



GRADUATE STUDENT HANDBOOK

2023 – 2024

version 2.0

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Systems Engineering (SE)

University of Virginia (UVA)

Virginia Engineering Online (VEO)

1. INTRODUCTION

1.1. Department of Systems and Information Engineering

The Engineering School's Department of Systems and Information Engineering (SIE) at the University of Virginia (UVA) was founded in 1976.

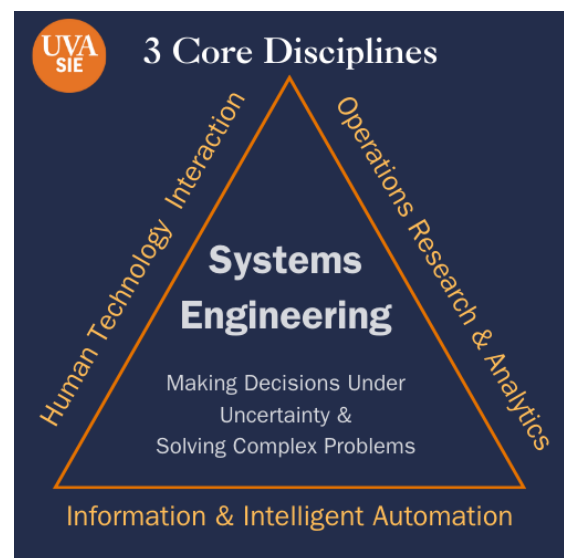
SIE is now home to more than 30 full-time and joint-appointed faculty members with active teaching and research programs. We offer an accredited undergraduate degree: the Bachelor of Science (B.S.) in Systems Engineering (SE). We also offer two master's degrees: the Master of Science (M.S.; with thesis) and Master of Engineering (M.E.; non-thesis). Finally, we also offer the Doctor of Philosophy (Ph.D.) degree in Systems Engineering.

SIE graduate students play a critical role in our department's research, teaching and service mission, partnering with faculty and staff to deliver excellence in education and discovery. We believe that a better future is possible for all by training the leaders of tomorrow in a collaborative academic environment that encourages excellence in the classroom and laboratory.

1.2. Vision Statement

Systems engineering is the scientific discipline focused on designing, analyzing, and improving complex human/technology/software systems that range from delivering information to multi-person sociotechnology systems to positively impact human well-being and society at large. We adopt systems thinking to make sense of the complexity of the world to tackle societal challenges.

Specifically, the Systems and Information Engineering Department here at the University of Virginia aims to advance the methods, frameworks, science, and/or technology in three domains:



1. **Human Technology Interaction** - this involves the application of scientific principles, methods, and data drawn from a variety of disciplines to the design and development of engineering systems to facilitate the interaction between humans (the users) and technology.
2. **Information and Intelligent Automation** - this focuses on smart, intelligent, and automated technology and method development that explores innovative ways these intelligent systems can improve society.
3. **Operations Research and Analytics** - this focuses on the development and application of analytical methods to improve decision-making by employing techniques such as modeling, statistics, and optimization to arrive at optimal or near-optimal solutions to decision-making problems.

1.3. Diversity and Community

SIE is committed to sustaining a vibrant and inclusive environment that fully reflects the core Engineering School's value of diversity, which is defined as "excellence expressing itself through the intersection of every individual's perspective and lived experiences." Faculty, staff, and students will strive for excellence in all we do, treat everyone with respect, and show gratitude and provide outstanding stewardship for the resources that support our mission, which come from tuition, the commonwealth, research sponsors, and our friends and alumni.

2. MASTER OF ENGINEERING PROGRAM

Any student enrolled in the Master of Engineering (M.E.) program prior to the fall 2019 semester has the option of adhering to either (a) the curriculum presented below or (b) the curriculum that was effective when the student first enrolled in the M.E. program.

2.1. Overview

The M.E. is a coursework-based graduate professional degree for those wishing to pursue careers in industry, consulting, or government. Our program is designed to provide a blend of fundamental knowledge and professional skills needed by practicing engineers.

It is an intensive, non-thesis program that may be completed on-Grounds as a full-time student; in our weekend Accelerated Master's Program (AMP); online as a student in the Virginia Engineering Online (VEO) program; or in a hybrid combination of VEO and time on-Grounds.

2.2. Admissions Criteria and Scholarships

The deadlines for M.E. on-Grounds and VEO applications for U.S. citizens and permanent residents are August 1st for the fall semester and January 5th for spring semester. The deadlines for M.E. on-Grounds and VEO applications for non-U.S. citizens are April 1st for fall semester and September 29th for spring semester. The deadline for the Accelerated Master's Program (AMP) M.E. for Summer 2024 is May 20th. We seek motivated students from [diverse backgrounds](#) who are eager to partner with us in education and discovery. Information about academic eligibility and the admissions process is available on the [UVA Engineering School's Graduate Admissions](#) webpage. All applications are submitted online. The application fee for UVA Engineering graduate programs is \$85; however, we are thrilled to share that a fee waiver for the \$85 application fee will be automatically applied to your application if you are applying for 2024 admission.

