

INSTITUTE OF SOFTWARE RESEARCH
SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS

2016-2017
MSE/MSIT STUDENT HANDBOOK

MASTERS OF SOFTWARE ENGINEERING
MASTERS OF SCIENCE INFORMATIONAL TECHNOLOGY – SOFTWARE ENGINEERING
MASTERS OF SCIENCE INFORMATIONAL TECHNOLOGY – EMBEDDED SOFTWARE ENGINEERING

Updated: August 2016

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

DEDICATION

This guide is dedicated to the late MSE graduate, Curtis M. Scott, who started the idea of helping incoming students with his *Uncle Rusty's Guide to the Telesoft Environment*.

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WELCOME FROM THE MASTER OF 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, and 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, university and program-specific resources, ranging from academic policies to campus dining options. We hope that you will find the guide useful. However, be aware that the Software Engineering Professional Programs adheres to all university guidelines and procedures, detailed below.

UNIVERSITY POLICIES & EXPECTATIONS

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

- The Word/Student Handbook: www.cmu.edu/student-affairs/theword//index.html
- Academic Integrity Website: www.cmu.edu/academic-integrity
- University Policies Website: www.cmu.edu/policies/
- Graduate Education Website: <http://www.cmu.edu/graduate/policies/index.html>

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 on 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 at: www.cmu.edu/policies/documents/Disc.html and in The Word at: www.cmu.edu/student-affairs/theword//comm_standards/standards.html, including contact information for questions.

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 on-line at: <http://www.cmu.edu/policies/documents/SoA.html>.

THE CARNEGIE MELLON CODE

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

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.

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.

To review the University's expectations pertaining to academic integrity, see:

<http://www.cmu.edu/academic-integrity/>

The Carnegie Mellon Code can also be found on-line at:

<http://www.cmu.edu/student-affairs/theword/code.html>.

STATUTE OF LIMITATIONS

As outlined in Carnegie Mellon's Master's Students Statute of Limitations, <http://www.cmu.edu/policies/documents/MastersStudentStatuteLimitations.html>, 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 policy can be viewed in its entirety at: http://www.cmu.edu/policies/documents/SA_SH.htm.

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

- Office of Title IX Initiatives, <http://www.cmu.edu/title-ix/>, 412-268-7125
- Sexual Harassment Advisors, found in appendix A of the Policy Against Sexual Harassment and Sexual Assault;
- Survivor Support Network, found in appendix B of the Policy Against Sexual Harassment and Sexual Assault;
- Sexual Harassment Process and Title IX Coordinators, found in section II of the Policy Against Sexual Harassment and Sexual Assault;
- University Police, 412-268-2323
- University Health Services, 412-268-2157
- Counseling & 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 regarding time away. Students must contact the Office of the Dean of Student Affairs to register for Maternity Accommodations. Students will complete an information form and meet with a member of the Dean's Office staff to determine resources and procedures appropriate for the individual student. Planning for the student's discussion with her academic contact(s) (advisor, associate dean, etc.) will be reviewed during this meeting. http://www.cmu.edu/student-affairs/theword/acad_standards/creative/studentmaternityprotocol.html

CARNEGIE MELLON STUDENT HANDBOOK: THE WORD

The WORD (<http://www.cmu.edu/student-affairs/theword/>) 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 you achieve your full potential as a member of the Carnegie Mellon community. Information about the following is included in The WORD (not an exhaustive list) and graduate students are encouraged to bookmark this site and refer to it often. University policies can also be found in full text at: <http://www.cmu.edu/policies/>.

KEY OFFICES FOR GRADUATE STUDENT SUPPORT

OFFICE OF THE ASSISTANT VICE PROVOST FOR GRADUATE EDUCATION

The Office of the Assistant Vice Provost for Graduate Education, AVPGE, directed by Suzie Laurich-McIntyre, Ph.D., Assistant Vice Provost for Graduate Education (www.cmu.edu/graduate; grad-ed@cmu.edu), provides central support for graduate students in a number of roles. These include: being an ombudsperson and resource person for graduate students as an informal advisor; resolving formal and informal graduate student appeals; informing and assisting in forming policy and procedures relevant to graduate students; and working with departments on issues related to graduate students and implementation of programs in support of graduate student development.

The Office of the AVPGE often partners with the division of Student Affairs to assist graduate students with their Carnegie Mellon experience. Senior members of the student affairs staff are assigned to each college (college liaisons) and are often consulted by the Assistant Vice Provost for Graduate Education and departments on an individual basis to respond to graduate student needs.

The Office of the Assistant Vice Provost for Graduate Education (AVPGE) offers a robust schedule of professional development opportunities. Some are geared towards a specific population (master's students, PhD students at the beginning of their program, graduate students seeking tenure track positions, etc.) and others are open to all graduate students (time management, balancing, staying healthy). A full schedule of programs can be found at: <http://www.cmu.edu/graduate/>.

