadline for that course. Pass/No Pass grades will not be counted toward completion of MS degree requirements.

### **Part-time Status**

Part-time MS enrollment is an option available for students in special circumstances, such as students who would like to pursue an MS degree while maintaining external employment. Students should contact the MS program Director when applying to the program.

*\*Note that immigration regulations do not allow Carnegie Mellon University to issue visa documents for the part-time MS program.\**

### **Transfer Credit**

<https://www.cmu.edu/policies/student-and-student-life/masters-student-status.html>.

“Carnegie Mellon University offers students the opportunity to take courses for credit through a cross-registration program (see Pittsburgh Council on Higher Education (PCHE) and Cross-registration below) and through the receipt of transfer credit from other accredited institutions. The Carnegie Mellon University transcript will include information on such courses as follows: Carnegie Mellon courses and courses taken through the university's cross-registration program will have grades recorded on the transcript and be factored into the QPA. All other courses will be recorded on this transcript indicating where the course was taken, but without grades. Such courses will not be taken into account for academic actions, honors or QPA calculations.”

Suspended students may take courses elsewhere; however, they may receive transfer credit only if their college's and department's policies allow this.

### **Protocol for evaluation of transfer credit**

The Department of Materials Science and Engineering will accept up to 24 units (2 courses) of graduate transfer credit toward the M.S. degree in according to the policies outlined in the College of Engineering website:

<https://engineering.cmu.edu/education/academic-policies/graduate-policies/registration-grading-credit.html#transfer-credit-&-special-students>

Only official and final college or university transcripts will be accepted for the awarding of transfer credit. Grade reports, letters and the like are not acceptable. Official transcripts for the awarding of transfer credit will reside in the student's permanent academic folder in the department.

### **Transfer units will be accepted for:**

- Graduate level courses that have not been counted toward a previous degree at another university
- Courses with a 3.0 GPA or higher
- Courses that can be considered part of the M.S. graduate program in the MSE department
- Grades for transfer units will not be counted in the Carnegie Mellon GPA

*\*Students must have successfully completed at least 36 units in the graduate program before the units can be transferred.*

### **Policy on Grades for Transfer Units**

The Carnegie Mellon University transcript will include information on such courses as follows: Carnegie Mellon courses and courses taken through the university's cross-registration program will have grades recorded on the transcript and be factored into the QPA. All other courses will be recorded on this transcript indicating total units, but without grade. Such courses will not be taken into account for academic actions, honors or QPA calculations.

## **Additional Requirements**

### **Graduate Seminar**

All full-time graduate students must also enroll, attend and actively participate in the Graduate Seminar course, 27-774, each semester in which they are registered as full-time students. The goal of the seminar is to broaden each student's doctoral education through exposure to research performed by other graduate students in the department and by an international cadre of highly respected external scientists. Students are graded according to the following guidelines:

1. The grade for the course is PASS or FAIL.
2. To pass, the only requirement is attendance, with no more than two unexcused absences. Unexcused include doctor's appointments, vacations, and any other absences that are not research related. Absences resulting from conference trips, visits to research sponsors, etc. are excused, but the seminar coordinator must be notified.
3. Students with more than two unexcused absences are expected to make this up by attending seminars given in other departments or talks by external speakers at the University. Students should send the seminar coordinator the details of the talk before attending for approval.

### **English Language Requirement**

In a continuing effort to improve technical and interpersonal communication, it is the policy of the department that all international students, whose first language is not English, should attempt to pass the Intercultural Communications Center's International Teaching Assistant (ITA) test before graduation.

<https://www.cmu.edu/icc/language-certification/index.html>

## **Academic Integrity**

<https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html>

Students at Carnegie Mellon are engaged in intellectual activity consistent with the highest standards of the academy. The relationship between students and instructors and their shared commitment to overarching standards of respect, honor and transparency determine the integrity of our community of scholars. The actions of our students, faculty and staff are a representation of our university community and of the professional and personal communities that we lead. Therefore, a deep and abiding commitment to academic integrity is fundamental to a Carnegie Mellon education. Honesty and good faith, clarity in the communication of core values, professional conduct of work, mutual trust and respect, and fairness and exemplary behavior represent the expectations for ethical behavior for all members of the Carnegie Mellon community.

Please review the University Policy on Academic Integrity (<https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html>). The

policy includes the University expectations around academic integrity and provides definitions of cheating, plagiarism, and unauthorized assistance.

A review of the University's Academic Disciplinary Actions procedures (<https://www.cmu.edu/student-affairs/theword/academic-discipline/index.html>) is also recommended. These procedures outline the process for investigating, reporting, and adjudicating violations of the University Policy on Academic Integrity. The procedures also outline the appeal process.

### **Policy Statement**

In any manner of presentation, it is the responsibility of each student to produce her/his own original academic work. Collaboration or assistance on academic work to be graded is not permitted unless explicitly authorized by the course instructor(s). Students may utilize the assistance provided by Academic Development, the Global Communication Center, and the Academic Resource Center (CMU-Q) unless specifically prohibited by the course instructor(s). Any other sources of collaboration or assistance must be specifically authorized by the course instructor(s).