Through the generosity of our friends and alumni, our department is pleased to award scholarships to select exceptionally qualified M.E. candidates. Recipients receive \$5,000 per academic year. All candidates are evaluated by the graduate program directors on academic performance, and at their discretion, the recipients are selected. The selected recipients are notified with a letter from the department.

Accepted M.E. students in the on-Grounds program are also eligible to serve as graders for SIE undergraduate and graduate courses. Students interested in serving as a grader should contact the SIE Graduate Program Director and M.E. Program Director directly. The hourly rate for M.E. student graders is \$21/hour for up to twenty hours per week.

2.3. Engineering School Requirements

Engineering School requirements for M.E. degrees are described on the [UVA Graduate School of Engineering's](#) information webpage. This page also addresses admission requirements, rules and regulations pertaining to financial assistance and outside employment, and other matters. The portion of the Engineering School's website devoted to [current graduate students](#) contains many

helpful resources, including required forms.

Time limit: All requirements for the M.E. degree must be completed within seven years after matriculation to the graduate program.

2.4. Program Requirements: SE M.E. on-Grounds/VEO

A candidate for the M.E. degree must fulfill the general requirements of the Engineering School and complete an approved plan of study consisting of at least thirty credit hours. The plan of study must be prepared under the guidance of the faculty advisor by the end of the first semester of study. It then must be approved by the graduate program directors.

The approved plan of study may be revised if necessary but must be submitted for approval.

Coursework

The M.E. degree in SE program is built of two components:

- **Core courses**, supplying the fundamentals of systems engineering.
- **Elective courses**, focusing on techniques of analysis and application of fundamentals to a problem area.

The plan of study must include at least thirty credit hours of graduate-level work and satisfy the following requirements. In addition, the plan of study should be approved by the student's graduate advisor and SIE graduate program director.

- Nine credit hours of core courses: SYS 6001, plus six credit hours from SYS 6003, SYS 6005, SYS 6007 and SYS 6021.
- At least twenty-one credit hours of elective courses distributed thusly:
 - At least twelve credit hours of graduate-level systems engineering courses. (These credit hours cannot be earned through Independent Study SYS 6993 and SYS 7993; Supervised Project Research SYS 6995 and SYS 8995; Graduate Teaching Instruction SYS 8997 and SYS 9997; Thesis SYS 8999; and Dissertation SYS 9999.)
 - No more than three credit hours of Independent Study SYS 6993 or SYS 7993.
 - No more than three credit hours of Supervised Project Research SYS 8995.
 - No more than three credit hours at the 5000-level from the School of Engineering and Applied Science. (The 5000-level courses in the Graduate School of Arts and Sciences are nominally equivalent to 6000-level courses in the School of Engineering and Applied Science.)

Table 2-1 shows a plan of study for completing an M.E. degree in two semesters.

Table 2-1: A sample plan of study for the M.E. program:		
Course Number		Credits
Fall Semester		
SYS 6001	Introduction to Systems Engineering	3
SYS 6003/05/07/21	Mathematical Programming/Stochastic Systems/Human Factors/Statistical Modeling	3
SYS 6005/03/07/21	Stochastic Systems/Mathematical Programming/Human Factors/Statistical Modeling	3
SYS XXXX	Elective	3
YYY XXXX	Elective	3
	<i>SUBTOTAL</i>	15
Spring Semester		
SYS XXXX	Elective	3
SYS XXXX	Elective	3
SYS XXXX	Elective	3
YYY XXX2	Elective	3
YYY XXX3	Elective	3
	<i>SUBTOTAL</i>	15

Special Circumstances

Prerequisites: The student who does not have the prerequisites (e.g., calculus, linear algebra, probability and statistics, computer programming) should take articulation courses. The SE M.E. program advisor will work with the student to identify the required articulation courses. These courses cannot be used to satisfy the degree requirements.

Equivalent Courses: The student who, prior to enrolling in the SE M.E. program, has already taken a course equivalent to a core course may petition the M.E. program advisor for the substitution of the core course by an elective course.

2.5. Program Requirements: Accelerated Master’s Program

The Accelerated Master’s Program (AMP) in SE is a one-year program held in Northern Virginia designed to enable working professionals to become systems thinkers and problem solvers through a unique blend of formal education integrated with personal work experience. AMP students attain a solid foundation in systems methodology and apply proven analytical tools and new technologies to “messy” problems in the face of uncertainty, risk, and environmental turbulence. Through their

coursework and collaboration with classmates from diverse industries, participants find that they look at problems with new eyes and finish the program well-equipped to support effective decision-making involving any large-scale complex system.

Coursework

The Accelerated Master's Program (AMP) in SE is built from three academic components:

- **Core courses**, supplying the fundamentals of systems engineering.
- **Program elective courses**, focusing on important analytical techniques and business skills, which complement the skills presented in the core courses.
- **General elective courses**, utilizes VEO catalog of online electives and enables students to pursue interests beyond core courses and program electives. All general electives are subject to approval from the AMP Director.

The plan of study must include at least thirty credit hours of graduate-level work and satisfy the following requirements:

- Twelve credit hours of core courses: SYS 6001, SYS 6002, SYS 6043, SYS 6045.
- Twelve credit hours of program elective courses consisting of: SYS 6064, SYS 6582, SYS 6021, SYS 6014, SYS 6018.
- Six credit hours of general VEO electives subject to approval by AMP Program Director.