The Office of the AVPGE also coordinates several funding programs, and academically focused seminars and workshops that advise, empower and help retain all graduate students, particularly graduate students of color and women in the science and technical fields. The fundamental goals of our programs have been constant: first, to support, advise and guide individual graduate students as they work to complete their degrees; second, to contribute to the greatest degree possible to the diversification of the academy. Visit the Graduate Education website for information about:

- Conference Funding Grants
- Graduate Small Project Help (GuSH) Research Funding
- Graduate Student Professional Development: seminars, workshops and resources
- Graduate Women Gatherings (GWG)
- Inter-university Graduate Students of Color Series (SOC)

OFFICE OF THE DEAN OF STUDENT AFFAIRS

The Office of the Dean (www.cmu.edu/student-affairs/index.html) provides central leadership of the metacurricular experience at Carnegie Mellon. The offices that fall under the division of Student Affairs led by Vice President and Dean of Student Affairs Gina Casalegno, include (not an exhaustive list):

- Career and Professional Development Center
- Cohon University Center
- Counseling & Psychological Services (CAPS)
- Dining Services
- Housing Services
- Office of Integrity and Community Standards
- Office of International Education (OIE)
- Student Activities
- University Health Services

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: www.cmu.edu/academic-integrity.

EBERLY CENTER FOR TECHING EXCELLENCE & EDUCATIONAL INNOVATION

Support for graduate students who are or will be teaching is provided in many departments and also centrally by the Eberly Center for Teaching Excellence & Educational Innovation (www.cmu.edu/teaching). The Eberly Center offers activities for current and prospective teaching assistants as well as any graduate students who wish to prepare for the teaching component of an academic career. The Center also assists departments in creating and conducting programs to meet the specific needs of students in their programs. Specific information about Eberly Center support for graduate students can be found at: www.cmu.edu/teaching/graduatestudentsupport/index.html.

CARNEGIE MELLON ETHICS HOTLINE

The health, safety and well-being of the university community are top priorities at Carnegie Mellon University. CMU provides a hotline that all members of the university community should use to confidentially report suspected unethical activity relating to financial matters, academic and student life, human relations, health and campus safety or research.

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

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

GRADUATE STUDENT ASSEMBLY

The Carnegie Mellon Student Government consists of an Executive Branch and a Legislative Branch. This is the core of traditional student government, as governed by the Student Body Constitution. The Executive Branch serves the entire student body, graduate and undergraduate, and consists of one president and four vice-presidents. The Legislative Branch for graduate students, The Graduate Student Assembly (GSA) (www.cmu.edu/stugov/gsa/index.html) 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. GSA also contributes a significant amount of funding for conferences and research, available to graduate students through application processes managed by the Office of the Assistant Vice Provost for Graduate Education. GSA also plans various social opportunities for graduate students and maintains a website of graduate student resources on and off-campus, (www.cmu.edu/stugov/gsa/Resources). Each department has representation on GSA and receives funding directly from GSA's use of the student activities fee for departmental activities for graduate students. The department rep(s) is the main avenue of graduate student representation of and information back to the graduate students in the department.

INTERCULTURAL COMMUNICATION CENTER (ICC)

The Intercultural Communication Center (ICC) (www.cmu.edu/icc/) is a support service offering both credit and non-credit classes, workshops, and individual appointments designed to equip nonnative English speakers (international students as well as international students who attended high school and/or undergraduate programs in the U.S.) with the skills needed to succeed in academic programs at Carnegie Mellon. In addition to developing academic literacy skills such as speaking, reading and writing, students can learn more about the culture and customs of the U.S. classroom. The ICC also helps international teaching assistants (ITAs) who are non-native English speakers develop fluency and cultural understanding to teach successfully at Carnegie Mellon and provides ITA testing, required testing indicating a nonnative speaking student has a language proficiency required before being allowed to work with undergraduates in classes, labs or individual meetings.

OFFICE OF INTERNATIONAL EDUCATION (OIE)

Carnegie Mellon hosts international graduate and undergraduate students who come from more than 90 countries. Office of International Education (OIE) (www.studentaffairs.cmu.edu/oie/) is the liaison to the University for all non-immigrant students and scholars. 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.

KEY OFFICES FOR HEALTH, WELLNESS & SAFETY

COUNSELING & PSYCHOLOGICAL SERVICES

Counseling & Psychological Services (CAPS) (www.studentaffairs.cmu.edu/counseling) 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 perhaps confused 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 services are provided at no cost. Appointments can be made in person or by telephone, 412-268- 2922.

HEALTH SERVICES

University Health Services (UHS) (www.cmu.edu/HealthServices/) 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. Graduate students should contact UHS to discuss options for health insurance for spouses, domestic partners and dependents. Appointments can be made by visiting UHS's website or by telephone, 412-268- 2157.

ASSISTANCE FOR INDIVIDUALS WITH DISABILITIES

The Office of Disability Resources at Carnegie Mellon University 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 must submit a [Voluntary Disclosure of Disability Form](#) to access@andrew.cmu.edu to begin the interactive accommodation process.

For more information please see <http://www.cmu.edu/hr/eos/disability/index.html>. Students with disabilities are encouraged to self-identify with Equal Opportunity Services by contacting Larry Powell, 412-268-2013, lpowell@andrew.cmu.edu to access the services available at the university and initiate a request for accommodations.