In all academic work to be graded, the citation of all sources is required. When collaboration or assistance is permitted by the course instructor(s) or when a student utilizes the services provided by Academic Development, the Global Communication Center, and the Academic Resource Center (CMU-Q), the acknowledgement of any collaboration or assistance is likewise required. This citation and acknowledgement must be incorporated into the work submitted and not separately or at a later point in time. Failure to do so is dishonest and is subject to disciplinary action.

Instructors have a duty to communicate their expectations including those specific to collaboration, assistance, citation and acknowledgement within each course. Students likewise have a duty to ensure that they understand and abide by the standards that apply in any course or academic activity. In the absence of such understanding, it is the student's responsibility to seek additional information and clarification.

### **Policy Violations**

***Cheating*** occurs when a student avails her/himself of an unfair or disallowed advantage which includes but is not limited to:

1. Theft of or unauthorized access to an exam, answer key or other graded work from previous course offerings.
2. Use of an alternate, stand-in or proxy during an examination.
3. Copying from the examination or work of another person or source.
4. Submission or use of falsified data.
5. Using false statements to obtain additional time or other accommodation.
6. Falsification of academic credentials.

***Plagiarism*** is defined as the use of work or concepts contributed by other individuals without proper attribution or citation. Unique ideas or materials taken from another source for either written or oral use must be fully acknowledged in academic work to be graded. Examples of sources expected to be referenced include but are not limited to:

1. Text, either written or spoken, quoted directly or paraphrased.
2. Graphic elements.
3. Passages of music, existing either as sound or as notation.
4. Mathematical proofs.
5. Scientific data.
6. Concepts or material derived from the work, published or unpublished, of another person.

**Unauthorized assistance** refers to the use of sources of support that have not been specifically authorized in this policy statement or by the course instructor(s) in the completion of academic work to be graded. Such sources of support may include but are not limited to advice or help provided by another individual, published or unpublished written sources, and electronic sources. Examples of unauthorized assistance include but are not limited to:

1. Collaboration on any assignment beyond the standards authorized by this policy statement and the course instructor(s).
2. Submission of work completed or edited in whole or in part by another person.
3. Supplying or communicating unauthorized information or materials, including graded work and answer keys from previous course offerings, in any way to another student.
4. Use of unauthorized information or materials, including graded work and answer keys from previous course offerings.
5. Use of unauthorized devices.
6. Submission for credit of previously completed graded work in a second course without first obtaining permission from the instructor(s) of the second course. In the case of concurrent courses, permission to submit the same work for credit in two courses must be obtained from the instructors of both courses.

Procedures for dealing with allegations of these policy violations are detailed in the university's Academic Disciplinary Action Procedures for Undergraduate Students and the Academic Disciplinary Action Procedures for Graduate Students, which are published in The WORD student handbook. Periodic review of these procedures will be overseen by the Dean of Student Affairs or her/his designee in consultation with Faculty Senate and the relevant student governing bodies. Any amendments to these procedures are subject to the approval of Faculty Senate. Additional guidelines and procedures for graduate students may exist at the college/department/program level, in which case they are communicated in the college/department/program graduate student handbook.

University-wide Protocol: <https://www.cmu.edu/student-affairs/ocsi/academic-integrity/grads.html>

## **University Policies**

### **Policy Against Sexual Harassment and Sexual Assault**

The University prohibits sex-based discrimination, sexual harassment, sexual assault, dating/ domestic violence and stalking. The University also prohibits retaliation against individuals who bring forward such concerns or allegations in good faith.

The University's Sexual Misconduct Policy is available at <https://www.cmu.edu/policies/administrative-and-governance/sexual-misconduct/index.html>

The University's Policy Against Retaliation is available at <https://www.cmu.edu/policies/administrative-and-governance/whistleblower.html>

If you have been impacted by any of these issues, you are encouraged to make contact with any of the following resources:

- Office of Title IX Initiatives
  - <http://www.cmu.edu/title-ix/>, 412-268-7125, [tix@cmu.edu](mailto:tix@cmu.edu)
- University Police
  - <https://www.cmu.edu/police/>, 412-268-2323

Additional resources and information can be found at: <https://www.cmu.edu/title-ix/resources-and-information/index.html>

### **Maternity Accommodation**

<https://www.cmu.edu/graduate/programs-services/maternity-accommodation-protocol.html>

Students whose anticipated delivery date is during the course of the semester may consider taking time away from their coursework and/or research responsibilities. Any student who gives birth to a child while engaged in coursework or research is eligible to take either a short-term absence or formal leave of absence. Students are encouraged to consult with relevant university faculty and staff as soon as possible as they begin making plans regarding time away.

- Students must contact the Office of the Dean of Student Affairs to register for Maternity Accommodations. Students will complete an information form and meet with a member of the Dean's Office staff to determine resources and procedures appropriate for the individual student.
  - Planning for the student's discussion with appropriate academic contact(s) (advisor, associate dean, etc.) may be reviewed during this meeting.
- Students in course work should consider options for the semester of the anticipated birth such as working with their course instructors to receive incomplete grades, electing to drop to part-time status or taking a full semester leave of absence.
- Students engaged in research must work with their faculty to develop plans for the research for the time they are away and for resuming upon return.

Master's students who receive an academic stipend funded by Carnegie Mellon are eligible to continue to receive stipend funding for up to six (6) weeks during a Short-Term Maternity Accommodation or a Formal Leave of Absence. Continued academic stipend

funding may be extended by two (2) weeks, for a total of eight (8) weeks, if an absence longer than six weeks is medically necessary. To receive this support students must be registered with the Office of the Dean of Students.