Special Circumstances

Prerequisites: The student who does not have the prerequisites (e.g., two semesters of calculus, one semester of linear algebra and one semester of computer programming) should take articulation courses. The AMP program director will work with the student to identify the required articulation courses. These courses cannot be used to satisfy the degree requirements.

2.6. Transfer Credit

Up to twelve credit hours of graduate courses may be transferred. Only courses with a grade of B or better that have not been applied toward another degree may be transferred. The request for credit transfer must include the following documents: a completed [Request Approval of Transfer Credits](#) form, a description of course content and level, and an official transcript. The documents are provided to the SIE Student Services Coordinator to facilitate processing of the request. If the student is already admitted into a UVA program, then the request for credit transfer must be preapproved before the course is taken. All transfer credits are subject to the approval of the student's advisor and the Engineering School dean's office.

VEO students may transfer up to fifteen credits from other schools participating in the VEO program toward their UVA M.E. degree. The other VEO institutions are George Mason University, Old Dominion University, Virginia Commonwealth University and Virginia Polytechnic Institute and State University (Virginia Tech). Students in the on-Grounds M.E. program may register for up to twelve credit hours of courses offered through VEO.

2.7. Advising and Professional Development

Upon admission to the program, the student is assigned to their program's M.E. faculty advisor. The student should meet with the M.E. program advisor to plan their course selection and career objectives before the start of each semester.

Seminars: Students in the on-Grounds program are expected to attend and participate actively in scheduled SIE and UVA seminars.

2.8. Academic Progress

Good academic standing is defined as a minimum cumulative grade point average of 3.0. A cumulative grade point average of less than 3.0 may be considered a sufficient reason for withdrawal of financial assistance or for enforced withdrawal from the graduate program. Graduate students may incur academic probation any fall or spring semester in which they fail to maintain a minimum cumulative grade point average of 3.0. Students on academic probation have one semester to increase their cumulative grade point average to 3.0 or above, or they will be placed on academic suspension. VEO students have two semesters to increase their cumulative grade point average.

Students who do not raise their GPA to 3.0 during their academic probation will incur academic suspension. Academic suspensions may be appealed within 30 days of notification to the UVA Engineering Graduate Studies Committee. Without an approved academic suspension appeal from the UVA Engineering Graduate Studies Committee, students are permanently academically suspended from the School of Engineering and are not eligible for readmission. Approved academic suspension appeals from the UVA Engineering Graduate Studies Committee provide the student a prescribed number of semester(s) of academic probation to increase their cumulative grade point average to 3.0.

2.9. Administrative Forms

It is important that graduate students submit administrative forms related to degree requirements in a timely manner to the SIE Student Services Coordinator. These forms can be found on the Engineering School's [webpage](#) for current engineering graduate students.

3. MASTER OF SCIENCE PROGRAM

3.1. Overview

Master of Science (M.S.) is a graduate degree for those who desire not only to acquire fundamental knowledge but also to contribute to the advancement of knowledge through independent, original research. This program provides a springboard for careers as an academician, as a researcher, as a consultant or in management/leadership within a university, institute, industry, or government setting.

The SIE M.S. program includes three components:

- **Coursework** to gain fundamental and advanced knowledge.
- **Research** conducted in a collaborative environment leading to a thesis and scholarly papers.
- **Engagement** in UVA's intellectual life.

3.2. Admissions Criteria

The deadlines for M.S. applications with financial aid requests are January 5th for fall semester and September 29th for spring semester. All SIE faculty are eligible to advise students enrolled in the SE M.S. program. We accept applications from candidates with degrees from all engineering and some affiliated backgrounds. In some cases, candidates who do not have engineering or similar credentials will be offered conditional admission, which will require them to take selected undergraduate coursework in addition to the coursework required for their M.S.

Most accepted M.S. students receive financial aid. Funding offers take the form of graduate research assistantships (GRAs), graduate teaching assistantships (GTAs) and/or various fellowships. The department's default stipend for master's students is \$26,250 per year. Funded offers also include tuition and health insurance. Some M.S. students are funded by third-party entities (e.g., their employer or government or military agencies), and a small number of students are self-funded.

3.3. Engineering School Requirements

Engineering School requirements for M.S. degrees are described on the [UVA Graduate School of Engineering's information webpage](#). This page also addresses admission requirements, rules and regulations pertaining to financial assistance and outside employment, and other matters. The portion of the Engineering School's website devoted to [current graduate students](#) contains many helpful resources, including required forms.

Time limit: All requirements for the M.S. degree must be completed within five years after matriculation to the graduate program.

3.4. Program Requirements

A candidate for the M.S. in SE must fulfill the general requirements of the Engineering School along with the following specific requirements.