UNIVERSITY POLICE

The University Police Department (<http://www.cmu.edu/police/>) 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 and escort services, fixed officer and foot officer patrols, event security, and crime prevention and 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.

Shuttle and Escort Services

University Police 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 at: <http://www.cmu.edu/police/shuttleandescort/>

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

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

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 want to become technical and strategic leaders; 16 months, full-time. Required degree units: 195
- **[Master of Software Engineering/Masters in Business Administration \(MBA/MSE\)](#)**
 - For engineering or science professionals who have at least two years of experience and 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 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
- **[Master of Science in Information Technology - Embedded Software Engineering \(MSIT—ESE\)](#)**
 - For software professionals who have at least one year of experience and want to enhance their embedded software systems development skills; 16 months, full-time. (Offered jointly with the Carnegie Mellon Department of Electrical and Computing Engineering. Required degree units: 153

Policies and procedures mentioned herein pertain primarily to the above-listed degree programs. All questions can be directed to the Programs Manager, Jane Dixon Miller (mil3@cs.cmu.edu).

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

Name/Title	Office	Phone
Andrew Moore, <i>Dean, School of Computer Science</i>	GHC 5113	334-2063
Frank Pfenning, <i>Computer Science Department Head</i>	GHC 7019	268-6343
Guy Blelloch, <i>Associate Dean for Undergrad Education</i>	GHC 9211	268-6245
Garth Gibson, <i>Assoc. Dean for Master's Programs</i>	GHC 9111	268-5890

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

Bill Scherlis <i>Director, ISR</i>	WeH 5222	268-8741
Anthony Lattanze <i>Director, Software Engineering Professional Programs</i>	SCR 278	268-4736
David Root <i>Director, Distance Education</i>	SCRG 272	268-5198

MASTER OF SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS

FACULTY

Name/Title	Classes/Interactions	Contact Info
David Garlan <i>Director, Software Engineering Professional Programs</i> <i>SCS Professor</i>	Models of Software Systems Architectures for Software Systems	WeH 4218 268-5056 garlan@cs.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 D. Breaux <i>Asst. Professor</i>	Methods: Deciding What to Design	WeH 5103 268-7334 breaux@cs.cmu.edu
Jennifer Cirolì <i>Adjunct Teaching Instructor</i>	Communication for Software Engineers	jcirolì@andrew.cmu.edu

Tom Keating <i>Assistant Teaching Professor</i>	Communication for Software Engineers	tkeating@cs.cmu.edu
Chris F. Kemerer <i>Adjunct Teaching Professor</i>	Technology Innovation, Adoption, and Diffusion	Univ. of Pittsburgh 648-1572 ckemerer@katz.business.pitt.edu
Peter Kolenich <i>Adjunct Teaching Instructor</i>	Communication for Software Engineers	kolenich@andrew.cmu.edu
Anthony J. (Tony) Lattanze <i>Teaching Professor</i> <i>Director of MSIT-ESE Program</i>	Hardware for Software Engineers Architectures for Software Systems	SCRG 278 268-4736 lattanze@cs.cmu.edu
Claire LeGoues <i>Assistant Professor</i>	Analysis of Software Artifacts	WeH 5117 268-6954 legoues@cmu.edu
Eduardo Miranda <i>Associate Teaching Professor</i>	Estimating Software Development Management for SW Development for Tech Executives	SCRG 268 268-8450 mirandae@andrew.cmu.edu
David Root <i>Associate Teaching Professor</i> <i>Associate Director, Distance Education Program</i>	Managing Software Development Risk Management	SCRG 272 268-5198 droot@cs.cmu.edu
Manuel (Mel) Rosso-Llopart <i>Associate Teaching Professor</i>	Introduction to Personal Software Process Introduction to Team Software Process Data Structures and Algorithms for Engineers Risk Management	SCRG 270 268-4629 rosso@cs.cmu.edu

MENTORS

Name/Title	Classes/Interactions	Contact Info
Jeff Gennari <i>Senior Member of the Technical Staff, SEI</i>	Mentor –MSIT-SE Project Member- 2017 Admissions Committee Co-instructor - Analysis of Software Artifacts	SEI 4206 268-1404 jgennari@andrew.cmu.edu
Scott Hissam <i>Member of the Technical Staff, SEI</i>	Mentor –MSIT-SE Project	SEI 5206 268-6526 shissam@cmu.edu
Clifford C. (Cliff) Huff <i>Senior Member of the Operational Staff, SEI</i>	Mentor –MSIT-SE Project Member – 2017 Admissions Committee	4570 Fifth Ave 268-7605 cch@sei.cmu.edu
Andrew Mellinger <i>Senior Software Developer, SEI</i>	Mentor –MSIT-SE Project Member – 2017 Admissions Committee	CIC 2317 268-5161 amellinger@cmu.edu
Ipek Ozkaya <i>Senior Member of the Technical Staff, SEI</i>	Mentor –MSIT-SE Project	SEI 5118 268-3551 ozkaya@sei.cmu.edu
Vijay Vadlamudi <i>Manager, Enterprise Business Systems, SEI</i>	Mentor –MSIT-SE Project Member – 2017 Admissions Committee	Bakery Square B145 268-7743 vijaysai@cmu.edu

