

INSTITUTE FOR SOFTWARE RESEARCH
SOFTWARE ENGINEERING PROFESSIONAL
PROGRAMS

2019-2020
MSE STUDENT HANDBOOK

MASTER OF SOFTWARE ENGINEERING
MASTER OF SOFTWARE ENGINEERING – SCALABLE SYSTEMS
MASTER OF SOFTWARE ENGINEERING – EMBEDDED SYSTEMS
MASTER OF SCIENCE IN INFORMATION TECHNOLOGY – SOFTWARE ENGINEERING

Updated: July 2019

Note: The information contained in this graduate handbook focuses on the resources and locations available at the Carnegie Mellon Pittsburgh Campus.

DEDICATION

To the late Curtis M. Scott (MSE '92), who had a desire to help incoming students and took it upon himself to write *Uncle Rusty's Guide to the Telesoft Environment*.

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WELCOME FROM THE SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS

On behalf of the Master of Software Engineering Professional Programs directorship, faculty, administration, and its extended community of students and alumni, we take this opportunity to welcome you to Carnegie Mellon! Our programs are designed for professionals who are eager to expand their knowledge of the discipline. It is our overarching goal to educate Agents of Change — individuals who will lead the industry and improve the state of the practice in the years to come.

Through its challenging curriculum, innovative courses, and technical emphasis, students learn and apply practices, tools, and techniques in a real-world project environment. Our academic standards are high, with an emphasis on state-of-the-art research and educational breadth in software engineering, computer science, robotics, embedded and distributed systems, human-computer interaction, and language and information technologies. While those admitted to our programs come to us technically strong, they leave with an even deeper understanding of process, development, architecture, methodology, best practices, and team dynamics.

As a newly-admitted student in our professional master's program, you should be optimistic about your future career prospects. We look forward to learning more about you — your plans and your dreams, your aspirations, and your reality. We are excited about working with you on a plan to attain those short- and longer-term goals.

Welcome to Carnegie Mellon! We are certain that you will flourish here in our academic community, and enjoy all that Pittsburgh has to offer you in the months to come.

UNIVERSITY GENERAL INFORMATION

GRADUATE STUDENT HANDBOOK OVERVIEW

This document is intended to be an informal source of information for students in the Software Engineering Professional Programs in the School of Computer Science. Herein, you can expect to find information on a broad range of policies, procedures, and university and program-specific resources, ranging from academic policies to campus dining options. We hope that you will find the guide useful. Be aware that the Software Engineering Professional Programs adheres to all university guidelines and procedures as detailed below.

UNIVERSITY POLICIES AND 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](#)
- [Academic Integrity Website](#)
- [University Policies Website](#)
- [Graduate Education Website](#)

The process for handling various academic and non-academic policy violations or other grievances vary from grievance to grievance. A **Summary of Graduate Student Appeal and Grievance Procedures** can be reviewed at the [Graduate Education website](#).

The process for addressing alleged violations of non-academic policies and appeal procedures can be found on the [University Policies website](#) and [The Word](#).

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, 412-268-2056.

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

The [Statement of Assurance](#) can also be found online.

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.

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, and commitments kept.

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

The discovery, advancement and communication of knowledge is 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 to 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](#) is also available online.

UNIVERSITY POLICY ON PLAGIARISM AND CHEATING

In the midst of self-exploration, the high demands of a challenging academic environment can create situations where some students have difficulty exercising good judgment. Academic challenges can provide many opportunities for high standards to evolve if students actively reflect on these challenges and if the community supports discussions to aid in this process. It is the responsibility of the entire community to establish and maintain the integrity of our university.

Carnegie Mellon University educates its students to become professionals who will serve society with integrity. The university also creates and disseminates new knowledge and expressions of knowledge in ways that benefit society. Carnegie Mellon strives to serve the changing needs of society through the three primary goals outlined in its mission statement: to create and disseminate knowledge and art through research and artistic expression, teaching and learning and transfer to society, to serve students by teaching them leadership and problem-solving skills, and the values of quality, ethical behavior, responsibility to society and commitments to work, to pursue the advantages provided by a diverse community, open to the exchange of ideas, where discovery and artistic creativity can flourish.

In any presentation, creative, artistic or research, it is the ethical responsibility of each student to identify the conceptual sources of the work submitted. Failure to do so is dishonest and is the basis for a charge of cheating or plagiarism, which is subject to disciplinary action.

The University's [expectations pertaining to academic integrity](#) are online, as is the [Carnegie Mellon Code](#).

STATUTE OF LIMITATIONS

As outlined in Carnegie Mellon's Master's Students Statute of Limitations, students who have matriculated at Carnegie Mellon beginning Fall 2012 will complete all requirements for the master's degree within a maximum of five years from original matriculation as a master's student, per program-specific policy. Once this time-to-degree limit has lapsed, a student 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 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.

SAFEGUARDING EDUCATIONAL EQUITY

Policy against Sexual Harassment and Sexual Assault

Sexual harassment and sexual assault are prohibited by CMU, as is retaliation for having brought forward a concern or allegation in good faith. The [sexual harassment and sexual assault policy](#) can be read in its entirety online.

If you believe you have been the victim of sexual harassment or sexual assault, you are encouraged to use any of the following resources:

- [Office of Title IX Initiatives](#), 412-268-7125
- [Sexual Harassment Advisors](#);
- [What to do if You or Someone You Know is a Survivor Sexual Assault or Sexual Violence](#);
- [Sexual Harassment Process and Title IX Coordinators](#);
- [University Police](#), 412-268-2323
- [University Health Services](#), 412-268-2157
- [Counseling and Psychological Services](#), 412-268-2922

Maternity Accommodation

Students whose anticipated delivery date is during the course of the semester may consider taking time away from their coursework and/or research responsibilities. All female students who give birth to a child while engaged in coursework or research are eligible to take either a short-term absence or formal leave of absence. Students in course work should consider either working with their course instructor to receive incomplete grades, or elect to drop to part-time status or to take a 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.

Students are encouraged to consult with relevant university faculty and staff as soon as possible as they begin making plans for 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. Plans for the student's absence and discussions with her academic contact(s) (advisor, associate dean, etc.) will be reviewed during this meeting.

You may read more about the [Student Maternity Accommodation Protocol](#) online.

CARNEGIE MELLON STUDENT HANDBOOK: THE WORD

[The WORD](#) is Carnegie Mellon University's student online 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 them achieve their full potential as a member of the Carnegie Mellon community. Students are encouraged to bookmark the webpage and refer to it often.

[University policies](#) can be found in full online.

KEY OFFICES FOR GRADUATE STUDENT SUPPORT

GRADUATE EDUCATION OFFICE

The [Graduate Education Office](#) provides central support for all graduate students with a focus on their academic experience at Carnegie Mellon. The goals of the office are to support, advise, and guide individual graduate students as they work to complete their degrees and to provide resources which will enhance the student's professional development experience.

Resources offered through the Graduate Education Office 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 email to all graduate students with information on activities, resources, and opportunities
- Professional Development seminars and workshops
- Graduate Student Assembly (GSA)/Provost Conference Funding Grants
- GSA/Provost Small Research Grants (GuSH)
- Consultations on all issues related to the graduate student experience

The Graduate Education Office is directed by [Suzie Laurich-McIntyre](#), Ph.D., Assistant Vice Provost for Graduate Education, who offers personalized consultations with graduate students to support their academic success, connects them with relevant resources, and clarifies university level policies.

The Graduate Education Office also works with the colleges and departments by informing and assisting in forming policy and procedures relevant to graduate students and working with departments on issues related to graduate students. Additionally, they partner with many other offices and organizations, such as the Graduate Student Assembly, to support the advancement of graduate students.

OFFICE OF THE DEAN OF STUDENTS

The [Office of the Dean of Students](#) provides central leadership of the meta-curricular experience at Carnegie Mellon, including the coordination of student support. Vice President and Dean of Student Affairs and Dean of Students Gina Casalegno leads the division of Student Affairs which includes the following offices and departments (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 and 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

Graduate students will find the enrollment information for **Domestic Partner Registration** and **Maternity Accommodations** in the Office of the Dean of Student Affairs and on the website. The Office of the Dean of Student Affairs also manages the **Emergency Student Loan (ESLs)** process. The Emergency Student Loan service is made available through the generous gifts of alumni and friends of the university. The Emergency Student Loan is an interest-free, emergency-based loan repayable within 30 days. Loans are available to enrolled students for academic supplies, medication, food or other expenses not able to be met due to unforeseeable circumstances.

The Office of Integrity and Community Standards also provides consultation, support, resources and follow-up on questions and issues of [Academic Integrity](#).

College Liaisons are senior members of the Divisions 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 Contact list.

CENTER FOR STUDENT DIVERSITY AND INCLUSION

Diversity and inclusion have a singular place among the values of Carnegie Mellon University. The [Center for Student Diversity and 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 the 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

The [Office of Disability Resources](#) at Carnegie Mellon has a continued mission to provide physical and programmatic campus access to all events and information within the Carnegie Mellon community. We work to ensure that qualified individuals receive reasonable accommodations as guaranteed by the Americans with Disabilities Act (ADA) and Sections 503 and 504 of the Rehabilitation Act of 1973. Students who would like to receive accommodations can begin the process through the [Disability Resources secure online portal](#) or email access@andrew.cmu.edu to begin the interactive accommodation process.

Students with 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 [Catherine Getchel](#), 412-268-6121.

EBERLY CENTER FOR TEACHING EXCELLENCE AND EDUCATIONAL INNOVATION

The [Eberly Center for Teaching Excellence & Educational Innovation](#) offers 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, and as future faculty members at other institutions. Regardless of one's current or future teaching context and duties, the goal of the Eberly Center 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 a 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 available online.