Coursework

The M.S. in SIE requires thirty credits of coursework and research beyond the B.S. program. The following requirements should be met:

- Nine credit hours of core courses: SYS 6001, plus six credit hours from SYS 6003, SYS 6005, SYS 6007, and SYS 6021.
- At least fifteen credit hours of elective courses distributed thusly:
 - At least three credit hours of systems engineering courses at the 6000 or 7000 level. (These credit hours cannot be earned through Independent Study SYS 6993 and SYS 7993; Supervised Project Research SYS 6995 and SYS 8995; Graduate Teaching Instruction SYS 8997 and SYS 9997; Thesis SYS 8999; and Dissertation SYS 9999.)
 - No more than three credit hours of Independent Study SYS 6993 or SYS 7993.
 - No more than three credit hours of Supervised Project Research SYS 8995.
 - Two courses of Systems Engineering Colloquium (SYS 7096). The student should register for one course in each semester of the first year of study.
- At least six credit hours of Thesis SYS 8999 (of which six count toward the thirty credit requirement).

Special Circumstances

Prerequisites: The student who does not have the prerequisites (i.e., calculus, linear algebra, probability and statistics, computer programming) should take articulation courses. These courses cannot be used to satisfy the degree requirements.

Equivalent Courses: The student who, prior to enrolling in our graduate program, has already taken a course equivalent to a core course may petition the graduate programs director for the substitution of the core course by an elective course.

Transfer Credit: Up to six credit hours of graduate courses may be transferred. Only courses with a grade of B or better that have not been applied toward another degree may be transferred. The request for credit transfer must include the following documents: a completed [Request Approval of Transfer Credits](#) form, a description of course content and level, and an official transcript. The documents are provided to the SIE Student Services Coordinator to facilitate processing of the request. If the student is already admitted into a UVA program, then the request for credit transfer must be preapproved before the course is taken.

Scholarship

A student must be the author or coauthor of at least one technical manuscript under review or accepted into a conference or journal before scheduling their final thesis defense.

Thesis and Committee

M.S. students will work with their advisor to identify a suitable master's research topic. Up to six of the thirty credits toward the M.S. will typically comprise thesis research via the SYS 8999 listing. The M.S. candidates and their advisor will also select an M.S. thesis committee comprising at least three UVA faculty members. One of these three members may be from outside SIE. At least two of the three members must be faculty members with non-zero percentage appointments in SIE. The thesis committee must review and approve the student's academic requirements report, written thesis, and oral thesis defense. M.S. students should check the accuracy and completeness of their academic requirement report in the Student Information System (SIS) frequently, at least at the start and end of each semester and in consultation with their faculty advisor. The [Appointment of Final Examination Committee](#) form to appoint the M.S. thesis committee must be submitted at least fourteen days before the proposed final defense date to the SIE Student Services Coordinator, as they will obtain graduate program director approval and submit the request form to the graduate office. Degree candidates must apply for graduation in SIS at the beginning of the semester in which they're expected to graduate.

It is the candidate's responsibility to email the SIE Student Services Coordinator their announcement information which consists of the committee members list with the chair and advisor identified, the meeting date, time, and location information, and the thesis defense title and abstract at least two weeks before the final defense. The SIE Student Services Coordinator will provide the chairperson with the relevant forms ([Report on Final Examination](#) and [Thesis and Dissertation Assessment](#)) for the final defense. In addition, after successful completion of their final defense, the candidate must submit the dissertation via Libra (see [Graduation Procedure](#)).

Seminar Series

SIE is committed to providing members of our community with the opportunity to learn from a wide range of scholars and practicing engineers through seminars. These seminars are organized as (a) our weekly Graduate Colloquium and (b) Distinguished Speakers invited by our faculty on an ad-hoc basis. As an essential component of graduate education, M.S. students should register for at least two semesters (preferably in their first year) of SYS 7096 with zero credit hours. Students are expected to attend and participate actively in scheduled SIE and UVA seminars and student thesis/dissertation defenses. Unless there are extenuating circumstances, it is expected that seminars and defenses are held in person at the university.

Training and Engagement

M.S. students are expected to be good citizens of the department by engaging in required training activities and participating in departmental activities (e.g., symposiums, workshops, social events).

3.5. Academic Progress

Good academic standing is defined as a minimum cumulative grade point average of 3.0 and Satisfactory grade(s) in research and in teaching, when applicable. Unsatisfactory work during any semester or a cumulative grade point average of less than 3.0 may be considered a sufficient reason

for withdrawal of financial assistance or for enforced withdrawal from the graduate program. Non-degree and visiting graduate students are also expected to maintain a minimum cumulative grade point average of 3.0 to remain in good academic standing.

Graduate students may incur academic probation any fall or spring semester in which they fail to maintain a minimum cumulative grade point average of 3.0. Students on academic probation have one semester to increase their cumulative grade point average to 3.0 or above, or they will be placed on academic suspension.

Students who do not raise their GPA to 3.0 during their academic probation will incur academic suspension. Academic suspensions may be appealed within 30 days of notification to the UVA Engineering Graduate Studies Committee. Without an approved academic suspension appeal from the UVA Engineering Graduate Studies Committee, students are permanently academically suspended from the School of Engineering and are not eligible for readmission. Approved academic suspension appeals from the UVA Engineering Graduate Studies Committee provide the student a prescribed number of semester(s) of academic probation to increase their cumulative grade point average to 3.0.