ADMINISTRATIVE STAFF

Name/Title	Role/Interactions	Contact Info
Jane Dixon Miller <i>Masters Programs Manager Associate Director for International Initiatives</i>	Oversees all aspects of the Master's programs' administration. You will likely speak to her regarding admissions follow up, performance review issues, personal and professional conflicts, course and faculty concerns, program management and direction.	SCRG 274 268-4359 mil3@cs.cmu.edu
Vaishali Gakhar <i>Student-Alumni Relations Coordinator/Corporate Relations Manager</i>	Coordinates alumni outreach efforts, student relations, and job placement. Interfaces directly with industry regarding project sponsorship and engagement with program.	SCRG 275 268-7881 vgakhar@andrew.cmu.edu
Lauren Martinko <i>Masters Programs Administrator</i>	Coordinates MSE and MSIT-SE programs. Among many other program-related issues, you will likely go to her regarding admission questions, registration, commencement, orientation and general program information,	SCRG 276 268-6441 laurenma@andrew.cmu.edu

Linda Smith <i>Masters Programs Administrator</i>	Coordinates MSIT-ESE, Distance Education, MSIT-SE SSN, 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 jtsmith@cs.cmu.edu
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FACILITIES STAFF

Name/Title	Role/Interactions	Contact Info
Jim Skees <i>Director of Building Facilities, SCS</i>	You may contact Jim regarding any issue you may have with the building or furniture. Also, Jim should be contacted in the event of an accident on the property.	GHC 4103 268-7653 skees@cs.cmu.edu
Paul Stockhausen <i>Assistant Facilities Manager, SCS</i>	You may contact Paul regarding any issue you may have with the building, furniture, or phones.	GHC 4103 268-8223 stocky@cs.cmu.edu

TECHNICAL STAFF

Name/Title	Role/Interactions	Contact Info
Emanuel Bowes <i>Systems Technician, ISR</i>	Emanuel maintains servers and provides tech support for the MSE programs.	WeH 5301 268-3369 peb2+@cs.cmu.edu
Ryan Johnson <i>Desktop Support Technician, ISR</i>	Tom Pope is the Assistant Systems Manager for the Institute for Software Research. His responsibilities include IT support, system administration, and website support.	WeH 5301 268-8615 Ryanrj@andrew.cmu.edu
John Lombardo <i>Video Technician, ISR</i>	Video Technician for the MSE program. He is responsible for taping classes for distance education.	WeH 4116 268-5414 lumbo65@cs.cmu.edu
John T. Penderville <i>Video Systems Technician, ISR</i>	Video Technician for the MSE program. He is responsible for taping classes for distance education.	WeH 4116 268-3479 jtpender@andrew.cmu.edu

Thomas W. Pope <i>Systems Manager, ISR</i>	Chris is the Systems Manager for the Institute and as such, runs both the IT services team as well as the video production team.	WeH 5113 268-8615 tpope@cmu.edu
Jennifer S. Potter <i>Courseware Specialist</i>	Jen Potter is the Courseware Specialist for the MSE-DE program. She is responsible for writing and editing print and on-line course materials for distance education.	jspotter@cs.cmu.edu
Jim Tobin <i>Videography Team Manager, ISR</i>	Jim Tobin is the Video Technician Manager for the MSE program. He is responsible to providing video support for distance education delivery.	WeH 4116 268-7695 jtobin@cmu.edu

For a complete listing of CMU faculty and staff, please visit: <http://www.cmu.edu/Directory>

MASTER OF SOFTWARE ENGINEERING PROFESSIONAL PROGRAMS INFORMATION

MSE/MSIT REASONABLE PERSON POLICY

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 Policy”. This policy essentially 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).

The governing principles of the Reasonable Person Policy are:

- 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 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 MASTER OF SOFTWARE ENGINEERING 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

- Keys to lockable student storage space and a general access key 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/MSIT-SE student space are lockable and remain the responsibility of the assigned student.
- Please do not invite friends into the MSE/MSIT-SE professional areas on a regular basis.
- In case of theft of property, either personal or university, please notify Mr. Jim Skees, Campus Security, and an MSE/MSIT programs administrator.
- Emergency egress can be made by using any of the exit stairways. These can be found inside the MSE/MSIT professional area, or in the 2nd floor main hallway.
- The university's on-campus emergency procedure can be reviewed here: http://www.cmu.edu/student-affairs/theword//comm_standards/emergencies.html

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 S. 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 parking services website at: <http://www.cmu.edu/parking/>

REPAIRS

- **Computing equipment**
 - Notify an ISR IT technical support staff.
- **Print/copy/fax equipment**
 - Notify a program administrator.
 -
- **Furniture**
 - Notify Jim Skees (skees@cs.cmu.edu) or Paul Stockhausen (stocky@cs.cmu.edu).
- **Services**
 - For furniture, lighting, heating, cooling, etc., contact Jim Skees or Paul Stockhausen.
 - For computers, contact the Andrew help desk (Ext. 4357) or the ISR Systems Mgr. (Ext. 7138).