### **Consensual Intimate Relationship Policy Regarding Undergraduate Students**

<https://www.cmu.edu/policies/student-and-student-life/consensual-relationships.html>

This policy addresses the circumstances in which romantic, sexual or amorous relationships/interactions with undergraduate students, even if consensual, are inappropriate and prohibited. The purpose of this policy is to assure healthy professional relationships. This policy is not intended to discourage consensual intimate relationships unless there is a conflicting professional relationship in which one party has authority over the other as in the policy.



## Department Policies

### Grading Policy

The general grading policy used by the MSE Department is described on the [university grading policy page](#). The following are college-specific policies for graduate grading.

Project work may be given an S (Satisfactory) grade on a semester-by-semester basis, but a letter grade (A, A-, B+, B, B-, C+, C, C-, D+, D, or R) must be given in the final semester for a multi-semester project. The units with an S grade are counted toward degree requirements but are not included in computing the average grade.

[http://engineering.cmu.edu/current\\_students/graduates/policies.html#grading](http://engineering.cmu.edu/current_students/graduates/policies.html#grading)

### Process for Appealing Final Grades

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

Final grades will be changed only in exceptional circumstances and only with the approval of the instructor and the department, unit or program. Grading is a matter of sound discretion of the instructor and final grades are rarely changed without the consent of the instructor who assigned the grade. The following circumstances are the unusual exceptions that may warrant a grade appeal: (a) the final grade assigned for a course is based on manifest error (e.g. a clear error such as arithmetic error in computing a grade or failure to grade one of the answers on an exam), or (b) the faculty or staff member who assigned the grade did so in violation of a University policy.

### Academic Actions

In order to maintain good academic standing, MS students must attain minimum quality point averages for each semester (as well as cumulatively) and also maintain adequate progress toward completing graduation requirements. Minimum quality point average for good academic standing is 2.00. "Adequate academic progress towards graduation" generally means that students are successfully completing approximately 36-48 units per semester (depending on academic program) so that at the end of their standard program length they will have accumulated the minimum units required for graduation, have a cumulative QPA of at least 2.00, and have completed all degree requirements.

When a student fails to meet minimum performance criteria, it will result in academic probation. After two semesters of academic probation, the department may drop the student from the program.

### Graduate Student Time Off Policy

Students with graduate assistantships are expected to continue with their research during academic breaks (including summer months) with the exception of official University holidays\*.

#### **\*University Holidays:**

- *New Year's Day*
- *Martin Luther King Day*
- *Memorial Day*
- *Independence Day*
- *Labor Day*
- *Thanksgiving Day*
- *Day After Thanksgiving*
- *Day Before Christmas*
- *Christmas Day*
- *Day Before New Year's Day*

A supported graduate student who wants to take a short break (up to ten days) must get approval for that break from his/her advisor and, if required by the terms of the student's support package, must make up the work. Supported graduate students wishing to take longer periods of personal time off must do so without financial support and must receive approval from their advisor at least five weeks prior to the requested time off. The advisor will notify the Department's Business Office of any such arrangements so that an appropriate adjustment in the student's support package can be processed.

### **Enrollment Verification, Leave of Absence and Withdrawal**

Enrollment Services is the only University office that can provide an official letter of enrollment, official transcript and enrollment verification. Enrollment verification can be requested online through The HUB at <https://www.cmu.edu/hub/registrar/student-records/verifications/>.

University process for Taking & Returning from Leave of Absence:  
<https://www.cmu.edu/hub/registrar/leaves-and-withdrawals/>

University Process for withdrawal from program:  
<https://www.cmu.edu/hub/registrar/leaves-and-withdrawals/>

### **Change of Address**

The MSE Department encourages students to keep their current local address up-to-date in SIO. Students will be held responsible for any failure to receive official college notices due to not having a correct address on file; F-1 students may jeopardize their status if address information is not kept current. Students can change their address using SIO, which is available via the HUB website: <http://www.cmu.edu/hub/index.html>.

This supports a university initiative to have accurate living information for students for official program/department/college/university notices, the ability to facilitate wellness checks, ensure international students are in compliance with visa requirements, etc.

### **Departmental Purchases**

Each faculty member's administrator is authorized to place the order, but you must provide a complete order form. ***Students are not authorized buyers on behalf of the University.*** An account number for allocating the purchase to the proper contract can be supplied to you by your advisor. The same order form is used for both PNC Card & Purchase Orders – which you can obtain from your advisor's administrator.

Before presenting the order form to your advisor's administrator, please be sure to complete the "Requestor's Name" line and obtain your advisor's signature on the "Faculty's Signature" line.