GRADUATE STUDENT ASSEMBLY

The [Graduate Student Assembly](#) (GSA) is a 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. Recent accomplishments are a testament to the difference the GSA making a difference, and steps to implementing the vision laid out by [the strategic plan](#).

The 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 3rd 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 Research Grands are able to run, as managed by the Graduate Education Office. The GSA relies on the feedback of graduate students to improve the graduate student experience at CMU. Feel free to [contact the GSA](#) to get involved, or stop by their office in the Cohon University Center Room 304, or become a representative for your department.

INTERCULTURAL COMMUNICATION CENTER (ICC)

The [Intercultural Communication Center](#) (ICC) is a support service for nonnative English speakers, both newly arrived international students as well as students who attended high school and/or undergraduate programs in the US. The ICC offers seminars, workshops, and one-on-one consultations that develop the language and cross-cultural skills needed to succeed in academic programs at Carnegie Mellon. The ICC provides International Teaching Assistant (ITA) testing, a required test indicating a nonnative speaking TA has the language proficiency required to work with students in classes, labs, or individual meetings. The ICC also supports International Teaching Assistants in developing fluency and cultural understanding to teach successfully at Carnegie Mellon.

OFFICE OF INTERNATIONAL EDUCATION (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. The OIE provides many services including: advising on personal, immigration, academic, social and acculturation issues; presenting programs of interest such as international career workshops, tax workshops, and cross-cultural and immigration workshops; supporting international and cultural student groups such as the International Student Union and the International Spouses and Partners Organization; maintaining a resource library that includes information on cultural adjustment, 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 programs.

VETERANS AND MILITARY COMMUNITY

Military veterans are a vital part of the Carnegie Mellon University community. Graduate students can find information on applying veteran education benefits, campus services, veteran's groups at CMU, non-educational resources and international military service information through the [Veterans and Military Community website](#). There are also links and connections to veteran resource in the Pittsburgh community. The Naval ROTC and Veteran Affairs Offices are located at 4615 Forbes Avenue. The [ROTC and Veterans Affairs Coordinator](#) can be reached at 412-268-8747.

CARNEGIE MELLON ETHICS HOTLINE

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

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

Students, faculty and staff can [anonymously file a report](#) online (user name: tartans; password: plaid) or by calling 877-700-7050. All submissions will be reported to the 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 Code of Business Ethics and Conduct. Additional details regarding the [Policy Against Retaliation](#) are available online.

KEY OFFICES FOR ACADEMIC AND RESEARCH SUPPORT

ACADEMIC COACHING/CONSULTING — THE OFFICE OF ACADEMIC DEVELOPMENT

The [Academic Coaching Program](#) is a student assistance program that supports graduate student in the development and/or improvement of skills, strategies, and processes that are necessary for a productive and successful experience at CMU and beyond. Support for graduate students comes in two forms: Individualized Sessions and Group Workshops. Individualized Sessions are the primary focus and can be best understood as working with a personal consultant. Academic Coaches/Consultants meet with student regularly, in a one-on-one capacity, in order to assess a student's needs and implement strategies to satisfy those needs, while providing a variety of support throughout the process. Areas of focus include, but are not limited:

- Self-Management
 - Developing and/or adjusting your organizational system
 - Managing time and combating stress and procrastination
 - Prioritization and decision making
 - Advancing mindset, self-efficacy, and belongingness
 - Balancing coursework, research, and professional development opportunities
- Study Skills
 - Identifying and modifying your learning process
 - Metacognition
 - Test-taking and note-taking strategie
 - Content comprehension and retention

COMPUTING AND INFORMATION RESOURCES

[Computing Services](#) maintains and supports computing resouces for the campus community, including the campus wired and wireless networks, printing, computer labs, file storage, email and software catalog. As members of the community, everyone is responsible for the security of these shared resources. Be sure to review the [Safe Computing guidelines](#) and the [University Computing Policy](#).

Visit the [Computing Services website](#) to learn more. The Computing Services Help Center is available at or 412-268-4357 (HELP) or via [email](#).

GLOBAL COMMUNICATION CENTER

The [Global Communication Center](#) offers free one-on-one tutoring and workshops for native and non-native English speakers from any academic discipline. Tutors are trained to provide research-based communication strategies on written, oral, and visual communication projects, in the sciences and the humanities. They can help you improve the effectiveness of your communication in any academic project, including the following:

- Technical reports

- Dissertations
- Research posters
- Oral presentations
- Journal articles
- Grant proposals
- Class essays

You can visit the center at any state in the project — whether you are just getting started and need to talk through ideas, or are putting the finishing touches on a final draft.

They also offer workshops on topics including crafting professional emails, team communication, PowerPoint slide design, data visualization, and job application materials. For more information, to view available resources, or to schedule an appointment, visit the [Global Communication Center website](#).

RESEARCH AT CMU

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 can be found by visiting the [Research at Carnegie Mellon](#) website.

OFFICE OF RESEARCH INTEGRITY AND COMPLIANCE

The [Office of Research Integrity and 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. The ORIC assists researchers with human subject research, conflicts of interest, responsible conduct of research, export controls, intellectual property rights and regulations, and institutional animal care and use. The ORIC also consults on, advises about and handles allegations of research misconduct.

KEY OFFICES FOR HEALTH, WELLNESS AND SAFETY

COUNSELING AND PSYCHOLOGICAL SERVICES

[Counseling and Psychological Services](#) (CaPS) affords the opportunity for students to talk privately about issues that are significant for them in a safe, confidential setting. Students sometimes feel confused about why they are feeling upset and unsure about how to deal with it. An initial consultation with a CaPS therapist will clarify options and provide a recommendation to the appropriate mental health resource at Carnegie Mellon or the larger Pittsburgh community. CaPS also provides workshops and group sessions specifically for graduate

students on campus. CaPS services are provided at no cost. Appointments can be made in person or by telephone, 412-268-2922.

HEALTH SERVICES

[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 and 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

At the university, we believe our individual and collective well-being is rooted in healthy connections to each other and to [campus resources](#). There are a wide variety of resources, opportunities and people that 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 [Be Well monthly newsletter](#) online or by contacting the [Program Director for Student Affairs Wellness Initiatives](#).

RELIGIOUS AND SPIRITUAL LIFE INITIATIVES

Carnegie Mellon is committed to the holistic growth of our students, including creating opportunities for spiritual and religious practice and exploration. The [Religious and Spiritual Life Initiatives](#) (RSLI) has relationships with local houses of worship from various traditions and many of these groups are members of CMU's Council of Religious Advisors. RSLI also offers programs and initiatives that cross traditional religious boundaries in order to increase knowledge of, and appreciation for, the full diversity of the worldview traditions. The RSLI staff are available to support students across the spectrum of religious and spiritual practice and would be happy to help you make a connection to a community of faith during your time at CMU.

UNIVERSITY POLICE

The [University Police Department](#) is located at 300 South Craig Street, Room 199 (entrance is on Filmore Street).

The department's services include police patrols and call response, criminal investigations, shuttle/escort services, fixed officer and foot officer patrols, event security, and crime prevention/ education programming. Visit the department's website for additional information about the staff, escort and shuttle, emergency phone locations, crime prevention, lost and found, finger print 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.

University Police numbers: 412-268-2323 (emergency only), 412-268-6232 (non-emergency).

SHUTTLE AND ESCORT SERVICES

Parking and Transportation coordinates [the Shuttle Service and Escort Service](#) provided for CMU students, faculty, and community. Full information about these services, stops, routes, tracking and schedules can be found online.

DEPARTMENTAL GENERAL INFORMATION

SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS MISSION STATEMENT

The goal of the graduate software engineering professional programs is to develop future leaders of industrial software engineering practice – chief engineers, lead architects, and principal technical officers. Graduates of the program are expected not only to understand but be able to apply the best of current practice, and to act as Agents of Change to improve the practice in this evolving discipline.

DEGREES OFFERED

The Software Engineering Professional Programs includes four (4) degrees:

- **Master of Software Engineering (MSE)**
 - For software developers who have at least two years of experience and who want to become technical and strategic leaders; 16 months, full-time. Required degree units: 195
- **Master in Business Administration / Master of Software Engineering (MBA/MSE)**
 - For engineering or science professionals who have at least two years of experience and who want to earn a dual degree; six semesters, plus internship. (Offered jointly with Carnegie Mellon's Tepper School of Business). Required degree units: 195
- **Master of Software Engineering – Scalable Systems (MSE-SS)**
 - For junior software professionals who have at least one year of experience (or equivalent

internship/project experience) and who want to enhance their software development and leadership skills in large-scale, data-intensive and intelligent systems design and engineering; 16 months, full-time. Required degree units: 153

- **Master of Software Engineering – Embedded Systems (MSE-ES)**
 - For software professionals who have at least one year of experience (or equivalent internship/project experience) and who want to enhance their embedded software systems development skills; 16 months, full-time. Required degree units: 153
- **Master of Science in Information Technology – Software Engineering (MSIT-SE)**
 - For junior software professionals who have at least one year of experience (or equivalent internship/project experience) and want to enhance their software development and leadership skills; 12 months, full-time. Required degree units: 147

Policies and procedures mentioned herein pertain primarily to the above-listed degree programs. All questions can be directed to the Programs Manager.

DEPARTMENTAL RESOURCES

DEPARTMENT / PROGRAM PERSONNEL INTRODUCTION

The Software Engineering Professional Programs are a suite of programs within the Institute for Software Research and the School of Computer Science. We recommend that you become familiar with the leadership of both of these organizations as well as our own.

Below you will find information on all associated faculty, mentors, and staff; including the possible ways in which you may interact with them.