ACCIDENTS ON CMU PROPERTY

Please report all accidents to Jim Skees (skees@cs.cmu.edu) 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/MSIT 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 outside of Linda Smith's office (SCRG 277). The other is located in the fax/supply room (SCRG 283).

DEPARTMENT COMPUTER CLUSTERS

There are a number of computer clusters located throughout the CMU campus. For locations, see: <http://www.cmu.edu/computing/clusters//>

OFFICE SUPPLIES AND EQUIPMENT

INDIVIDUAL SUPPLIES

- Each Studio team has been assigned a designated team space in the student area. This team 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 filing 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/POLICIES

EXPENSES

- Any expenses incurred on behalf of the program and ***approved in advance by the Program Manager*** may be reimbursed.
- Expenses associated with projects that have been pre-approved by the Program Manager or Director 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 and MSIT 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 Program 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/MSIT 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 Program Manager is needed prior to the purchase being made. Once approved, the appropriate Program Administrator can finalize the transaction.

PROGRAM APPROACH TO PRESS AND MEDIA RELATIONS

The Program Manager is the point-of-contact between news media and the MSE/MSIT 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 either the Program Director or Program 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 Program Manager, Jane Dixon Miller, or the Program Director, Dr. David Garlan.

PROGRAM/DEPT/COLLEGE/UNIVERSITY BRANDS 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: <http://www.cmu.edu/marcom/brand-guidelines/index.html>

If you would like to use the Software Engineering unit mark, please contact the Program Manager, Jane Dixon Miller, 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 a 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).

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 part-time format, and must be completed within five (5) years from the time of program matriculation.

MSIT-ESE 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 under special/exceptional circumstances.

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/MSIT 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 Program 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.

COURSE OF STUDY

To receive the Master of Software Engineering (MSE), the Master of Business Administration/Master of Software Engineering (MBA/MSE), Master of Science in Information Technology – Software Engineering (MSIT-SE), or Master of Science in Information Technology-Embedded Software Engineering (MSIT-ESE) 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 required/pre-requisite, core or project course, the course must be repeated, regardless of the QPA. A “B-“(B minus) or less in any course may jeopardize the student’s good academic standing in the Program. The required Communication courses must be successfully completed with a ‘pass’ designation.

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

MSE:

<http://mse.isri.cmu.edu/software-engineering/web3-programs/MSE/Plan%20of%20Study.html>

MBA/MSE:

<http://mse.isri.cmu.edu/software-engineering/web3-programs/MBA-MSE/Plan%20of%20Study.html>

MSIT-SE:

<http://mse.isri.cmu.edu/software-engineering/web3-programs/MSIT-SE/Plan%20of%20Study.html>

MSIT-ESE:

<http://mse.isri.cmu.edu/software-engineering/web3-programs/MSIT-ESE/Plan%20of%20Study.html>

Note 1: 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.

Note 2: 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. Registration for greater than 51 units requires the advance permission and approval/signature of the Program Manager and Director.

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. MSIT-ESE students should plan to select technical courses, although some exceptions to this rule will be considered. All MSE and MSIT students are required to take a minimum of 45 units of elective coursework. 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.

WHAT COURSES COUNT AS ELECTIVES?

Generally, electives are chosen from Computer Science, Robotics, Tepper School of Business, Heinz College, Electrical Engineering, and Software Engineering, but they can come from any school or department within Carnegie Mellon as long as:

- the student has not already taken the course;
- the undergraduate course is a 300+ level or higher;
- the course has been approved by the student’s academic advisor.

One undergraduate course may apply toward the degree’s elective requirement. There is an exception for a second undergraduate course to be taken provided the undergraduate course is a pre-requisite for a required course in the MSIT-ESE or MITS program(s). In this exceptional case, both courses will count toward degree completion requirements. The undergraduate course will factor into the student’s overall QPA on the university’s official transcript. Elective courses may be taken pass/fail although in this circumstance, *neither the units nor the course can be used toward degree completion requirements.*

INDEPENDENT STUDY COURSES

An independent study 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 Program(s)'s Director(s). 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 member/s 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, inclusive of signatures of the student and the supervisor, to the Programs Manager for review. The Program Manager will share with the Program Director, if appropriate.
5. Following additional revisions and once approved by the Program Director, the IS form will be processed by the Programs Office (SCRG 276).

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 may take courses outside the Institute for Software Research. Generally, these are courses offered by, but not limited to, SCS, Tepper, Robotics, Heinz College, and ECE. Only those approved by the student's advisor will be counted toward the completion of elective requirements. (See above for elective requirement.) When in doubt, students should confer with their advisor.
- All grades must comply with Carnegie Mellon University's grading policy. Refer to <http://www.cmu.edu/policies/documents/Grades.html> for further clarification.