### **Reimbursements**

You may be reimbursed for work-related purchases. These should have the approval of your faculty advisor prior to purchase. *Please note: CMU will not reimburse sales tax on any purchases you made even if the purchase was for university related work.* Present the receipt(s) and account number to your faculty advisor's administrator. ***Please note that it is university policy to submit a receipt for reimbursement within 30 days of incurring the expense. You are strongly recommended to sign up for expense reimbursement direct deposit.***

## Department Resources

### Graduate Ombudsperson

In the course of graduate studies, situations sometimes arise where students need advice on some aspect of their activities or interactions with others in the department, yet may not feel that it is appropriate to speak with their advisor or another member of the faculty. While close friends and family members are important resources in such situations, it is also true that their scope of experience might not include working toward a doctoral degree in an Engineering School. For this reason, the MSE department relies on a Graduate Ombudsperson. The Ombudsperson is available to consult with students about any situation that affects their work and, where appropriate, offer advice or attempt to resolve a problem. Conversations with the Ombudsperson are confidential and the Ombudsperson will not communicate information to the Department Head or other faculty members without the student's consent.

Dr. Betsy Clark (eac1@andrew.cmu.edu) serves as ombudsperson for graduate students to assist with difficult academic or personal situations where a confidential sounding board and/or an intermediary can be helpful.

### Financial Aid

The MSE Department does not offer graduate research assistantships or formal financial support for the M.S. programs. Students interested in outside sources of aid should visit the following website: <https://www.cmu.edu/sfs/financial-aid/index.html>

Graduate students should consult the graduate student financial aid information found on The HUB website: <http://www.cmu.edu/finaid/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.

U.S. citizens and permanent residents may complete the Free Application for Federal Student Aid (FAFSA) on line at <http://www.fafsa.ed.gov/>

Graduate students who find themselves in need of immediate funds for emergency situations should contact the Office of the Dean of Student Affairs, to inquire about an Emergency Student Loan. The loans are interest-free and for short periods of time (not longer than a month). <https://www.cmu.edu/sfs/billing/emergency-loans.html>

### Taxes

The deadline for local, state, and federal taxes is April 15. Questions about your tax status should be addressed to the [IRS](#) or the [Pennsylvania Department of Revenue](#). Although subject to federal taxes, student stipends are generally not assessed local or state taxes.

### Graduate Student Advisory Committee (GSAC)

GSAC consists of a group of students who volunteer to help in coordinating academic and social activities for other students, and provides a mechanism for communication and input to the Department on policy or other matters.

## **Miscellaneous Items of Interest**

### **Academic Calendar**

The Academic Calendar can be found at <https://www.cmu.edu/hub/calendar/index.html> and provides information on all deadlines including registration dates, class start dates, add/drop deadlines, exam dates and more.

### **General Office Procedures**

#### **Keys**

If you are working on a research project, your advisor must request a key for you for each specific lab.

#### **Mail**

You are assigned a mailbox at the end of the 3300 corridor of Wean Hall for receiving campus mail. If you have outgoing mail, either campus or regular, the postal clerk picks up the mail at 8:00 am.

#### **Addressing Campus Mail**

All campus mail should be addressed with the person's name, department, and building only.

Example:     First Name Last Name  
                 Materials Science and Engineering  
                 Wean Hall 3325

### **Carnegie Mellon's Mailing Address**

To ensure that mail and/or packages arrive to the department without any problems, you should advise that shippers address the package in the following way:

First Name Last Name  
Carnegie Mellon University  
5000 Forbes Avenue  
Materials Science and Engineering Department  
Wean Hall 3325  
Pittsburgh, PA 15213

If space does not allow for that many lines – you can omit the department.

### **Telephone Calls**

Campus calls

**You must dial “8” and only the last four digits of a campus number.**

Outside calls

**You must dial “9” when dialing an outside toll-free line.**

### **Copying and Scanning**

The department has 2 color copiers/scanners you can use for research related-work in Wean Hall or in Roberts “Take 5” area. These machines perform many functions such as scanning, two-sided copying, collation, reduction and enlargements.

## Appendix A Highlighted University Resources for Graduate Students

### **Key Resources for Graduate Student Support**

- Office of Graduate and Postdoc Affairs
- Office of the Dean of Students
- Center for Student Diversity and Inclusion
- Assistance for Individuals with Disabilities
- Eberly Center for Teaching Excellence and Educational Innovation
- Graduate Student Assembly
- Office of International Education
- Veterans and Military Community
- Ethics Reporting Hotline
- Policy Against Retaliation

### **Key Resources for Academic and Research Support**

- Computing and Information Resources
- Student Academic Success Center
- University Libraries
- Research at CMU
- Office of Research Integrity & Compliance

### **Key Resources for Health, Wellness & Safety**

- Counseling and Psychological Services
- University Health Service
- Campus Wellness
- Religious and Spiritual Life Initiatives
- University Police
- Shuttle and Escort Services

## **Office of Graduate and Postdoc Affairs**

[www.cmu.edu/graduate](http://www.cmu.edu/graduate); [grad-ed@cmu.edu](mailto:grad-ed@cmu.edu)

The Office of Graduate and Postdoc Affairs provides central support for all master's and doctoral students, as well as academic programs, with a focus on supporting graduate student success at Carnegie Mellon.

Examples of resources offered through the Office of Graduate and Postdoc Affairs include- but are not limited to:

- Website with university resources, contact information for CMU programs and services, calendar of events related to graduate students
- Bi-monthly newsletter to all graduate students with information on activities, resources and opportunities
- Professional Development Seminars and Workshops
- GSA/Provost Conference Funding Grants
- GSA/Provost Small Research Grants (GuSH)
- Consultations on issues related to the graduate student experience

The Office of Graduate and Postdoc Affairs also works with the colleges and departments by informing and assisting in developing policy and procedures relevant to graduate students and working with departments on issues related to graduate students. Additionally we partner with many other offices and organizations, such as the Graduate Student Assembly, to support the holistic graduate student educational experience.