3.6. Administrative Forms

It is important that graduate students submit administrative forms related to degree requirements in a timely manner to the SIE Student Services Coordinator. These forms can be found on the Engineering School's [webpage](#) for current engineering graduate students.

4. DOCTOR OF PHILOSOPHY

4.1. Overview

The Doctor of Philosophy (Ph.D.) is an advanced graduate degree for students wishing to contribute to knowledge creation through independent, original, cutting-edge research. The Ph.D. degree provides a springboard for careers as an academician, as a researcher, as a consultant or in management/leadership within a university, institute, industry, or government setting.

The SIE Ph.D. program includes three components:

- ***Coursework and Teaching*** to gain fundamental and advanced knowledge, as both student and GTA.
- ***Research*** conducted in a collaborative environment leading to a doctoral dissertation and scholarly papers.
- ***Engagement*** in UVA's intellectual life.

4.2. Admissions Criteria

The deadlines for Ph.D. applications with financial aid requests are January 5th for fall semester and September 29th for spring semester. All SIE faculty are eligible to advise students enrolled in the SE Ph.D. program. We accept applications from candidates with degrees from all engineering and some affiliated backgrounds. In some cases, candidates who do not have engineering or similar credentials will be offered conditional admission, which will require them to take selected undergraduate coursework in addition to the coursework required for their Ph.D.

All candidates are evaluated by one or more of the SIE research subgroups. Some students are admitted directly into a specific research group with a specific advisor. Other candidates are admitted into a subgroup and are then connected with an advisor during the first year.

Most accepted Ph.D. students receive financial aid. Funding offers take the form of GRAs, GTAs and/or various fellowships. SIE is committed to acquiring the resources to fund Ph.D. students for five years, contingent upon satisfactory progress toward the degree. The department's default stipend for Ph.D. students is \$35,000 per year.

Funded offers also include tuition and health insurance. Some Ph.D. students are funded by third-party entities (e.g., their employer or government or military agencies), and a small number of students are self-funded.

4.3. Engineering School Requirements

Engineering School requirements for the Ph.D. degree are described on the [UVA Graduate School of Engineering's information webpage](#). The page also addresses admission requirements, rules and regulations pertaining to financial assistance and outside employment, and other matters. The portion of the Engineering School's website devoted to [current graduate students](#) contains many helpful resources, including required forms.

Time limit: All requirements for the Ph.D. degree must be completed within seven years after matriculation to the program.

4.4. Program Requirements and Milestones

SIE has three general classes of Ph.D. requirements: coursework, professional development, and academic engagement. These are described below.

Coursework

The SE program requires relevant coursework to help students access foundational knowledge in their discipline while striking a balance between depth and breadth. All Ph.D. students must take at least six credits of graduate coursework at UVA beyond the master's degree. All Ph.D. students, including those entering with an M.E./M.S. from another institution, must complete at least six credits of SIE coursework. Students who earn an M.E. or M.S. degree at UVA en route to a Ph.D. in SE may use SE credits from their master's degree to meet this requirement. A minimum of thirty credits beyond the B.S. program is required for all Engineering School Ph.D. degrees.

The following requirements should be met:

- *Mandatory Courses:* SYS 6001 and two semesters of SYS 7096.
- Nine credit hours of *foundation courses*: three courses selected from SYS 6003, SYS 6005, SYS 6007, and SYS 6021.
- Twelve credit hours of *methodological courses*: Students must take four courses from at least two of the methodological areas listed [here](#). The courses listed in each of the areas are only exemplars as course offerings change from year to year. Other courses in these areas may be used to fulfill methodological requirements as approved by the student's doctoral advisory committee. Additionally, certain courses are listed in multiple areas. In these cases, the student must decide which area the course satisfies for their plan of study. Each course may only satisfy one area for the student's plan of study.
- Nine credit hours of *research elective courses*: These can be any 6000 and 7000 level courses that are chosen in consultation with the advisory committee to support the student's research program.

Special Circumstances

Prerequisites: The student who does not have the prerequisites (i.e., calculus, linear algebra, probability and statistics, computer programming) should take articulation courses. These courses cannot be used to satisfy the degree requirements.

Equivalent Courses: The student who, prior to enrolling in our graduate program, has already taken a course equivalent to a core course may petition the graduate program director for the substitution of the core course by an elective course. Students that received automatic bulk transfer credits that are applied towards SEAS's credit requirements must complete the [SE Coursework Petition Form](#) to receive credit towards their degree program requirements. The form will need to be completed to have graduate courses taken while enrolled in a previous graduate program evaluated towards SIE foundations courses to determine if they can be used to fulfill any of your

course requirements. Other transfer coursework taken in another STEM program will count towards the methodological and/or research electives.