SCHOOL OF COMPUTER SCIENCE (SCS)

| Name/Title | Office | Phone |
|---|-----------------|-----------------|
| Tom Mitchell <i>Dean</i> | GHC 5113 (8203) | 268-2063 (2611) |
| Srinivasan Seshan <i>Computer Science Department Head</i> | GHC 7019 | 268-8734 |
| Guy Blelloch <i>Associate Dean for Undergrad Education</i> | GHC 9211 | 268-6245 |
| David Garlan <i>Assoc. Dean for Master's Programs</i> | GHC 4218 | 268-5056 |

| | | |
|--|----------|----------|
| Tom Cortina <i>Assistant Dean Undergrad Education</i> | GHC 4117 | 268-3514 |
| Catherine Copetas <i>Asst. Dean, Indust. Rel/Spec. Events</i> | GHC 6203 | 268-8525 |

INSTITUTE FOR SOFTWARE RESEARCH (ISR)

| Name/Title | Office | Phone |
|--|----------|----------|
| Jim Herbsleb <i>Director, ISR</i> | WeH 5222 | 268-8741 |
| Travis Breaux <i>Director, Software Engineering Professional Programs</i> | SCRG 270 | 268-7334 |

MASTER OF SOFTWARE ENGINEERING (MSE)

FACULTY

| Name/Title | Courses | Contact Info |
|---|--|--|
| Yuvraj Agrawal <i>Associate Professor</i> | Building User-Focused Sensing Systems | WeH 5313 268-7328 yuvraj@cs.cmu.edu |
| Len Bass <i>Adjunct Teaching Instructor</i> | DevOps: Engineering for Development and Operations | lenbass@cmu.edu |
| Matthew Bass <i>Asst. Teaching Professor</i> | Engineering Data Intensive Scalable Systems Systems Architecture for Managers | SCRG 267 268-6163 mbass@cmu.edu |
| Travis Breaux <i>Associate Professor</i> | Methods: Deciding What to Design Artificial Intelligence for Software Engineering | SCRG 270 268-7334 breaux@cs.cmu.edu |
| Jennifer Cirolì <i>Adjunct Teaching Instructor</i> | Communication for Software Engineers | jcirolì@andrew.cmu.edu |

| | | |
|---|--|--|
| David Garlan <i>SCS Professor</i> | Models of Software Systems Architectures for Software Systems | WeH 4218 268-5056 garlan@cs.cmu.edu |
| Jeff Gennari <i>Adjunct Teaching Instructor</i> | Analysis of Software Artifacts | SEI 4206 268-1404 jgennari@andrew.cmu.edu |
| Eunsuk Kang <i>Assistant Professor</i> | Models of Software Systems Software Engineering for AI-Enabled Systems | WeH 5319 268-2843 eskang@cmu.edu |
| Christian Kästner <i>Assistant Professor</i> | Analysis of Software Artifacts Software Engineering for AI-Enabled Systems | WeH 5126 268-5254 kaestner@cs.cmu.edu |
| Peter Kolenich <i>Adjunct Teaching Instructor</i> | Communication for Software Engineers | kolenich@andrew.cmu.edu |
| Claire Le Goues <i>Assistant Professor</i> | Foundations of Software Engineering (for undergraduate students) | WeH 5117 268-6954 legoues@cmu.edu |
| Eduardo Miranda <i>Associate Teaching Professor</i> | Agile Software Development Frameworks: Theory Estimating Software Development and Maintenance Projects Managing Software Development | SCRG 268 268-8450 mirandae@andrew.cmu.edu |
| Jose Morales <i>Adjunct Teaching Instructor</i> | Engineering Run Time Malware Detection | SEI 2216 268-9392 jamorales@sei.cmu.edu |
| Sujata Telang <i>Associate Teaching Professor</i> | Managing Software Development | SCRG 273 268-4644 stelang@andrew.cmu.edu |
| Vijay Sai Vadlamudi <i>Adjunct Teaching Instructor</i> | Business for Engineers Data-driven Software Engineering IoT, Big Data, and ML: A Hands-on Approach | Bakery Square B145 268-7743 vijaysai@cmu.edu |
| Hasan Yasar <i>Adjunct Teaching Instructor</i> | DevOps: Engineering for Development and Operations | SEI 2304 268-9219 hyasar@cmu.edu |

NON-CORE FACULTY MENTORS

| Name/Title | Classes/Interactions | Contact Info |
|---|----------------------|--|
| Phil Bianco <i>Senior Member of the Technical Staff, SEI</i> | Mentor – MSE Project | SEI 5210 268-5387 pbianco@sei.cmu.edu |
| Sebastian Echeverria <i>MTS – Engineer, Critical Systems Capabilities, SEI</i> | Mentor – MSE Project | 268-4797 secheverria@sei.cmu.edu |
| Jeff Gennari <i>Senior Member of the Technical Staff, SEI</i> | Mentor –MSE Project | SEI 4206 268-1404 jgennari@andrew.cmu.edu |
| Clifford (Cliff) Huff <i>Senior Member of the Operational Staff, SEI</i> | Mentor – MSE Project | 4570 Fifth Ave 3039 268-7605 cch@sei.cmu.edu |
| Grace Lewis <i>Principal Researcher, SEI</i> | Mentor – MSE Project | SEI 5412 268-5851 glewis@sei.cmu.edu |
| Andrew Mellinger <i>Senior Software Developer, SEI</i> | Mentor – MSE Project | CIC 2317 268-5161 amellinger@cmu.edu |
| Ipek Ozkaya <i>Senior Member of the Technical Staff, SEI</i> | Mentor – MSE Project | SEI 5118 268-3551 ozkaya@sei.cmu.edu |
| Scott Pavetti <i>Software Engineer, Security Automation, SEI</i> | Mentor – MSE Project | spavetti@cmu.edu |
| Dan Plakosh <i>Senior Engineer, Client Technical Solutions, SEI</i> | Mentor – MSE Project | SEI 3124 268-7197 dplakosh@sei.cmu.edu |
| Bradley Schmerl <i>Principal Systems Scientist, ISR</i> | Mentor – MSE Project | WeH 5107 268-5889 schmerl@andrew.cmu.edu |
| Vijay Sai Vadlamudi <i>Manager, Enterprise Business Systems, SEI</i> | Mentor – MSE Project | Bakery Square B145 268-7743 vijaysai@cmu.edu |

ADMINISTRATIVE STAFF

| Name/Title | Role/Interactions | Contact Info |
|---|--|---|
| Karen Fleischman <i>Masters Programs Manager</i> | Oversees all aspects of the master's programs administration. You will likely speak to them regarding admissions, performance review issues, personal and professional conflicts, course and faculty | SCR 274 268-4359 karenk@andrew.cmu.edu |

| | | |
|---|--|--|
| | concerns, program management and direction. | |
| Jennifer Moritz <i>Alumni and Corporate Relations Manager</i> | Coordinates alumni outreach efforts, student relations, and job placement. Interacts directly with industry regarding project sponsorship and engagement with program. | SCRG 275 268-7881 jmoritz@andrew.cmu.edu |
| Lauren Martinko <i>Masters Programs Senior Administrator and Graduate Academic Advisor</i> | Coordinates MSE programs and graduate student advising. Among many other program-related issues, you will likely go to her regarding course planning, registration, commencement, orientation and general program information. | SCRG 272 268-6441 laurenma@cs.cmu.edu |
| Marlana Pawlak <i>Masters Programs Administrator</i> | Coordinates MSE programs and SEM programs. Among many other program-related issues, you will likely go to her regarding admission questions, registration, commencement, orientation and general program information. | SCRG 277 268-5067 mpawlak@andrew.cmu.edu |

FACILITIES STAFF

| Name/Title | Role/Interactions | Contact Info |
|--|---|--|
| SCS Building Facilities | The SCS Building Facilities group manages all initiatives and issues pertaining to the physical spaces occupied by the School of Computer Science. From facility, furniture, electrical issues and office/room access to space and maintenance resources. | building@cs.cmu.edu |
| Paul Stockhausen <i>Senior Manager, SCS Building Facilities</i> | You may contact Paul regarding any issue you may have with the building or furniture. Also, Paul should be contacted in the event of an accident on the property. | GHC 4107 268-8223 stocky@cs.cmu.edu |
| Jamie Gregory <i>Associate Building Facilities Manager, SCS</i> | You may contact Jamie regarding any issue you may have with the building, furniture, or phones. | GHC 4107 268-2069 jamieg@cs.cmu.edu |
| Luke Padezan <i>Building Facilities Specialist, SCS</i> | You may contact Luke regarding any issue you may have with the building, furniture, or phones. | GHC 4105 268-4875 lpadezan@cs.cmu.edu |
| Michael Malloy <i>Building Facilities Specialist, SCS</i> | You may contact Michael regarding any issue you may have with the building, furniture, or phones. | GHC 4105 268-4234 mmalloy@cs.cmu.edu |

TECHNICAL STAFF

| Name/Title | Role/Interactions | Contact Info |
|--|---|--|
| Dave Ambroso <i>Video Techniciann, ISR</i> | Video Technician for the MSE program. | WeH 4114 dambroso@andrew.cmu.edu |
| Emanuel Bowes <i>Assistant Systems Manager, ISR</i> | Emanuel maintains servers and provides tech support for the MSE programs. | WeH 5301 268-3369 peb2@andrew.cmu.edu |
| Aaron Caldwell <i>Video Systems Technician, ISR</i> | Video Systems Technician for the MSE program. | WeH 4112 268-3479 aaroncal@andrew.cmu.edu |
| Cole Handerhan <i>Video Technician, ISR</i> | Video Technician for the MSE program. | WeH 4112 coleh@andrew.cmu.edu |
| Ryan Johnson <i>Desktop Support Technician, ISR</i> | Ryan's responsibilities include IT support and system administration. | WeH 5301 268-4051 ryanjohnson@cmu.edu |
| Kevin Kerston <i>Video Technician, ISR</i> | Video Technician for the MSE program. | WeH 4114 kkerston@andrew.cmu.edu |
| John Lombardo <i>Video Technician, ISR</i> | Video Technician for the MSE program. | WeH 4116 268-5414 lumbo65@cs.cmu.edu |
| Thomas Pope <i>Systems Manager, ISR</i> | Tom is the Systems Manager for the Institute and runs both the IT services team as well as the video production team. | WeH 5113 268-8615 tpope@cmu.edu |
| Jennifer Potter <i>Courseware Specialist</i> | Jen is the Courseware Specialist for the distance education program. She is responsible for writing and editing print and online course materials for distance education. | jspotter@cs.cmu.edu |
| James Tobin <i>Videography Team Manager, ISR</i> | Jim is the Video Technician Manager for the MSE program. | WeH 4116 268-7695 jtobin@cmu.edu |

A [directory](#) of CMU faculty and staff is available online.