## **Office of the Dean of Students**

<https://www.cmu.edu/student-affairs/dean>

The Office of the Dean of Students provides central leadership of the metacurricular experience at Carnegie Mellon including the coordination of student support. Vice President of Student Affairs and Dean of Students Gina Casalegno leads the Division of Student Affairs which includes the offices and departments listed below (not an exhaustive list).

Graduate students will find the enrollment information for Domestic Partner Registration and Maternity Accommodations in the Office of the Dean of Students or on their website. This Office also manages the Student Emergency Support Funding process. There are three forms of support funding for enrolled students: emergency student loans, maternity loans, and the Tartan Emergency Support Fund. These funds are made available through generous gifts of alumni and friends of the university as well as support from student organizations, Undergraduate Student Senate and the Graduate Student Assembly. Students will be provided with additional information about the various types of funding during a consultation meeting with a member of the Dean of Students team. Tuition costs are not eligible for Student Emergency Support Funding.

Additional resources for graduate students include College Liaisons and the Student Support Resources team. College Liaisons are senior members of the Division of Student Affairs who work with departments and colleges addressing student concerns across a wide range of issues. College Liaisons are identified on the student SIO page in the Important Contacts list. The Student Support Resources team offers an additional

level of support for students who are navigating any of a wide range of life events. Student Support Resources staff members work in partnership with campus and community resources to provide coordination of care and support appropriate to each student's situation.

The Division of Student Affairs includes (not an exhaustive list):

- Athletics, Physical Education and Recreation
- Career and Professional Development Center (CPDC)
- Center for Student Diversity and Inclusion
- Cohon University Center
- Counseling & Psychological Services (CaPS)
- Dining Services
- Office of Community Standards and Integrity (OCSI)
- Office of Student Leadership, Involvement, and Civic Engagement (SLICE)
- University Health Services (UHS)
- Wellness Initiatives

### **Center for Student Diversity & Inclusion**

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

Diversity and inclusion have a singular place among the values of Carnegie Mellon University. The Center for Student Diversity & Inclusion actively cultivates a strong, diverse and inclusive community capable of living out these values and advancing research, creativity, learning and development that changes the world.

The Center offers resources to enhance an inclusive and transformative student experience in dimensions such as access, success, campus climate and intergroup dialogue. Additionally, the Center supports and connects historically underrepresented students and those who are first in their family to attend college in a setting where students' differences and talents are appreciated and reinforced, both at the graduate and undergraduate level. Initiatives coordinated by the Center include, but are not limited to:

- First generation/first in family to attend college programs
- LGBTQ+ Initiatives
- Race and ethnically-focused programs, including Inter-University Graduate Students of Color Series (SOC) and PhD SOC Network
- Women's empowerment programs, including Graduate Women's Gatherings (GWGs)
- Transgender and non-binary student programs

### **Assistance for Individuals with Disabilities**

<http://www.cmu.edu/disability-resources/>

The Office of Disability Resources at Carnegie Mellon University has a continued mission to provide physical, digital, and programmatic access to ensure that students with disabilities have equal access to their educational experience. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the

Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations can begin the process through [Disability Resources' secure online portal](#) or email [access@andrew.cmu.edu](mailto:access@andrew.cmu.edu) to begin the interactive accommodation process.

Students with physical, sensory, cognitive, or emotional disabilities are encouraged to self-identify with the Office of Disability Resources and request needed accommodations. Any questions about the process can be directed to [access@andrew.cmu.edu](mailto:access@andrew.cmu.edu), or call (412) 268-6121.

### **Eberly Center for Teaching Excellence & Educational Innovation**

[www.cmu.edu/teaching](http://www.cmu.edu/teaching)

We offer a wide variety of confidential, consultation services and professional development programs to support graduate students as teaching assistants or instructors of record during their time at Carnegie Mellon University and as future faculty members at other institutions. Regardless of one's current or future teaching context and duties, our goal is to disseminate evidence-based teaching strategies in ways that are accessible and actionable. Programs and services include campus-wide Graduate Student Instructor Orientation events and our Future Faculty Program, both of which are designed to help participants be effective and efficient in their teaching roles. The Eberly Center also assists departments in creating and conducting customized programs to meet the specific needs of their graduate student instructors. Specific information about Eberly Center support for graduate students is found at [www.cmu.edu/teaching/graduatestudentsupport/index.html](http://www.cmu.edu/teaching/graduatestudentsupport/index.html).

### **Graduate Student Assembly**

[www.cmu.edu/stugov/gsa/index.html](http://www.cmu.edu/stugov/gsa/index.html)

The Graduate Student Assembly (GSA) is the branch of Carnegie Mellon Student Government that represents, and advocates for the diverse interests of all graduate students at CMU. GSA is composed of representatives from the different graduate programs and departments who want to improve the graduate student experience at the different levels of the university. GSA is funded by the Student Activities Fee from all graduate students. GSA passes legislation, allocates student activities funding, advocates for legislative action locally and in Washington D.C. on behalf of graduate student issues and needs, and otherwise acts on behalf of all graduate student interests. Our recent accomplishments are a testament to GSA making a difference, and steps to implementing the vision laid out by the strategic plan.