Transfer Credit: Ph.D. students who have earned a master's degree in a STEM field will receive an automatic bulk transfer of twenty-four graduate course credits toward SEAS's total graded coursework credit requirement. Ph.D. students who have earned a master's degree in a non-STEM field will receive an automatic bulk transfer of twelve graduate course credits toward SEAS's total graded coursework credit requirement. Students who receive a bulk transfer of credit may not transfer any additional credits toward the Ph.D. degree. Ph.D. students that didn't earn a master's but took graduate level courses, may transfer a maximum of six graduate course credits into their program of study. Only courses with a grade of B or better that have not been applied toward another degree may be transferred. The request for credit transfer must include the following documents: a completed [Request Approval of Transfer Credits form](#), a description of course content and level, and an official transcript. The documents are provided to the SIE Student Services Coordinator to facilitate processing of the request. If the student is already admitted into a UVA program, then the request for credit transfer must be preapproved before the course is taken.

Professional Development and Academic Engagement

The ultimate goal of a SE Ph.D. is to give students the best possible preparation for their careers in research, government, or industry. The following professional training requirements help students prepare for the full spectrum of career choices:

GTAs: Students typically serve as a GTA at some point over the course of their M.S. or Ph.D. GTAs will enroll for three credits (Satisfactory/Unsatisfactory, or S/U, basis) of SYS 6097 or SYS 9997 in a section corresponding to their supervising instructor. Receipt of one or more U grades for graduate instruction may endanger a student's eligibility to serve as a GTA in future semesters. Information about the Engineering School's language-skills requirements for international students serving as GTAs can be found [here](#).

GRAs: Students will serve as a GRA as a component of their Ph.D. GRAs will enroll for three to twelve credits (Satisfactory/Unsatisfactory, or S/U, basis) of SYS 9999 in a section corresponding to their supervising instructor. GRAs conduct academically significant research related to their academic program and their development as future researchers, with a minimum of supervision, under the guidance of a faculty member. Receipt of one or more U grades for graduate research may endanger a student's eligibility to receive graduate funding in future semesters.

Research Dissemination: Students will disseminate their research via journal and conference papers. Before scheduling the final defense, students must have at least one first- authored paper with their research advisor published or accepted by a journal or peer-reviewed conference paper approved by their advisory committee.

To aid in supporting student travel to conferences, all SIE Ph.D. students can apply to receive a travel grant if their research advisor or fellowship is unable to fund their travel,

conference registration, and lodging. To receive a travel grant, the student must be the primary author presenting a peer-reviewed publication. Additionally, their advisor must write a statement that there are no research funds to support travel. See the Doctoral Student Travel Grant section below for more information.

Seminars and Defenses: SIE is committed to providing members of our community with the opportunity to learn from a wide range of scholars and practicing engineers through seminars. These seminars are organized as (a) our weekly Graduate Colloquium and (b) Distinguished Speakers invited by our faculty on an ad-hoc basis. As an essential component of graduate education, Ph.D. students should register for at least two semesters (preferably in their first year) of SYS 7096 with zero credit hours. Students are expected to attend and participate actively in scheduled SIE and UVA seminars and student thesis/dissertation defenses. Unless there are extenuating circumstances, it is expected that seminars and defenses are held in person at the university.

Academic Engagement: Doctoral students are valued members of SIE's community of scholars. They are expected to be good citizens by engaging in departmental and school-wide events (e.g., milestone defenses, symposiums, workshops, social events). Section 5 provides more information about the role of the SIE Graduate Student Council (GSC) and opportunities for students to be involved in departmental leadership.

Doctoral Student Travel Grant

Each SIE Ph.D. student is eligible to apply for a one-time travel grant of up to \$1,500 to present their research at a peer-reviewed conference once during their tenure at UVA. To receive a travel grant, the student must be the primary author presenting a peer-reviewed publication. Additionally, their advisor must write a statement that there are no research funds to support travel. The one-time grant can be requested by using the [SIE Ph.D. Student Travel Fellowship Request Form](#). The request should be submitted at least six weeks prior to the conference date.

Milestones

The three main milestones toward completion of an SE Ph.D. are the qualifying exam, the dissertation proposal, and the dissertation defense. Sections 4.3 and 4.4 provide additional information on the goals, format, timing, and administration of these milestones, including policies governing committee composition.

Table 4-2 depicts a typical timeline for completion of the Ph.D. in SIE. This timeline assumes that students enter the Ph.D. after first completing a master's degree. However, SIE also routinely accepts students directly into the Ph.D. program without first requiring them to complete an M.S. For these students, it may be valuable to extend the initial timeline by one year, in which case students can delay the qualifying exam until the end of their second year. The rest of the timeline then proceeds as shown in Table 4-2.

Engineering School policy allows a leave of absence (an action students can take after the completion of a semester, indicating that the student plans to be away from the university for at

least one semester) for parental leave or serious personal or family illness. This requires notification to and approval from the appropriate department or program and the Office of Graduate Programs. When considering these options, students are urged to talk with their advisor, their program's graduate director, and the Engineering School's graduate registrar. These individuals are committed to helping students find and navigate their best possible paths. Students must first obtain the approval of their advisor and the graduate director of the student's program.

Table 4-2: Typical timeline for doctoral students entering with a master's degree. Students entering without an M.S. may need one extra year before taking the qualifying exam. Different research groups offer qualifying exams at different times of year.