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/MSIT 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.

ON PARTICIPATING IN CAMPUS COMMENCEMENT

Graduates of the 12-month MSIT program and the 16-month MSE and MSIT-ESE programs participate in the commencement ceremony in May of the year **following** the completion of their degree requirements.

SCHEDULES

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/MSIT courses) can be found on The Hub website:

<https://enr-apps.as.cmu.edu/open/SOC/SOCServlet>

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:
<http://www.cmu.edu/hub/courses/exams.html>
- 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.

ENROLLMENT

REGISTRATION PROCEDURES

- Course registrations are completed by the student online at: <http://www.cmu.edu/hub/sio>
 - *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/MSIT program (and the university) reserves the right to withdraw any announced course if the enrollment is too low. The MSE/MSIT program also reserves 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.

DROP/ADD PROCEDURES

For policies and procedures regarding the implications of adding and dropping courses, please refer to: <http://www.cmu.edu/policies/> (**carefully review the “Drop/Withdrawal Grades” subsection**)

Please consult the Official Academic Calendar for official add/drop dates: <http://www.cmu.edu/hub/calendar.html>

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. Remaining open seats 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

<http://www.cmu.edu/policies/documents/Grades.html>

- MSE and MSIT students must maintain a “B or better” overall average. “B” is equivalent to a 3.0 QPA.
- “R” = Failure. 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 same. The program adheres to this and all CMU policies.
- If a grade lower than “B-” (B minus) is received in any core, bridge or project course, those courses must be repeated, regardless of QPA.
- All required Communication courses must be successfully completed with a ‘pass’ grade.

GRADE REPORTS

Grades can be located at the student’s Student Information Online (SIO) site: <http://www.cmu.edu/hub/sio>

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 (PCHE) and Cross-registration below) and through the receipt of transfer credit from other accredited institutions. The Carnegie Mellon University transcript will include information on such courses as follows: Carnegie Mellon courses and courses taken through the university's cross-registration program will have grades recorded on the transcript and be factored into the QPA. All other courses will be recorded on this transcript indicating where the course was taken, but without grade. Such courses will not be taken into account 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/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 program director 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".

STUDENT REVIEW

The MSE/MSIT faculty conducts academic progress 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/MSIT program, the student will be appropriately notified, presented with a suggested plan for improvement, and notified of the risks associated with failure to improve.

PROCEDURE FOR WRITTEN NOTIFICATION OF "INADEQUATE 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 course(s) of study. Recommendations for a plan of action will be offered and expectations set for the student to demonstrate improvement.

ACADEMIC PROBATION

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

CHANGE OF GRADES 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. For university policy on grade appeals, see:

<http://www.cmu.edu/hub/registration/graduates/grading.html>

<http://www.cmu.edu/policies/documents/Grades.html>

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

PROGRAM POLICY ON PASS/FAIL COURSES

With the exception of the required Communication I and II courses, 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.

PROGRAM POLICY/PROCESS FOR 'W' FROM A COURSE

The School of Computer Science does not grant 'W', or 'withdrawal' grades. Therefore, any student wishing to withdraw from a course so as not to negatively affect his or her QPA must do so in advance of the posted Course Drop deadline. This date is listed on the university academic calendar: <http://www.cmu.edu/hub/calendar.html>

PROGRAM POLICY ON GRADES 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 Program Director 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. However, 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.

QUALIFYING EXAMINATIONS AND PROCEDURES (OR EQUIVALENT)

None required

THESIS/DISSERTATION

None required

MSE STUDIO AND OTHER PRESENTATIONS

- Various group presentations throughout the program duration.
- Mid-semester presentation (MOSP, mid spring and summer semesters)
- End-of-semester presentation (EOSP required at the end fall/spring semesters).
- Final presentation at the conclusion of the summer semester; generally the first week of August.
- Studio IV Reflective poster session, generally scheduled in mid- November.
- As required by individual courses.

MSIT-SE/ESE PROJECT AND OTHER PRESENTATIONS

- Various group presentations throughout the program duration.
- Mid-semester presentation (MPP scheduled end-spring semester)
- End-of-semester presentation (FPP end- summer semester).
- Final presentation at the conclusion of the last semester; generally scheduled for the first week of August.
- As required by individual courses

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

MBAMSE:

Students will receive two diplomas which read, respectively:

Master of Software Engineering
Master of Business Administration

MSIT-SE:

Master of Science
Information Technology (Software Engineering)

MSIT-ESE:

Master of Science
Information Technology – Embedded Software Engineering

PROCESS FOR TAKING & RETURNING FROM 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
 - <http://www.cmu.edu/hub/registration/leave.html>

GRADUATION AND DEGREE COMPLETION SPECIFICATIONS AND SUMMARY REQUIREMENTS

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. Additionally, MSE, MSE/MBA, and MSIT-SE programs require the successful completion of the two-part “Communication for Software Engineers” series.