SOFTWARE ENGINEERING PROFESSIONAL PROGRAM INFORMATION

SCS REASONABLE PERSON PRINCIPLE

In addition to the overarching university codes of conduct, the Software Engineering Professional Programs abides by one of the best traditions of the School of Computer Science: the “Reasonable Person Principle”. This

principle says that we expect members of our community to act reasonably. As such, we attempt to keep formal, written rules to a relative minimum (the guidelines set forth in this handbook notwithstanding).

Reasonable Person Principle:

- Everyone will be reasonable.
- Everyone expects everyone else to be reasonable.
- No one is special.
- Do not be offended if someone suggests you are not being reasonable.

On a day-to-day basis, we simply ask that as a member of our community, you treat others as you want to be treated. Be honest. Show consideration for others when using facilities, resources, and supplies. Practice grace and humility when receiving feedback. Demonstrate tact and diplomacy when offering feedback to others.

MAILING ADDRESS FOR SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS

Masters Programs in Software Engineering
Carnegie Mellon University
300 South Craig Street, 2nd floor
Pittsburgh, PA 15213 USA

PROGRAM RESOURCES

OFFICE SPACES AND BUILDING FACILITIES

All students are provided with a working area and general access to the professional space. This includes:

Keys

- Lockable student storage space and a general access keys are distributed to each student at Orientation.
- It is the responsibility of the student to return the keys upon leaving the program.
- Lost keys can be replaced at the cost of \$20 each.

Security

- In the event of an emergency, contact Campus Police at: (412) 268-2323
- The door leading from South Craig Street will be kept locked at all times.
- Access to the building is made by swiping a valid and activated Carnegie Mellon student identification card at the front door access area.
- Elevator and 2nd floor access is made by swiping the student ID card in both locations.
- Doors at the top of the 2nd floor stairway must remain locked at all times.
- Student cabinets located inside the MSE student space are lockable and remain the responsibility of the assigned student.

- Please do not invite friends into the MSE professional areas on a regular basis.
- In case of theft of property, either personal or university, please notify Paul Stockhausen, Campus Security, and an MSE programs administrator.
- Emergency egress can be made by using any of the exit stairways. These can be found inside the MSE professional area, or in the 2nd floor main hallway.

The university's [on-campus emergency procedure](#) can be reviewed online.

CONFERENCE ROOMS

Five student meeting rooms are available for student teams to assemble collectively or with project clients. These rooms are scheduled each semester by the Studio Manager, and are available upon request on a first-come, first-reserved basis.

MEDIA ROOMS

- All 300 South Craig Street student meeting rooms are equipped with overhead projectors and computer projections capabilities.
- All conference rooms are equipped with floor-to-ceiling white boards.
- High-end telecommunications systems are installed in the faculty conference room and two of the student break-out rooms.

PROGRAM/DEPARTMENTAL LIBRARIES

The James E. Tomayko Memorial Library is located in the Master's Programs in Software Engineering professional space, 300 South Craig Street, 2nd floor. This collection is the generous donation of Dr. Jim 'Coach' Tomayko, former director, faculty member, and SEI researcher. Program students may sign out books from his collection for their personal and professional use. Students may also use the Engineering and Science Library (Wean Hall 4615) and the Software Engineering Institute Library (SEI 1st Floor).

PARKING

Parking on campus for students and for their clients is their responsibility. See the [parking services](#) website for more information.

REPAIRS

- Computing equipment: Notify an ISR IT technical support staff.
- Print/copy/fax equipment: Notify a program administrator.
- Furniture: Notify [SCS Building Facilities](#).
- Services: For furniture, lighting, heating, cooling, etc., contact [SCS Building Facilities](#).
- Computers: contact the Andrew help desk (Ext. 4357) or the ISR Systems Mgr. (Ext. 7138).

ACCIDENTS ON CMU PROPERTY

Please report all accidents to [Paul Stockhausen](#) and the MSE Office. You will be asked to complete an accident report.

MAIL AND CORRESPONDENCE

MAILBOXES

Mail slots (arranged in alphabetical order) are located inside the master program's professional space on 2nd floor, 300 South Craig Street. All mail is delivered to this location. Please check your mail slot regularly. Mail that is left for an extended period of time may be discarded.

EXPRESS MAIL/ UPS/ FEDEX

Students may send materials to project clients using these services. Program administrators can supply the packing materials. Deliveries can be sent to you at the program address. Please check your student mail box regularly to retrieve mail/packages.

FAX

There is a fax machine in the program's location. Please see an MSE program administrator for the access code. Incoming faxes may be received without charge in the fax room at Craig Street (412-268-5413).

COPY MACHINES

There are two copy machines located on the 2nd floor of the Master's Programs professional facility at 300 South Craig Street. One is located near the mail slots. The other is located in the fax/supply room (SCRG 283).

COMPUTER LABS

There are a number of computer labs located throughout the CMU campus. A [list of locations](#) is available online.

OFFICE SUPPLIES AND EQUIPMENT

INDIVIDUAL SUPPLIES

- This student space has been stocked with the following basic office supplies: pencils, pens, paper clips, push pins, T-pins, highlighter, scissors and ruler.
- All assigned spaces are stocked with hanging and interior folders and pertinent literature. See administrator for basic supplies.
- Each work area has a stapler and transparent tape dispenser.
- Each work area has a wastebasket and recycling basket.

SHARED SUPPLIES

- Shared office supplies, such as heavy-duty stapler, 3-hole punch, etc., are in the public copy/printing area on the 2nd floor. Students are asked to use the supplies in the designated areas.

REPLACEMENT SUPPLIES

- A small quantity of replacement supplies is kept in the student public area.
- When taking replacement supplies from the MSE stock, please remember the “Reasonable Person” policy. Inform a program administrator when the supply runs low.
- Empty 3-ring binders are often available from administrators. When a student is no longer using a 3-ring binder, please empty it and return it to this stock for use by other students.
- The department will not provide special supplies.

CONFERENCE PHONES

- Conference phones are available for business use. Students may use program conference phones to conduct business with project clients, potential employers, or to complete work essential to their plan of study or project work.
- It is recommended that the outside party initiate the conference call. Direct-dial phone numbers for each room are readily available and can be shared with the outside party.
- To make calls internal to the university, it is necessary to dial “8” followed by the last 4 digits of the university office or individual contact number.
- To make calls outside of the university, dial 122 + 13925472 + 9 + (1) + the 7 digit phone number.
- To telephone outside of the US, it is necessary to dial 122 + 13925472 + 9 + 011 + the 7 digit phone number.

FINANCIAL AND SOCIAL RESOURCES AND POLICIES

EXPENSES

- Any expenses incurred on behalf of the program and approved in advance by the Programs Manager may be reimbursed.
- Expenses associated with projects that have been pre-approved by the Programs Manager may be reimbursed by the program.
- Receipts that verify purchases and/or expenses should be presented to the program administrator for reimbursement.

SOCIAL COMMITTEE/ ACTIVITIES

With each academic year, a call is made for interested students to serve in social and leadership positions as a part of the MSE Leadership Initiative (MSELI). This student organized and led organization strives to address the professional interests of MSE students. Initiatives run the gamut from hosting guest lecturers, coordination of technical and soft skills workshops, and group knowledge-sharing sessions. Proposed initiatives and budgets are submitted to the Programs Manager for approval, along with requests for funding support.

In addition, the MSELI is charged with discussing and organizing social activities that include recreation, entertainment, socializing, sport and leisure. The MSE programs may partially-support reasonable and pre-

approved expenses associated with these periodic (generally one per semester) outings. Ideas and a proposed budget should be given to the Programs Manager, for approval.

PURCHASING POLICIES AND PROCEDURES

Students may petition the program for the purchase of supplies in support of professional or social activities that benefit a sizable portion of the program community. Examples of supplies may include food and drink for a visiting lecturer or student-organized professional development event, materials or supplies used in support of student projects.

In every instance, approval from the Programs Manager is needed prior to the purchase being made. Once approved, the appropriate Program Administrator can finalize the transaction.

PRESS AND MEDIA RELATIONS

The Programs Manager is the point-of-contact between news media and the MSE community, including faculty, students, administrators and staff.

If any student, staff or faculty member of the Program is contacted by a media representative, they are encouraged to immediately inform the Programs Manager. Persons are not required to answer any questions from journalists without first seeking counsel from program leadership.

Persons interested in publicizing a program, project, event, or other activity affiliated with the Software Engineering Professional Masters Programs should contact the Programs Manager.

UNIVERSITY/ COLLEGE/ DEPARTMENT/ PROGRAM BRAND AND LOGOS

The Software Engineering Professional Programs adheres to the University's established guidelines regarding brand identity and logo usage. For more information on the use of university logos and suggested brand identity markers (color scheme, typeface, etc.), please consult the [Office of Marketing Communications](#) website.