Year 1	Establish a working relationship with the faculty advisor(s) Begin coursework Identify a research area and doctoral committee Prepare a plan of study* Pass the qualifying exam (August)
Year 2	Finish coursework Establish research Present and defend dissertation proposal (March–June)
Year 3	Continue research Continue or complete teaching requirement (as a GTA) Submit a paper for publication Attend and present at a research conference
Years 4-5 (as needed)	Complete research Continue or complete teaching requirement (as a GTA) Publish additional papers or proceedings Defend dissertation

*The [plan of study form](#) is for departmental use only. Students should file the form with an SIE Student Services Coordinator and maintain a copy for themselves to access it whenever they convene their committee and/or complete a requirement. Official tracking for SEAS and SIE requirements is done using the student's academic requirements report in SIS.

Qualifying Exam

The principal objective of the qualifying exam (also referred to as the comprehensive exam and Ph.D. exam) is to assess a student's research aptitude and confirm that they have the skills necessary to make a substantive contribution in their field. The exam also provides an opportunity for students to receive early, individualized feedback regarding their strengths and weaknesses in research and foundational knowledge.

The goal of the qualifying exam is not to directly assess any content in required courses but to provide a comprehensive use of the foundational principles and methods in research. Thus, students must have already specified the required coursework they will take for their program before taking the qualifying exam. Required coursework varies by concentration, the student's

anticipated dissertation topic, and the recommendation of the student's committee members.

Successful students will demonstrate that they can:

- a) Understand, interpret, and critically evaluate relevant literature.
- b) Analyze data (via experiments, observations, surveys, simulation, etc.) and draw meaningful conclusions.
- c) Apply technical/engineering tools, concepts, coursework and/or approaches to gain insight on real-world problems.
- d) Effectively communicate results in both oral and written formats.
- e) Answer questions and respond to critical feedback when sharing, defending, and revising their ideas.

The examination consists of two parts, written and oral. The following guidelines apply.

Committee Composition

The examining committee will include three to five members. At least two of the committee members must be from the candidate's main research area. At least three of the members must be faculty members with non-zero percentage appointments in SIE. External (non-SIE) or courtesy faculty may be a part of the committee but do not count toward the program requirement. In most instances, the qualifying committee contains many of the same members as the student's dissertation advisory committee. However, this is not mandatory.

The chair of the qualifying exam committee should be from the student's home program but cannot be the student's advisor. The chair will be responsible for collecting and delivering feedback to the student, as explained below.

Committee Creation and Preliminary Scheduling

Students should work with their advisor to identify a qualifying exam committee and schedule their exam to take place no later than the end of their second year in the SIE department. Some students may be ready earlier, and if the committee is amenable, they may take the exam after completion of the required coursework for their program. The student should send a completed [Recommendation and Certification of Doctoral Advisory Committee](#) form to SIE Student Services Coordinator by the end of the semester preceding the examination. The form should be submitted no later than two weeks prior to the date of the written exam component.

The faculty recognizes that preparing for and taking the qualifying exam can be one of the more stressful periods of the Ph.D. program. However, framing the exam as a research aptitude assessment is intended to make it such that "preparing for the exam" and "doing research" can be one and the same. Students should meet with each of their committee members prior to beginning their exam preparations so they can discuss how the candidate can best make use of their time.

Structure and Format of Exam

Students will work with their individual examination committees to identify dates for the written and oral components of the exam. They should then work backward from those dates to complete the activities summarized below. Table 4-3 provides a hypothetical sample timeline for completing the exam.

Once the written exam date has been selected, students should prepare a two-page document that (i) outlines their research area and explains how it will advance knowledge in their Ph.D. discipline and (ii) provides a preliminary reading list (e.g., research papers, book chapters, policy briefs) organized by topic to be used in their qualifying exam. They should circulate these materials to their committee members no later than one month before their scheduled exam date. Committee members will have one week to respond to the student with suggested modifications to their proposed reading list. The student will then circulate the final reading list to the whole committee no later than two weeks before the scheduled exam date. It is recommended that students start this process early so they can have a thoughtful, engaged dialogue with the committee and prepare a comprehensive reading list.

The student's examination committee will then prepare their questions based upon the research overview and finalized reading list. They will forward the questions to the advisor and other committee members before the exam with adequate time for everyone to evaluate the exam as a whole before it begins.

The student will work on the exam for up to seven days; however, individual faculty may specify time limits for their own individual questions. Students will submit their solutions to the examination committee at the end of the exam period. Each committee member will score their own questions using the a-e criteria of the SIE Qualifying Exam Assessment Form (see Table 4-4). Each committee member should complete their own scoring prior to the oral exam.

The oral exam will consist of two parts: 1) a brief prepared presentation summarizing the questions and the student's responses to the questions and 2) follow-up questions from the committee. There is no stipulated duration for the oral exam. However, a one-hour oral exam period is recommended with approximately 30 minutes devoted to presentation and 30 minutes allotted for questions. Once the oral exam has concluded, each committee member will re-score their question, again using the a-e criteria and the SIE Qualifying Exam Assessment Form (see Table 4-4). The chair is responsible for collecting and organizing feedback from the committee and then communicating it to the student after the exam. A key objective for the exam is to give students individualized feedback on their unique strengths and weaknesses.