RESIDENCE REQUIREMENTS

None required

DEPARTMENT EXPECTATIONS REGARDING PLAGIARISM AND CHEATING

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 policy here: <http://www.cmu.edu/academic-integrity/documents/academic-disciplinary-actions-overview-for-graduate-students.2013.pdf>

PROGRAM ACADEMIC INTEGRITY POLICY / PROCEDURES

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.
- If the incident is the second cheating offense, the student will be dismissed from the program.
- Students found guilty of cheating 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 can be found at:

<http://www.cmu.edu/academic-integrity/documents/academic-disciplinary-actions-overview-for-graduate-students.2013.pdf>

FORM OF REVIEW/REDRESS FOR ACADEMIC CONFLICTS

Students should discuss any issue associated with academic matters with the Program Director. The MSE/MSIT Executive Committee will address unresolved conflicts. If not resolved, the student may appeal to the College Council.

Graduate students will find the Summary of Graduate Student Appeal and Grievance Procedures on the Graduate Education Resource webpage. This document summarizes processes available to graduate students who seek review of academic and non-academic issues. Generally, graduate students are expected to seek informal resolution of all concerns within the applicable department, unit or program before invoking formal processes. When an informal resolution cannot be reached, however, a graduate student who seeks further review of the matter is to follow the formal procedures outlined here. These appeal and grievance procedures shall apply to students in all graduate programs of the University. Students should refer to the department specific information in this handbook for department and college information about the administration and academic policies of the program. Additionally, students may confer with the graduate student ombudsman, Suzie Laurich-McIntyre, slaurichmcintyre@cmu.edu, on issues of process or other concerns as they navigate conflicts

<http://www.cmu.edu/graduate/policies/Summary%20of%20Graduate%20Student%20Appeal%20and%20Grievance%20Procedures.html>.

The professional graduate software engineering programs adhere at Carnegie Mellon's policy regarding student rights: <http://www.cmu.edu/policies/documents/StRights.html>

ADDITIONAL DEPARTMENT POLICIES/PROTOCOLS

ADVISING

ROLE OF THE ADVISOR

An academic advisor will be assigned to each student at the start of the program. 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 Executive Committee, if needed;
- meet at the conclusion of each semester to discuss student progress and to provide progress documentation to the student.

Mentors of the Software Development Studio may choose to act as advisors on an informal basis.

ROLE OF THE STUDENT

Initial advising is done at the MSE/MSIT Orientation. **Students are responsible for making subsequent appointments with their program-assigned advisors.** Periodic check-ins with advisors 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.

HOW TO CHANGE ADVISORS

If a student experiences difficulty working with his/her assigned advisor, the relationship and associated circumstances should be discussed first with the assigned advisor. In the event that no resolution is forthcoming, the student should discuss the situation(s) with the MSE/MSIT Program Director and offer suggestions for an alternate advisor. The Director will act as arbiter regarding advising change requests.

ORIENTATION

The MSE/MSIT program offers 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.

PROFESSIONAL DEVELOPMENT

In order to support the student's personal and professional goals, the MSE/MSIT program has worked with the Software Engineering Institute (SEI) to secure a reduced rate for students enrolling in SEI courses.

TYPES OF PROFESSIONAL DEVELOPMENT

- Software Engineering Institute (SEI) professional short course
- Software Engineering conference/workshop attendance.

SECURING PROFESSIONAL DEVELOPMENT FUNDING

- Gather all pertinent information and discuss it with your advisor.
- Students must justify attendance at a course by explaining how it relates to his/her career goals and professional growth.
- For an SEI short course, a student should download an application from the SEI website and complete all but the “how to pay” and “cost” portions of the forms. Give the completed application to the Programs Administrator who will process the request.

NOTE: MSE/MSIT program participants receive a discounted price for SEI courses. Individuals paying full course fees, however, are given priority for registration. If the course(s) chosen is fully subscribed, the student may be dropped from the course(s) regardless of advance registration and will be notified by the SEI of his/her status in the course. The SEI does not guarantee a student’s acceptance and/or attendance in any SEI course.

INFORMATION ON PROFESSIONAL DEVELOPMENT

Information on software engineering-related conferences and workshops is readily available. Students are encouraged to subscribe to SEWorld at the following web address for regular mailings on event schedules: <http://www.sigsoft.org/seworld/>

ON INTELLECTUAL PROPERTY AS IT APPLIES TO STUDENT/INSTRUCTOR COLLABORATION

The professional graduate software engineering programs adhere to Carnegie Mellon’s policy: <http://www.cmu.edu/policies/documents/IntellProp.html>

“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 at: <http://www.cmu.edu/hub/tuition/graduate/scs.html>

Should a student choose to travel to a conference for professional development, the Graduate Student Assembly (GSA) and the Provost’s Office offer funding opportunities. For more information on this funding and the application process, see: <http://www.cmu.edu/graduate/professionaldevelopment/Conference%20Funding/index.html>.

UNIVERSITY FINANCIAL AID

For information pertaining to graduate student financial aid information, visit the HUB website at: <http://www.cmu.edu/finaid/graduate/index.html>. Information is available about 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, www.cmu.edu/student-affairs/index.html, to inquire about an Emergency Student Loan.