<https://www.cmu.edu/stugov/gsa/About-the-GSA/Strategic-Plan.html>.

GSA offers an expanding suite of social programming on and off-campus to bring graduate students from different departments together and build a sense of community. GSA is the host of the Graduate Student Lounge on the 3<sup>rd</sup> floor of the Cohon University Center- a great place to study or meet up with friends. GSA also maintains a website of graduate student resources on and off-campus. Through GSA's continued funding for professional development and research conferences, the GSA/Provost Conference Funding Program and GSA/Provost GuSH Research Grants are able to run, as managed by the Graduate Education Office. As we move forward, GSA will continue to rely on your feedback to improve the graduate student experience at CMU. Feel free to contact us at [gsa@cmu.edu](mailto:gsa@cmu.edu) to get involved, stop by our office in the Cohon University Center Room 304 or become a representative for your department.



## **Office of International Education (OIE)**

<http://www.cmu.edu/oie/>

Carnegie Mellon hosts international graduate and undergraduate students who come from more than 90 countries. The Office of International Education (OIE) is the liaison to the University for all non-immigrant students and scholars, as well the repository for study abroad opportunities and advisement. OIE provides many services including: advising on personal, immigration, study abroad, academic, and social and acculturation issues; presenting programs of interest such as international career workshops, tax workshops, and cross-cultural and immigration workshops; international education and statistics on international students in the United States; posting pertinent information to students through email and the OIE website, and conducting orientation and pre-departure programs.

## **Veterans and Military Community**

<http://www.cmu.edu/veterans/>

Military veterans are a vital part of the Carnegie Mellon University community. Graduate students can find information on applying for veteran education benefits, campus services, veteran's groups at CMU, and non-educational resources through the Veterans and Military Community website. There are also links and connections to veteran resource in the Pittsburgh community. The ROTC and Veteran Affairs Coordinator can be reached at [uro-vaedbenefits@andrew.cmu.edu](mailto:uro-vaedbenefits@andrew.cmu.edu) or 412-268-8747.

## **Carnegie Mellon Ethics Hotline**

<https://www.cmu.edu/hr/resources/ethics-hotline.html>

The health, safety and well-being of the university community are top priorities at Carnegie Mellon University. CMU provides a hotline that all members of the university community should use to confidentially report suspected unethical activity relating to areas below:

- Academic and Student Life
- Bias Reporting
- Environmental Health and Safety
- Financial Matters
- High-Risk Incident
- Human Resource Related
- Information Systems
- Research
- Threat of Business Interruption
- Threat of Violence or Physical Harm
- Title IX

Students, faculty and staff can anonymously file a report by calling 877-700-7050 or visiting [www.reportit.net](http://www.reportit.net) (user name: tartans; password: plaid). All submissions are reported to appropriate university personnel.

**The hotline is NOT an emergency service. For emergencies, call University Police at 412-268-2323.**

## **Policy Against Retaliation**

It is the policy of Carnegie Mellon University to protect from retaliation any individual who makes a good faith report of a suspected violation of any applicable law or regulation, university Policy or procedure, any contractual obligation of the university, and any report made pursuant to the Carnegie Mellon University Code of Business Ethics and Conduct.

Additional details regarding the Policy Against Retaliation are available at <https://www.cmu.edu/policies/administrative-and-governance/whistleblower.html>

## **Key Offices for Academic & Research Support**

### **Computing and Information Resources**

[www.cmu.edu/computing](http://www.cmu.edu/computing)

Computing Services maintains and supports computing resources for the campus community, including the campus wired and wireless networks, printing, computer labs, file storage, email and software catalog. As members of this community, we are all responsible for the security of these shared resources. Be sure to review the Safe Computing (<https://www.cmu.edu/computing/safe/>) section and the University Computing Policy (<https://www.cmu.edu/policies/information-technology/computing.html>)

Visit the Computing Services website (<https://www.cmu.edu/computing/>) to learn more. For assistance the Computing Services Help Center is available at 412-268-4357 (HELP) or [it-help@cmu.edu](mailto:it-help@cmu.edu).

### **Student Academic Success Center**

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

Student Academic Support Programs

### ***Tartan Scholars***

- The Tartan Scholars program was created to provide support for limited resourced students through an intentional first year undergraduate experience with the goals of enhancing the cohort's skill and community building through a lens of self - authorship, growth mindset, and a sense of belonging. As part of the Student Academic Success Center, Tartan Scholars are invited to join the University and participate in summer initiatives and pre-orientation activities prior to their first year at the University.
- There are opportunities for graduate students to serve as accountability, learning, or development partners, workshop facilitators, and presenters. Contact Diane Hightower at [ddhight@andrew.cmu.edu](mailto:ddhight@andrew.cmu.edu) for more details.

### ***Learning Support***

- **Supplemental Instruction:** Supplemental Instruction (SI) is an academic support

model that utilizes peer-assisted study sessions. The SI program provides regularly scheduled review sessions on course materials outside the classroom. SI is a non-remedial approach to learning as the program targets high-risk courses and is available in select courses based on data related to past student performance and feasibility.