If you would like to use the Software Engineering unit mark, please contact the Programs Manager regarding its usage first.

DEGREE ATTAINMENT

COURSE OF STUDY AND GRADUATION

DURATION OF THE PROGRAM

MSE is a full-time campus degree program: It is designed to be completed in 4 consecutive semesters.

- The program may be pursued in a part-time format, but must be completed within five (5) years from the time of program matriculation

MBA/MSE is full time campus degree program. It is designed to be completed in 6 consecutive semesters.

- Study is divided between Tepper School of Business (3 semesters) and the MSE Program (3 Semesters).

MSE-SS is full-time campus degree program: It is designed to be completed in 4 consecutive semesters.

- The program may be pursued in a full-time format, and must be completed within five (5) years from the time of program matriculation.

MSE-ES is a full-time campus degree program: It is designed to be completed in 4 consecutive semesters.

- The program may be pursued in a full-time format, and must be completed within five (5) years from the time of program matriculation.

MSIT-SE is full-time campus degree program: It is designed to be completed in 3 consecutive semesters.

- The program may be pursued in a full-time format, and must be completed within five (5) years from the time of program matriculation.

DEFINITION OF FULL-TIME STATUS

The Software Engineering Professional Programs define full-time enrollment as no less than 36 units in a given semester.

DEFERMENT OF START OF PROGRAM

An applicant who is accepted into the MSE program is eligible to enter the program in the year of acceptance. On a case-by-case basis, the request for a one-year deferment may be considered. A formal deferment request must be received by the Programs Manager and if approved following its review, entitles the student to enter in the following year. Only one deferment will be granted to each student. If a student does not attend in the year following acceptance, the student must re-apply to the program.

PLAN OF STUDY

To receive the Master of Software Engineering (MSE), the Master of Business Administration/Master of Software Engineering (MBA/MSE), Master of Software Engineering – Scalable Systems (MSE-SS), or Master of Software Engineering – Embedded Systems (MSE-ES) degree, students must successfully complete the appropriate courses with an overall quality point average (QPA) of 3.0. If a grade lower than “B-” (B minus) is received in any core, required or project course, the course must be repeated, regardless of the QPA. Receiving a “B-” (B minus) or less in any course may jeopardize the student’s good academic standing in the Program.

For program-specific plans of study, visit the appropriate program website:

[MSE Plan of Study](#)

[MBA/MSE Plan of Study](#)

[MSE-SS](#)

[MSE-ES](#)

[MSIT-SE](#)

Note: Course units are listed as a convenience for those who wish to know this information. Three CMU units are roughly equivalent to one credit hour. Therefore, a 12-unit course is equivalent to a 4-credit course.

Detailed Plans of Study for each program are included as Appendices to this document.

WHAT IS AN ELECTIVE?

An elective is a course taken in addition to the core, project, pre-requisite and required courses, is in an area of interest to the student, and is applicable to his or her software engineering degree. MSE-SS and MSE-ES students should plan to select technical courses, although some exceptions to this rule will be considered. All MSE-SS and MSE-ES students are required to take a minimum of 24 units of elective coursework, whereas MSE students are required to take a minimum of 48 units of electives. Units associated with elective courses vary. All students are advised to discuss their choice of electives with his/her advisor, and receive approval before enrolling. Only those electives that have been approved by the academic advisor will be accepted towards degree completion requirements.

WHAT COURSES COUNT AS ELECTIVES?

Generally, electives are chosen from the Software Engineering department, but they can come from any school or department within Carnegie Mellon as long as:

- the student has not already taken the course;
- the course has been approved by the student’s academic advisor.

One undergraduate course (300+ level or higher) may apply toward the degree’s elective requirement. A second undergraduate course may be taken *provided* the course is a pre-requisite for a required course. In this exceptional case, both courses will count toward degree completion requirements. Undergraduate courses will factor into the student’s overall QPA on the university’s official transcript.

Although elective courses may be taken on a pass/fail basis, be advised that only elective courses with letter grades (A, B, C, D) can be used toward degree completion requirements.

INDEPENDENT STUDY COURSES

An independent study (IS) course is one that is:

- designed by the student for further study in a particular area of interest, and
- used when there is no formal course available in a given subject area.

Independent study courses may be 9 or 12 units. Each Independent Study course, regardless of the proposed units, will fulfill the requirement of one elective course only. A maximum of (2) Independent Studies is permitted toward degree completion requirements.

Each Independent Study course must be advised and approved by at least one faculty member, as well as the Graduate Academic Advisor. Agreement to supervise an Independent Study course is purely voluntary on the part of the faculty member. It is the duty of the student, therefore, to negotiate the terms and conditions of the Independent Study with the pertinent faculty member(s) or members of the Software Engineering Institute (SEI) technical staff who will be supervising the study. These individuals are referred to as “Independent Study Supervisors”.

Once the student identifies the individual who will supervise, he/she must:

1. Enter into an agreement with the mentor that clearly defines learning expectations, schedules and timelines, and IS deliverables
2. Retrieve an “Independent Study Contract Form” from the Program Office (SCRG 276), completing the form in its entirety.
3. Develop a detailed IS proposal that includes the work to be done, the deliverables, and the agreed-upon expectations as defined with the IS mentor
4. Submit the form (electronic and hard copy), inclusive of signatures of the student and the supervisor, to the Graduate Academic Advisor for review and signature.
5. Following additional revisions and once approved by the Graduate Academic Advisor, the IS form will be processed.

The “Independent Study Contract Form” must be submitted NO LESS THAN 2 weeks before the end of the semester preceding the term in which the proposed IS will take place.

COURSES TAKEN OUTSIDE THE DEPARTMENT

Students are strongly encouraged to take electives offered by the Institute for Software Research (ISR) — courses numbered 17-xxx. They may, however, after consultation with their academic advisor, register for elective courses outside the ISR. Generally, these are courses offered by, but not limited to, SCS, Tepper, Robotics, Heinz College, and ECE. Only those approved by the Graduate Academic Advisor will be counted toward the completion of elective requirements. (See above for elective requirement.) When in doubt, students should confer with the advisor.

For MSE-SS and MSE-ES students, at most 24 units of electives may be taken outside of ISR, excluding courses numbered 17-xxx. For MSE students, at most 48 units of electives may be taken outside of ISR.

All grades must comply with Carnegie Mellon University's [grading policy](#).

COURSE MATERIALS

All course materials are available as announced by the instructor. Books may be purchased at the Carnegie Mellon Bookstore or from the student's favorite online bookseller.

TRANSFER FROM MASTER TO DOCTORAL PROGRAMS

Completion of the Master of Software Engineering degree does not guarantee admission into any doctoral degree program at Carnegie Mellon. The courses completed as part of the MSE program may enhance a student's application to these programs, but do not ensure admittance.

If the requirements for the Master of Software Engineering degree have not been completed when a student leaves to pursue another academic program, the MSE degree will not be awarded.

PARTICIPATING IN CAMPUS COMMENCEMENT

Graduates of the 16-month MSE programs participate in the commencement ceremony in May of the year following completion of their degree requirements.

GRADUATE CERTIFICATION AND DEGREE TITLE

Upon successful completion of all coursework, students will be certified for graduation by the appropriate program administrator. Degree Titles appear on the degree as follows:

MSE

Master of Software Engineering

MBA/MSE, students will receive two diplomas which read, respectively:

Master of Software Engineering

Master of Business Administration

MSE-SS

Master of Software Engineering in the field of Scalable Systems

MSE-ES

Master of Software Engineering in the field of Embedded Systems

MSIT-SE

Master of Science in Information Technology - Software Engineering

SCHEDULES

ACADEMIC CALENDAR

The [Academic Calendar](#) provides information on all deadlines including registration dates, class start dates, add/drop deadlines, exam dates, and more.

UNIVERSITY SCHEDULES

The university issues schedules of courses for each semester. These are generally available in mid-April for the summer session, late-April for the fall semester, and mid-November for the spring semester. The most current course schedule for all courses (including MSE courses) can be found on [The Hub](#) website.

The schedule lists, in addition to course number, title, instructor, section, days, hours and room, the prerequisites, if any, for particular course(s). Course schedules may change due to unexpected circumstances; such as non-availability of faculty, low class size, and unexpectedly high enrollment.

It is the responsibility of the student to refer to the latest course schedules.

EXAMINATION SCHEDULES

- The University's official final examination period begins on the Monday immediately following the last day of classes and continues through the last day of scheduled final examinations, with the exception of reading day(s).
- [Scheduled final examinations](#) are those scheduled by Enrollment Services.
- An instructor may choose not to set a schedule for the final examination, rather allowing each student to choose his/her examination time. Such exams are called self-scheduled examinations.

MAKE-UP EXAMS

Make-up exams remain the discretion of the individual course instructors and will be scheduled as appropriate.

COURSE SELECTION AND ENROLLMENT

ACADEMIC ADVISING

ROLE OF THE ACADEMIC ADVISOR

The Graduate Academic Advisor coordinates advising for all students in MSE programs to establish a consistent and coherent advising policy across programs. In addition, students are assigned a faculty co-advisor who is available to assist with technical questions about software engineering and elective coursework. An open line of

respectful and confidential communication is encouraged, as is the timely follow up and response to inquiries and requests for meeting times. Advising sessions are key in addressing conflicts and seeking guidance when needed. The advisor's role is to:

- offer advice on appropriate elective courses to meet individual career goals;
- monitor student progress throughout the program;
- evaluate student performance as related to English language proficiency and suggest appropriate intervention, as needed;
- recommend and help arrange for tutoring, if needed;
- recommend disciplinary action to the Program Director, if needed;
- meet at the conclusion of each semester to discuss student progress and to provide progress documentation to the student.