TUITION PAYMENTS

For clarity on your invoice, payment options, etc., visit: <http://www.cmu.edu/hub/billing/index.html>

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/MSIT program adheres to the university policy pertaining to tuition refunds. See: <http://www.cmu.edu/hub/billing/refunds.html>

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. See: <http://www.cmu.edu/hub/billing/sponsor/index.html>

CARNEGIE MELLON EMPLOYEES REIMBURSEMENT PROCEDURE

Contact the Benefits Office (8-2049) for specific information on tuition benefits. You must complete a Tuition Remission form each semester in order to receive these benefits. To receive a Tuition Remission form, visit the Human Resources website at: <http://www.cmu.edu/hr>

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/MSIT 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/MSIT program do not grant tuition waivers.

EXTERNAL FELLOWSHIPS

- The MSE/MSIT program accepts students with external fellowships.
- For information on external fellowships: <http://www.cmu.edu/finaid/graduate/options.html>
- The MSE/MSIT program seeks 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/MSIT program offers 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.

AVAILABILITY OF SUMMER EMPLOYMENT

The MSE/MSIT Programs do not provide summer employment opportunities. Further, as 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
Project	84	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)
Prerequisites	-	17-602

**ALL COURSES ABOVE, UNLESS OTHERWISE NOTED, ARE 12 UNITS EACH*

SAMPLE COURSE OF STUDY

SUMMER PRE-REQUISITE

- [17-602 Introduction to Personal Software Process](#)

SEMESTER 1

- [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

- [17-654 Analysis of Software Artifacts](#)
- [17-655 Architectures for Software Systems](#)
- [17-657 Communication for Software Engineers II](#)
- [17-671 Software Development Studio I](#)
- Elective course

SEMESTER 3

- [17-672 Software Development Studio II](#)
- Elective course

SEMESTER 4

- [17-673 Software Development Studio III](#)
- Elective course

APPENDIX B: MSIT-SE PLAN OF STUDY

The Master of Science in Information Technology - Software Engineering is a 12-month professional degree program designed 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
Project	36	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)
Prerequisites	-	17-602

**ALL COURSES ABOVE, UNLESS OTHERWISE NOTED, ARE 12 UNITS EACH*

SAMPLE COURSE OF STUDY

SUMMER PRE-REQUISITE

- [17-602 Introduction to Personal Software Process](#)

SEMESTER 1

- [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

- [17-654 Analysis of Software Artifacts](#)
- [17-655 Architectures for Software Systems](#)
- [17-657 Communication for Software Engineers II](#)
- [17-677 MSIT Project I](#)
- Elective course

SEMESTER 3

- [17-678 MSIT Project II](#)
- Elective course
- Elective course

APPENDIX C: MSIT-ESE PLAN OF STUDY

The MSIT-ESE is a 16-month program comprised of core, elective, and project courses in the areas of Electrical/Computer Engineering, Computer Science/Software Engineering, and Systems Engineering. The program begins in the fall semester, and concludes the following year in December. Project work is conducted through the spring and summer semesters.

	Units Required	Courses
Core	60	17-653 , 18-649 , 18-648 , 17-654 , 17-655
Project	36	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. A 12-unit Independent Study is required 17-699
Prerequisites	12	15-513 (6 or 12 unit version. If 6 units version is taken, an additional 6 unit course is required to fulfill prerequisite requirement)

*ALL COURSES ABOVE, UNLESS OTHERWISE NOTED, ARE 12 UNITS EACH

SAMPLE COURSE OF STUDY

SUMMER PREREQUISITE

- [15-513 Introduction to Computer Systems](#)

SEMESTER 1

- [17-653 Managing Software Development](#)
- 1 out of the following:
 - [18-649 Distributed Embedded Systems](#)
 - [18-648 Embedded Real-Time Systems](#)
- Elective (schedule time option)

SEMESTER 2

- [17-654 Analysis of Software Artifacts](#)
- [17-655 Architectures for Software Systems](#)
- [17-677 MSIT Project I](#)
- Elective (schedule time option)

SEMESTER 3

- [17-699 Independent Study](#)
- [17-678 MSIT Project II](#)

SEMESTER 4

- 1 out of the following:
 - [18-648 Embedded Real-Time Systems](#)
 - [18-649 Distributed Embedded Systems](#)
- Elective (schedule time option)
- Elective (schedule time option)

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
Project	84	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)
Prerequisites	-	17-602

**ALL COURSES ABOVE, UNLESS OTHERWISE NOTED, ARE 12 UNITS EACH*

SAMPLE COURSE OF STUDY

SUMMER PRE-REQUISITE

- [17-602 Introduction to Personal Software Process](#)

SEMESTER 4

- [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 5

- [17-654 Analysis of Software Artifacts](#)
- [17-655 Architectures for Software Systems](#)
- [17-657 Communication for Software Engineers II](#)
- [17-671 Software Development Studio I](#)
- Elective course

SEMESTER 6

- [17-672 Software Development Studio II](#)
- Elective course

SEMESTER 7

- [17-673 Software Development Studio III](#)
- Elective course