- **Peer Tutoring:** Weekly Tutoring Appointments are offered in a one-on-one and small group format to students from any discipline who need assistance with a course that may not be supported by our other services. Weekly appointments give students the opportunity to interact regularly with the same tutor to facilitate deeper understanding of concepts. Students can register online through the Student Academic Success website.
- **Academic Coaching:** Academic Coaching provides holistic one-on-one peer support and group workshops to help students find and implement their conditions for success. We assist students in improving time management, productive habits, organization, stress management, and study skills. Students will request support through the Academic Success Center website and attend in-person meetings or meet using video and audio conferencing technology to provide all students with support.
- **“Just in Time” Workshops:** The Student Academic Success team is available to partner with instructors and departments to identify skills or concepts that would benefit from supplemental offerings (workshops, boot camps) to support students’ academic success and learning. We are eager to help convene and coordinate outside of the classroom skill-building opportunities that can be open to any student interested in building skill or reinforcing course concept mastery.
- **Study Partners:** Support for students to create and benefit from their own study groups: The Student Academic Success team assists students in forming and benefiting from peer study groups, whereby all students can reap the benefits of peer-to-peer learning, student agency, and collaboration skill development. Staff from the Student Academic Success Center will be made available to instructors and students to assist with the formation of peer-led study groups. This level of support is open to any course where the instructor requests or agrees such support is appropriate and students are interested in both leading and participating.

### ***Language and Cross-cultural Support***

More than 60% of graduate students at Carnegie Mellon are international students, and others are nonnative speakers of English who have attended high school or undergraduate programs in the US. Many of these students want to hone their language and cross-cultural skills for academic and professional success. Students can choose from sessions on

- how to give a strong presentation,
- writing academic emails,
- expectations and strategies for clear academic writing,
- how to talk about yourself as a professional in the U.S.,
- developing clearer pronunciation,
- using accurate grammar,
- building fluency, and more.
- Students can make an appointment with a Language Development Specialist to get individualized coaching on language or cross-cultural issues.

The Student Academic Success Center is also charged with certifying the language of International Teaching Assistants (ITAs), ensuring that nonnative English speakers have the language proficiency needed to succeed as teaching assistants in the Carnegie Mellon classroom. Students preparing to do an ITA Certification should plan to take classes offered by the language support team at the SASC from the beginning of their first semester. Start by contacting the language support team at the SASC website or attend a Language Support Orientation at the SASC or in your department.

### **University Libraries**

**[www.library.cmu.edu](http://www.library.cmu.edu)**

The University Libraries offers a wide range of information resources and services supporting graduate students in course-work, research, teaching, and publishing. The library licenses and purchases books, journals, media and other needed materials in various formats. Library liaisons, consultants and information specialists provide in-depth and professional assistance and advice in all-things information - including locating and obtaining specific resources, providing specialized research support, advanced training in the use and management of data. Sign up for workshops and hands-on topic-specific sessions such as data visualization with Tableau, cleaning data with OpenRefine, and getting started with Zotero. Weekly drop-in hours for Digital Humanities and for Research Data Research Management are scheduled during the academic year. Start at the library home page to find the books, journals and databases you need; to identify and reach out to the library liaison in your field; to sign up for scheduled workshops; and to connect with consultants in scholarly publishing, research data management, and digital humanities.

### **Research at CMU**

**[www.cmu.edu/research/index.shtml](http://www.cmu.edu/research/index.shtml)**

The primary purpose of research at the university is the advancement of knowledge in all fields in which the university is active. Research is regarded as one of the university's major contributions to society and as an essential element in education, particularly at the graduate level and in faculty development. Research activities are governed by several university policies. Guidance and more general information is found by visiting the Research at Carnegie Mellon website.

### **Office of Research Integrity & Compliance**

**[www.cmu.edu/research-compliance/index.html](http://www.cmu.edu/research-compliance/index.html)**

The Office of Research Integrity & Compliance (ORIC) is designed to support research at Carnegie Mellon University. The staff work with researchers to ensure research is conducted with integrity and in accordance with federal and Pennsylvania regulation. ORIC assists researchers with human subject research, conflicts of interest, responsible conduct of research, export controls, and institutional animal care & use. ORIC also provides consultation, advice, and review of allegations of research misconduct.

## **Key Offices for Health, Wellness & Safety**

### **Counseling & Psychological Services**

<https://www.cmu.edu/counseling/>

Counseling & Psychological Services (CaPS) affords the opportunity for students to talk privately about academic and personal concerns in a safe, confidential setting. An initial consultation at CaPS can help clarify the nature of the concern, provide immediate support, and explore further options if needed. These may include a referral for counseling within CaPS, to another resource at Carnegie Mellon, or to another resource within the larger Pittsburgh community. CaPS also provides workshops and group sessions on mental health related topics specifically for graduate students on campus. CaPS services are provided at no cost. Appointments can be made in person, or by telephone at 412-268-2922.

### **Health Services**

[www.cmu.edu/HealthServices/](http://www.cmu.edu/HealthServices/)

University Health Services (UHS) is staffed by physicians, advanced practice clinicians and registered nurses who provide general medical care, allergy injections, first aid, gynecological care and contraception as well as on-site pharmaceuticals. The CMU Student Insurance Plan covers most visit fees to see the physicians and advanced practice clinicians & nurse visits. Fees for prescription medications, laboratory tests, diagnostic procedures and referral to the emergency room or specialists are the student's responsibility and students should review the UHS website and their insurance plan for detailed information about the university health insurance requirement and fees.