If you have an issue with your advisor, please contact the Programs Manager immediately.

ROLE OF THE STUDENT

Initial advising is done at the MSE Orientation. **Students are responsible for making subsequent appointments with the Graduate Academic Advisor.** Periodic check-ins with the advisor are encouraged in order to discuss personal and professional career goals and a Plan of Study that targets those objectives. Recommended times for advising sessions include the week prior to registration to review elective course options, consideration of Independent Study opportunities, discussion of academic challenges, feedback on matters of academic integrity/ conflict, and evaluation of professional job prospects.

REGISTRATION POLICY

As a general rule, the recommended number of units per semester is 51 units. Although students may be able to register for up to 63 units, the total unit load at the end of the drop-add period should be no greater than 51 units. By the final drop/add date, students must complete a registration approval form that lists all of the courses they are enrolled for and any teaching or research assistantships they are involved in. The Graduate Academic Advisor must approve and sign each student's registration approval form according to the guidelines outlined in this document. Registration for greater than 51 units requires the advance permission and approval/signature of the Graduate Academic Advisor.

REGISTRATION PROCEDURES

- [Course registrations](#) are completed by the student online.
 - Note: First semester MSE students will have their required courses scheduled for them. Thereafter, they are required to register themselves at the Student Information Online portal.
- The MSE programs (and the university) reserves the right to withdraw any announced course if the enrollment is too low. The MSE programs also reserve the right to make changes in the schedule of hours, units, or in instructional staff.

- It is the responsibility of each student to register for courses. This can be done at any time, beginning with the pre-registration period and ending with the add/drop period. Dates can be found on the official academic calendar.
- Students must register for each course, whether for-credit or an audit. Any student whose name is not on the roster for a particular course on the first day of class may be denied admission to the course.
 - SE Ph.D. courses are numbered 17-7xx.
 - CS Ph.D. courses are numbered 15-8xx.

ADD/ DROP PROCEDURES

Students must follow the procedures and deadlines for adding, dropping, or withdrawing from courses as identified on the [Academic Calendar](#). For policies and procedures regarding the implications of adding and dropping courses, please refer to the [Drop/Withdrawal Grades](#) subsection.

COURSES WITH RESTRICTED ENROLLMENT

MSE students have priority in MSE-originated courses. The MSE cannot, however, lobby with other departments on behalf of its students in order to secure seats in other courses. All departments reserve seats for their specific students. Any open seats remaining are generally assigned on a first-come, first-served basis. Students can, on occasion, contact the assigned course instructor to plead his/her case for admission to the course. Admission may be granted at the discretion of the instructor. The policy of the department offering the course(s) is always followed.

GRADES AND EVALUATIONS

All courses offered through the program are graded on the 4.3 [grading standard](#).

- All students must maintain a “B or better” overall average. “B” is equivalent to a 3.0 QPA.
- Failure is “R” grade. This grade is not acceptable for any graduate student.
- CMU policy specifies that a student who receives an “R” grade in any core course must retake the course and potentially assume supplemental tuition costs for the retaken course. The program adheres to this and all CMU policies.
- If a grade lower than “B-” (B minus) is received in any core, Communication, required or project course, those courses must be repeated, regardless of QPA.

GRADE REPORTS

Grades can be found on the student’s [Student Information Online](#) site.

PASS / FAIL GRADES

All courses to be used toward degree completion requirements must be letter-bearing. Students may take elective courses for their educational enrichment on a pass/fail basis, with the understanding that they will not fulfill degree requirements.

WITHDRAWING FROM A COURSE

The School of Computer Science does not grant “W,” or “withdrawal” grades. Therefore, any student wishing to withdraw from a course without negatively affecting his or her QPA must do so in advance of the posted Course Drop deadline. This date is listed on the university’s [academic calendar](#).

GRADES RECEIVED FOR RETAKING A COURSE

Any student who fails a course will have the failure reviewed by the faculty committee during the end-semester academic review. Under advisement from the committee, the Graduate Academic Advisor may require the student to repeat the course in order to complete the degree completion requirements.

INCOMPLETE GRADES

- Carnegie Mellon students are expected to complete a course during the academic semester in which the course was taken. However, if the instructor agrees, a grade of “I” (incomplete) may be given when a student has been unable to complete the work of a course. Moreover, the work completed up to that date must be of passing quality and the grade of incomplete provides no undue advantage to that student over other students.
- In awarding an “I” grade, an instructor must specify the requirements for the completion of the work and designate a default letter grade in the event that the student fails to complete the remaining work.
- Students must complete the required course work by no later than the end of the following academic semester, or sooner if required by the instructor.
- The instructor must record the permanent course grade by the last day of the examination period of the following semester, or the default grade will be automatically assigned by the Registrar.

INCOMPLETE GRADES DELAYING GRADUATION

If an Incomplete grade is earned during the semester in which the student expects to graduate, the student may choose to:

- accept the grade of “I” (Incomplete), thus delaying graduation until the successful completion of the course

OR

- accept a grade of “C,” be certified to graduate, successfully complete the required course work, and request a change of grade to reflect the completion of assignments.

CHANGE OF GRADE AND MISSING GRADES

Final grades will be changed only in exceptional circumstances and only with the approval of the instructor and the program.

A graduate student who believes that the final grade assigned for a course is incorrect should:

1. Discuss the matter informally with the course instructor responsible for the course in which the student believes an inappropriate grade has been awarded;
2. Provide evidence that the grade issued was not the grade earned.
3. If the instructor agrees, the student should contact the program administrator to process a Change of Grade Form in order to correct the grade that was issued in error.

If the instructor and the graduate student do not agree, and the student is not satisfied with the instructor’s grade decision, the student may appeal to the department head within fourteen (14) days of the final grade award. This is done with a formal, written letter and provision of the appropriate documentation. The university’s policy on [grade appeals](#) is available online.

If a grade has not been assigned, please notify the course instructor for completion of a Missing Grade Form.

TRANSFER COURSES AND GRADES

UNIVERSITY POLICY ON GRADES FOR TRANSFER COURSES

Carnegie Mellon University offers students the opportunity to take courses for credit through a cross-registration program (see Pittsburgh Council on Higher Education 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 grade. Such courses will not be considered for academic actions, honors or QPA calculations. (Note: Suspended students may take courses elsewhere; however, they may receive transfer credit only if their college's and department's policies allow this.)

PROGRAM POLICY ON ACCEPTANCE OF TRANSFER COURSES OR GRADES

Students who have taken and successfully completed graduate-level courses in software engineering and related areas such as computer science, information technology or management, may petition for these credits to apply toward their elective credit requirements, as long as the following conditions are met:

1. No course credit will be given for courses that were already used to obtain a graduate degree.
2. The petitioned course must be in an area/discipline closely aligned with the student's intended area of graduate study.
3. Students must obtain and present a transcript with the final earned grade from the institution where the course was taken, as well as supporting artifacts specific to the course at the time it was taken (i.e., course description, syllabus, learning/educational outcomes, student work product such as project, report, analysis, etc.)
4. Final earned grade in petitioned courses must be 'B- or better'.
5. All petitioned courses must be graduate level, or equivalent to a CMU 500-series (or higher) course.

Each transfer request is evaluated on a case-by-case basis. A decision will be made on the course's transferability by the Graduate Academic Advisor only after the applicant has been notified of his/her acceptance to the program. A maximum of (2) courses may be accepted in transfer and applied toward degree completion elective or pre-requisite requirements. All remaining elective courses, and all core curriculum and project courses, must be completed through Carnegie Mellon. Course approved for transfer will appear on the student transcript as 'transfer credits'.

STUDIO AND OTHER PRESENTATIONS

Students are expected to present their coursework as part of individual and group presentations periodically throughout their time in the program. This includes:

- Various group presentations throughout the program duration.
- Mid-semester presentation (Bootcamp and/or mid spring and summer semesters)
- End-of-semester presentation (EOSP required at the end fall/spring semesters).
- Final internship presentation at the conclusion of the summer semester; generally, the first week of September.
- As required by individual courses.

REQUIRED SUMMER INTERNSHIPS

The MSE-SS and MSE-ES programs require students to fulfill a summer internship as part of their program curriculum. The internship is an integral part of these programs and works to prepare students for their practicum project coursework in the fourth semester. Upon arrival in their first semester, students are responsible for identifying prospective employers, preparing their resumes, improving their interviewing skills and obtaining and accepting an offer from an employer to perform a summer internship.

Students must obtain approval of their internship from the Graduate Academic Advisor in order to receive credit towards degree completion. In addition, international students must obtain approval from the Office of International Education (OIE) to ensure that they have complied with the policies and procedures of the OIE regarding the University's compliance with Federal immigration and employment laws. Students who do not receive approval before starting their internship will not receive credit towards their degree.

To prepare students for the summer internship, the MSE programs require students to complete several requirements in their first and second semesters, which will be communicated to students by the Graduate Academic Advisor. These requirements must be completed to remain in good standing within the program.

Students who successfully obtain internships will enroll in a 3-unit internship course in the third semester (summer), in addition to completing an internship entrance-survey in the third semester, and an internship exit-survey in the fourth semester. During the internship, students will complete a mid-semester progress report, and submit a final report and/or poster upon their return to receive a grade in the internship course. Students who fail to obtain an internship will participate in a graded, on-campus program arranged by the MSE programs to satisfy the learning objectives of the internship.

QUALIFYING EXAMINATIONS AND PROCEDURES

None Required.

THESIS DISSERTATION

None Required.

TEACHING REQUIREMENTS

None required.

LANGUAGE PROFICIENCY REQUIREMENTS

In order to be successful academically and professionally, students should be able to express themselves clearly via spoken and written English, as well as through presentations.

English language proficiency is demonstrated and verified as a part of the admissions process. In addition, the MSE programs require the successful completion of the two-part “Communication for Software Engineers” series.

RESIDENCE REQUIREMENTS

None required

ACADEMIC STANDING IN THE PROGRAM

ACADEMIC INTEGRITY, CHEATING AND PLAGIARISM

The Software Engineering Professional Programs has the highest expectations of academic integrity. As such, the programs will not tolerate any instance of cheating or academic misconduct.

Cheating includes but is not necessarily limited to:

1. Plagiarism, explained below.
2. Submission of work that is not the student's own for papers, assignments or exams.
3. Submission or use of falsified data.
4. Theft of or unauthorized access to an exam.
5. Use of an alternate, stand-in or proxy during an examination.
6. Use of unauthorized material including textbooks, notes or computer programs in the preparation of an assignment or during an examination.
7. Supplying or communicating in any way unauthorized information to another student for the preparation of an assignment or during an examination.
8. Collaboration in the preparation of an assignment. Unless specifically permitted or required by the instructor, collaboration will usually be viewed by the university as cheating. Each student, therefore, is responsible for understanding the policies of the department offering any course as they refer to the amount of help and collaboration permitted in preparation of assignments.
9. Submission of the same work for credit in two courses without obtaining the permission of the instructors beforehand.

Plagiarism includes, but is not limited to failure to indicate the source with quotation marks or footnotes where appropriate if any of the following are reproduced in the work submitted by a student:

1. A phrase, written or musical.
2. A graphic element.
3. A proof.
4. Specific language.
5. An idea derived from the work, published or unpublished, of another person.

The university has a very clear and specific [protocol for responding to alleged violations of academic integrity](#). Accordingly, the Software Engineering Professional Programs adheres closely to this policy. Carnegie Mellon's policy on Academic Disciplinary Actions Overview for Graduate Students describes procedures for disciplinary actions against graduate students in cases of alleged violations of academic regulations and the appeal process.

You may review the [University Policy on Academic Integrity](#) online.

ACADEMIC INTEGRITY PROGRAM POLICY

The majority of students in our programs don't cheat. Cheating is a choice. If a student chooses to cheat and is caught doing so, he/she can expect that the following things will happen:

- Student will be penalized on the assignment in question, and placed on probation. The student will remain on academic probation for the duration of the program.
- If the student is already on probation for any reason when the cheating incident is reported, he/she may be dismissed from the program.
- A second incident of the cheating offence is justification for dismissal.

- Students who receive an academic integrity violation are not eligible for leadership positions (i.e., Studio Manager, MSELi) and may not serve as an MSE Teaching Assistant.

All students should review and familiarize themselves with the University's Academic Integrity Policy. The [policy \[pdf\]](#) can be found online.

ACADEMIC PERFORMANCE REVIEWS

The MSE faculty conducts academic performance reviews each mid- and end-semester period in the fall, spring, and summer terms in order to monitor individual student and project team performances. All core and associated faculty, mentors and directors are invited to contribute input regarding student performance.

In assessing a student's performance, faculty, mentor and directors look to academic achievement, personal responsibility, teamwork, and overall progress. Should a student's effort fall below the acceptable level of academic performance and/or fail to meet standards established by Carnegie Mellon and the MSE programs, the student will be appropriately notified, presented with a suggested plan for improvement, and notified of the risks associated with failure to improve.

WRITTEN NOTIFICATION OF UNSATISFACTORY PROGRESS TOWARD A DEGREE

Following the posting of mid-term grades, students are notified orally and/or in writing of less-than-acceptable progress in their plan of study. Recommendations for a plan of action will be offered and expectations set for the student to demonstrate improvement. Failure to meet stated expectations can lead to dismissal from the program.

ACADEMIC PROBATION

Student progress is continually monitored. Should a student's overall QPA drop below 3.0 during a given semester, he or she may be placed on academic probation and required to improve his or her performance. Failure to improve one's QPA to 3.0 (or better) within the following semester may result in dismissal from the program.

APPEAL FOR ACADEMIC ACTIONS

Students should discuss any issue associated with academic matters with the Graduate Academic Advisor. The Program Director will address unresolved conflicts. If an issue continues to be unresolved, the student may appeal by following the university's [policy on academic actions](#).

ADDITIONAL DEPARTMENTAL POLICIES AND PROCEDURES

TAKING OR RETURNING FROM A LEAVE OF ABSENCE

- Students who are in good standing may apply for a leave of absence from the Program. Such a leave of absence is usually granted for a maximum of no more than one year and must be formalized by a written request. After that time, the student must contact the department for possible re-entry into the Program.
- The MSE Program reserves the right to set entry conditions that must be met when a student returns from a Leave of Absence. A student will be granted only one leave of absence from the MSE Program.
- Refer to the university's policy on [Leave of Absence and Return from Leave](#).

DEPARTMENT EXPECTATIONS REGARDING EMPLOYMENT SEARCH

The Software Engineering Professional Programs aim to support each student's professional development; academic performance, however, remains the priority. It is unacceptable for students to miss classes or coursework in order to attend career fairs or interviews. Students should conduct employment searches in a manner that does not impede upon their academic progress. Furthermore, students are expected to exhibit certain ethical behavior when pursuing employment, such as arriving prior to the scheduled time for interviews, being truthful about their qualifications, and honoring their agreements with recruiters when applying for jobs. Once a student accepts an offer of employment, they may not continue searching for, applying to, or interviewing for another position.

The Career and Professional Development Center (CPDC) reserves the right to limit access to [Handshake](#) for any users that do not follow the ethical job and internship search policy.

Accepting an employment offer after you previously accepted an offer with another employer is defined as 'reneging' and is considered dishonest and unethical and carries serious implications. If a student reneges on an offer that they have previously accepted, then that student will permanently lose access to career services provided by the Software Engineering Professional Programs and the University.

ORIENTATION

The MSE programs offer a mandatory orientation to new students during the week prior to the beginning of fall classes. This orientation may also be attended by continuing students and may be followed shortly thereafter with a "refresher" of procedures.

INTELLECTUAL PROPERTY

The professional graduate software engineering programs adhere to the university's [intellectual property policy](#).

GRANDFATHER POLICY

When policies change, it is because the department recognizes that the newly-adopted rule is an improvement. Students enrolled in a degree program that is affected by a change in policy may, in some cases, choose to be governed by the policy in effect at the time of their matriculation.

TUITION AND FINANCIAL AID

ASSOCIATED FEES

The [applicable fees](#) for students enrolled in all programs within the School of Computer Science can be found online.

Should a student choose to travel to a conference for professional development, the Graduate Student Assembly and the Provost's Office offer funding opportunities. Information on this [funding and the application process](#) is available online.

UNIVERSITY FINANCIAL AID

Information pertaining to [graduate student financial aid information](#) is available on the HUB website. The site includes funding options, the Graduate Financial Aid Guide, how to apply for financial aid, as well as other helpful links.

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.

TUITION PAYMENTS

The HUB can offer you [clarity on your invoice](#), payment options, etc.

Students are advised to handle all tuition matters directly with the HUB. MSE/MSIT program administrators are unable to resolve tuition problems on behalf of individual students.

TUITION PAYMENT FOR SUMMER COURSES/FULL- AND PART-TIME STUDENTS

Students enrolled in the full-time campus programs are charged the per-semester tuition based upon the rate at the time of their matriculation.

TUITION REFUND POLICY FOR FULL-TIME AND PART-TIME STUDENTS

The MSE programs adhere to the university [policy pertaining to tuition refunds](#).

SPONSORED STUDENTS

A [sponsored student](#) is one who has another party (such as an embassy or sponsor company) under agreement to pay the student's tuition.

CARNEGIE MELLON EMPLOYEES REIMBURSEMENT PROCEDURE

Contact the Benefits Office for specific [information on tuition benefits](#).

Note: Because tuition remission is a taxable benefit, employees of Carnegie Mellon University assume the payment of taxes for any graduate courses taken.

FULL-TIME/PART-TIME STATUS REQUIREMENTS

- To be considered a full-time student, a student must be registered for a minimum of 36 units in every semester.
- All international students are required by federal law to maintain full-time status. Failure to maintain full-time status will result in loss of a student visa (and, therefore, "permit of stay").
- All students having a Stafford Loan cannot drop below part-time status.

FINANCIAL SUPPORT FROM THE MSE/MSIT PROGRAM

- The MSE programs do not provide financial support. The program does offer two competitive funding opportunities for exceptional performers (see below),
- Carnegie Mellon University, SCS and the MSE programs do not grant tuition waivers.

EXTERNAL FELLOWSHIPS

- The MSE programs accept students with external fellowships.
- Information on [external fellowships](#) is available online.
- The MSE programs seek to list applicable third-party funding sources. You can view the working list of fellowships and scholarship for which you may be eligible here: [External Funding Opportunities](#)
- The receipt of outside funding sources will not adversely affect the student's eligibility for the MSE Fellowship. However, as financial need is a factor considered for the James E. Tomayko Scholarship, it may impact the student's eligibility for that scholarship.

MSE FELLOWSHIP

The MSE programs offer a one-year fellowship to an outstanding student who completes his or her studies, yet wishes to remain engaged with the program conducting research. Such fellowship candidates are recommended by program advisors and/or program faculty, are formally reviewed, and must be unanimously approved. If you are interested in this fellowship, ensure that your program advisor is aware of your interest.

JAMES E. TOMAYKO SCHOLARSHIP

The James E. Tomayko Scholarship is awarded to one or more students who demonstrate academic excellence, leadership potential, strong communication skills, exceptional personal initiative, and demonstrated financial need. Prospective awardees are generally identified upon the completion of one or two full semesters in the program, with recipients chosen by committee.