UHS also has a registered dietician and health promotion specialists on staff to assist students in addressing nutrition, drug and alcohol and other healthy lifestyle issues. In addition to providing direct health care, UHS administers the Student Health Insurance Program. The Student Health Insurance plan offers a high level of coverage in a wide network of health care providers and hospitals. Appointments can be made by visiting UHS's website, walk-in, or by telephone, 412-268-2157.

### **Campus Wellness**

<https://www.cmu.edu/wellness/>

At Carnegie Mellon, we believe our individual and collective well-being is rooted in healthy connections to each other and to campus resources. The university provides a wide variety of wellness, mindfulness and connectedness initiatives and resources designed to help students thrive inside and outside the classroom. The BeWell@CMU e-newsletter seeks to be a comprehensive resource for CMU regarding all wellness-inspired events, announcements and professional and personal development opportunities. Sign up for the Be Well monthly newsletter via <https://bit.ly/BeWellNewsletter> or by contacting the Program Director for Student Affairs Wellness Initiatives, at [alusk@andrew.cmu.edu](mailto:alusk@andrew.cmu.edu).

### **Religious and Spiritual Life Initiatives (RSLI)**

[www.cmu.edu/student-affairs/spirituality](http://www.cmu.edu/student-affairs/spirituality)

Carnegie Mellon is committed to the holistic growth of our students, including creating opportunities for spiritual and religious practice and exploration. We have relationships with local houses of worship from various traditions and many of these groups are

members of CMU's Council of Religious Advisors. We also offer programs and initiatives that cross traditional religious boundaries in order to increase knowledge of and appreciation for the full diversity of the worldview traditions. Our RSLI staff are here to support students across the spectrum of religious and spiritual practice and would be more than happy to help you make a connection into a community of faith during your time at CMU.

### **University Police**

<http://www.cmu.edu/police/>

412-268-2323 (emergency only), 412-268-6232 (non-emergency)

The University Police Department is located at 300 South Craig Street (entrance is on Filmore Street). The department's services include police patrols and call response, criminal investigations, fixed officer and foot officer patrols, event security, and crime prevention and education programming as well as bicycle and laptop registration. Visit the department's website for additional information about the staff, emergency phone locations, crime prevention, lost and found, fingerprint services, and annual statistic reports.

Carnegie Mellon University publishes an annual campus security and fire safety report describing the university's security, alcohol and drug, sexual assault, and fire safety policies and containing statistics about the number and type of crimes committed on the campus and the number and cause of fires in campus residence facilities during the preceding three years. Graduate students can obtain a copy by contacting the University Police Department at 412-268-6232. The annual security and fire safety report is also available online at

<https://www.cmu.edu/police/annualreports/>.

### **Shuttle and Escort Services**

Parking and Transportation coordinates the Shuttle Service and Escort Service provided for CMU students, faculty, and community. The [Shuttle & Escort website](#) has full information about these services, stops, routes, tracking and schedules.

## Appendix B Masters Program Internship Plan



### Masters Program Summer Internship Plan

Student Name \_\_\_\_\_  
Degree Program \_\_\_\_\_  
Organization Providing Internship \_\_\_\_\_  
Organization Address \_\_\_\_\_

#### Supervisor Information

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Phone \_\_\_\_\_  
Email \_\_\_\_\_

#### Period of Assignment

Begin Date \_\_\_\_\_ End Date \_\_\_\_\_

Internship Title \_\_\_\_\_  
Website Listing \_\_\_\_\_

Internship Description

#### Approval

Date

Student Signature

Academic Advisor Signature

Research Advisor Signature  
(research students only)

## Appendix C Masters Program Internship Report

**Carnegie Mellon University**  
Materials Science & Engineering

### **Masters Program Summer Internship Report**

*This form is to be accompanied by a 1-2 page summary report of the internship experience.*

Student Name \_\_\_\_\_

Degree Program \_\_\_\_\_

Organization Providing Internship \_\_\_\_\_

Organization Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### **Supervisor Information**

Name \_\_\_\_\_

Title \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

#### **Period of Assignment:**

Begin Date \_\_\_\_\_

End Date \_\_\_\_\_

#### **Approval**

**Date**

Student Signature \_\_\_\_\_

Academic Advisor \_\_\_\_\_

Signature \_\_\_\_\_

Research Advisor \_\_\_\_\_

Signature \_\_\_\_\_



## Appendix D Transfer Application

Name \_\_\_\_\_  
Andrew ID \_\_\_\_\_  
Current Semester \_\_\_\_\_  
Semester of Enrollment in new MS program \_\_\_\_\_

**Using 100-300 words for each question, answer the essay questions below. Make sure to include why you are choosing to transfer to the research masters program.**

### Essay Questions:

1. Other than reputation, what most interests you about attending the Materials Science and Engineering Department at CMU?
2. What are your goals after you complete your degree, and how will our graduate program help you achieve your immediate and longer-term future career objectives?
3. What specific research is of interest to you and how would our program enable you to pursue your goals?

4. Describe how your work, research, educational or other life experiences have prepared you for graduate study in this program?
5. What sets you apart from other applicants? eg. Have you done significant community service? Have you published peer-reviewed research? Have you received significant awards?