POLICY ON OUTSIDE EMPLOYMENT

Full time graduate students within the Software Engineering Professional Programs are ordinarily expected to devote their full attention and energy to their educational endeavors. Classwork and project assignments are deliberately planned so as to occupy full time students, thus effectively precluding outside employment and consulting.

All full-time students are advised to decline such work and concentrate on their graduate studies, with exception of a summer internship that is required as part of a program plan of study.

AVAILABILITY OF SUMMER EMPLOYMENT

The MSE programs do not provide summer employment opportunities. Where the programs require a full-time course load during the summer semester, it is highly inadvisable to seek internal or external summer employment.

APPENDIX

APPENDIX A. MSE PLAN OF STUDY

The MSE is a 16-month program consisting of three traditional semesters and one intensive summer session. The program begins in the fall semester, and concludes the following year in December. Project work begins in the spring, with the summer session devoted primarily to the Studio.

| | Units Required | Courses |
|---|----------------|--|
| Core | 60 | 17-651, 17-652, 17-653, 17-654, 17-655 |
| Studio Project | 84 | 17-676 (0 units), 17-671 (12 units), 17-672 (36 units), 17-673 (36 units) |
| Electives/ Independent Study | 45 | Generally, electives are chosen from Computer Science, Robotics, Heinz College, Electrical Engineering, and Software Engineering, but they can come from any school or department within Carnegie Mellon as long as: (1) the student has not already taken the course and (2) the course is in an area that is consistent with the student's career goals. |
| Communication | 6 | 17-656 (3 units), 17-657 (3 units) |
| Prerequisite | - | 15-513 |

*All courses above, unless otherwise noted, are 12 units each.

SAMPLE PLAN OF STUDY

| |
|--|
| Summer Pre-requisite |
| <ul style="list-style-type: none"> 15-513 Introduction to Computer Systems |
| Semester 1 (Fall) |
| <ul style="list-style-type: none"> 17-651 Models of Software Systems 17-652 Methods: Deciding What to Design 17-653 Managing Software Development 17-656 Communication for Software Engineers I Elective course |
| Semester 2 (Spring) |
| <ul style="list-style-type: none"> 17-654 Analysis of Software Artifacts 17-655 Architectures for Software Systems 17-657 Communication for Software Engineers II |

- 17-676 Software Engineering Bootcamp
- 17-671 Software Development Studio I
- Elective course

Semester 3 (Summer)

- 17-672 Software Development Studio II
- Elective course

Semester 4 (Fall)

- 17-673 Software Development Studio III
- Elective course

APPENDIX B. MSE-SS PLAN OF STUDY

The Master of Software Engineering – Scalable Systems is a 16-month professional degree program designed for early career professionals with less than two years of work experience.

| | Units Required | Courses |
|------------------------------------|----------------|--|
| Core | 84 | 17-651, 17-652, 17-653, 17-654, 17-655, 17-648, 17-611 |
| Practicum | 36 | 17-675 |
| Internship | 3 | 17-667 |
| Electives/Independent Study | 24 | Generally, electives are chosen from Computer Science, Robotics, Heinz College, Electrical Engineering, and Software Engineering, but they can come from any school or department within Carnegie Mellon as long as: (1) the student has not already taken the course and (2) the course is in an area that is consistent with the student's career goals. |
| Communication | 6 | 17-656 (3 units), 17-657 (3 units) |
| Prerequisite | - | 15-513 |

*All courses above, unless otherwise noted, are 12 units each.

SAMPLE PLAN OF STUDY

| |
|--|
| Summer Pre-requisite |
| <ul style="list-style-type: none"> 15-513 Introduction to Computer Systems |
| Semester 1 (Fall) |
| <ul style="list-style-type: none"> 17-651 Models of Software Systems 17-652 Methods: Deciding What to Design 17-653 Managing Software Development 17-656 Communication for Software Engineers I Elective course |
| Semester 2 (Spring) |
| <ul style="list-style-type: none"> 17-654 Analysis of Software Artifacts 17-655 Architectures for Software Systems 17-648 Engineering Data Intensive Scalable Systems 17-611 DevOps: Modern Deployment 17-657 Communication for Software Engineers II |
| Semester 3 (Summer) |
| <ul style="list-style-type: none"> 17-667 Internship for Software Engineers |

Semester 4 (Fall)

- 17-675 Software Engineering Practicum
- Elective course

APPENDIX C. MSE-ES PLAN OF STUDY

The MSIT-ES is a 16-month professional degree program designed for early career professionals with less than two years of work experience.

| | Units Required | Courses |
|------------------------------------|----------------|--|
| Core | 84 | 17-651, 17-652, 17-653, 17-654, 17-655, 15-640, 17-722 |
| Practicum | 36 | 17-675 |
| Internship | 3 | 17-667 |
| Electives/Independent Study | 24 | Generally, electives are chosen from Computer Science, Robotics, Heinz College, Electrical Engineering, and Software Engineering, but they can come from any school or department within Carnegie Mellon as long as: (1) the student has not already taken the course and (2) the course is in an area that is consistent with the student's career goals. |
| Communication | 6 | 17-656 (3 units), 17-657 (3 units) |
| Prerequisite | - | 15-513 |

*All courses above, unless otherwise noted, are 12 units each.

SAMPLE PLAN OF STUDY

| |
|---|
| Summer Pre-requisite |
| <ul style="list-style-type: none"> 15-513 Introduction to Computer Systems |
| Semester 1 (Fall) |
| <ul style="list-style-type: none"> 17-651 Models of Software Systems 17-652 Methods: Deciding What to Design 17-653 Managing Software Development 15-640 Distributed Systems 17-656 Communication for Software Engineers I |
| Semester 2 (Spring) |
| <ul style="list-style-type: none"> 17-654 Analysis of Software Artifacts 17-655 Architectures for Software Systems 17-657 Communication for Software Engineers II 17-722 Building User-Focused Sensing Systems Elective course |
| Semester 3 (Summer) |

- 17-667 Internship for Software Engineers

Semester 4 (Fall)

- 17-675 Software Engineering Practicum
- Elective course

APPENDIX D. MBA/MSE PLAN OF STUDY

The Master of Software Engineering and Master of Business Administration (MBA/MSE) is a seven semester program that starts each year in late August. The dual-degree program was designed for candidates who are for exceptionally strong technically and across disciplines such as business and economics.

Semesters one, two and three are taken at the Tepper School of Business, with students beginning the on-campus software engineering aspect of the dual degree program in the second fall term. The MSE portion of the Plan of Study is below.

| | Units Required | Courses |
|---|----------------|--|
| Core | 60 | 17-651, 17-652, 17-653, 17-654, 17-655 |
| Practicum | 84 | 17-676 (0 units), 17-671 (12 units), 17-672 (36 units), 17-673 (36 units) |
| Electives/ Independent Study | 45 | Generally, electives are chosen from the Tepper School of Business and are consistent with the student's career goals. |
| Communication | 6 | 17-656 (3 units), 17-657 (3 units) |
| Prerequisite | - | 15-513 |

* All courses above, unless otherwise noted, are 12 units each.

SAMPLE PLAN OF STUDY

| |
|--|
| Summer Pre-requisite |
| <ul style="list-style-type: none"> 15-513 Introduction to Computer Systems |
| Semester 1 (Fall) |
| <ul style="list-style-type: none"> 17-651 Models of Software Systems 17-652 Methods: Deciding What to Design 17-653 Managing Software Development 17-656 Communication for Software Engineers I Elective course |
| Semester 2 (Spring) |
| <ul style="list-style-type: none"> 17-654 Analysis of Software Artifacts 17-655 Architectures for Software Systems |

- 17-657 Communication for Software Engineers II
- 17-676 Software Engineering Bootcamp
- 17-671 Software Development Studio I
- Elective course

Semester 3 (Summer)

- 17-672 Software Development Studio II
- Elective course

Semester 4 (Fall)

- 17-673 Software Development Studio III
- Elective course

APPENDIX E. MSIT-SE PLAN OF STUDY

The MSIT-SE is a 12-month program for early career professionals with less than two years of work experience.

| | Units Required | Courses |
|---|----------------|--|
| Core | 60 | 17-651, 17-652, 17-653, 17-654, 17-655 |
| Studio Project | 36 | 17-676 (0 units), 17-677 (12 units), 17-678 (24 units) |
| Electives/ Independent Study | 45 | Generally, electives are chosen from Computer Science, Robotics, Heinz College, Electrical Engineering, and Software Engineering, but they can come from any school or department within Carnegie Mellon as long as: (1) the student has not already taken the course and (2) the course is in an area that is consistent with the student's career goals. |
| Communication | 6 | 17-656 (3 units), 17-657 (3 units) |
| Prerequisite | - | 15-513 |

*All courses above, unless otherwise noted, are 12 units each.

SAMPLE PLAN OF STUDY

| |
|---|
| Summer Pre-requisite |
| <ul style="list-style-type: none"> 15-513 Introduction to Computer Systems |
| Semester 1 (Fall) |
| <ul style="list-style-type: none"> 17-651 Models of Software Systems 17-652 Methods: Deciding What to Design 17-653 Managing Software Development 17-656 Communication for Software Engineers I Elective course |
| Semester 2 (Spring) |
| <ul style="list-style-type: none"> 17-654 Analysis of Software Artifacts 17-655 Architectures for Software Systems 17-657 Communication for Software Engineers II 17-676 Software Engineering Bootcamp 17-677 MSIT Project I |

- Elective course

Semester 3 (Summer)

- 17-678 MSIT Project II
- Elective course
- Elective course