Exam Outcomes

The outcome of the exam is determined collectively by the examination committee choosing from four options: pass with distinction, pass, pass with remediation, or fail. The committee weighs both parts of the exam (written and oral) at its discretion when determining the outcome. The chair is responsible for communicating the outcome of the exam and delivering feedback from the committee to the student after the exam.

Students who do not pass, or pass with remediation, can retake the examination within six months. After two unsuccessful attempts, the student is dismissed from the Ph.D. program.

Forms

- **Engineering School's Recommendation and Certification of Doctoral Advisory Committee**: This form is due to an SIE Student Services Coordinator at least two weeks before the scheduled examination.
- **Engineering School's Report on Ph.D. Exam and SIE Ph.D. Qualifying Exam Assessment**: These forms are sent to the chairperson of the committee by the SIE Student Services Coordinator to be completed and returned to them after the exam.
- **Academic Requirements Report from SIS**: The student brings one copy for each committee member to the oral exam.

Note: A student must have approval from the academic advisor for forming their committee.

Table 4-3: Hypothetical timeline for an SIE qualifying exam for an Aug. 1 exam date.

Date	Task(s)
Jan. 1	Student forms examination committee and files committee composition form
February	Candidate circulates research overview and preliminary reading list to examination committee
May, June	Candidate and committee finalize reading list; committee members formulate and review questions
Aug. 1	Questions delivered to candidate
Aug. 8	Candidate submits written responses to examination committee and graduate coordinator
Aug. 9	Committee members score written responses to their questions
Aug. 16	Oral examination takes place; committee rescores candidate responses and chair collects feedback and reports outcome (pass with distinction, pass, pass with remediation, fail) to candidate
Aug. 17	Follow-up email/interaction with chair if necessary

Table 4-4: SIE Qualifying Exam Assessment. Committees may comprise three to five members, but at least two members must be from the student’s main research area and three must have non- zero appointments in SIE. (Rating scale: 5 = superior/outstanding, 4 = very good, 3 = acceptable, 2 = marginal/needs attention, 1 = unacceptable for Ph.D. student.)

Criterion	Member 1 Initials: _____	Member 2 Initials: _____	Member 3 Initials: _____	Member 4 Initials: _____	Member 5 Initials: _____	
a. Understand, interpret, and critically evaluate relevant literature.	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	
b. Analyze data and draw meaningful conclusions.	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	
c. Apply technical/engineering tools, concepts, and/or approaches to gain insight on real-world problems.	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	
d. Effectively communicate results in both oral and written formats.	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	
e. Answer questions and respond to critical feedback when defending his/her ideas.	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	WRITTEN 1 2 3 4 5 NA ORAL 1 2 3 4 5 NA	
Overall assessment (circle):	1 2 3 4 5					
Recommended outcome (circle):	Pass with Distinction		Pass	Pass with Remediation		Fail

Comments:

Specific Strengths and Weaknesses:

Dissertation Proposal

Formulation of a dissertation proposal is a key step toward completion of the Ph.D. This milestone allows a student’s committee to make three important determinations:

1. To assess whether the student’s knowledge of their chosen area and their understanding of relevant literature is adequate to complete a Ph.D.
2. To recommend coursework, approaches/techniques and other resources that would facilitate or enhance the proposed work.
3. To evaluate whether or not the proposed work, if completed, would constitute an acceptable basis for a doctoral dissertation.

Selection of a Ph.D. committee is an important component of the dissertation proposal process, insofar as the committee is responsible for helping the candidate navigate their path to the Ph.D. The Ph.D. committee approves a candidate’s plan of study, including coursework, teaching, dissertation proposal and the final dissertation. SIE faculty place high value on interdisciplinarity and crosscutting collaborative research. Accordingly, we are firmly committed to letting each student work with their research advisor to select a committee that best supports their scholarly

and professional development. Ph.D. candidates must adhere to both the committee composition rules set by SEAS as well as by the department. The requirements are outlined below:

- SEAS Requirements: The final dissertation committee must include a minimum of three Engineering School faculty with a minimum of four UVA faculty and a minimum of five total members; one of the UVA members (the external member) must be from outside SIE. At least three of the dissertation committee members must have non-zero appointments in SIE.
- SIE Courtesy faculty member policy: Courtesy faculty members appointed by SIE may serve as the primary advisor of a Ph.D. student. Courtesy faculty members that are not the primary advisor can count towards either an internal or external member.
- SIE Committee composition rules: Final committee composition should consist of no fewer than two SIE faculty members with greater than fifty percent appointment. The committee chair should also have a primary appointment in SIE.

Finally, it is strongly recommended that the dissertation proposal committee consist of all five faculty members that would be on the final defense; however, it is acceptable for a dissertation proposal committee to have four instead of five members, in which case the fifth person is added before the final defense.

The dissertation proposal consists of both a written document and an oral presentation. The written document should discuss the proposed work, contributions, preliminary results to date, and research timeline in a concise manner. Proposal documents should not exceed fifteen single-spaced pages (or thirty double-spaced pages). The bibliography and any appendices (appendices are not required to be read by the student's committee) are not included in this page limit. Significant departures from these guidelines must be approved in advance by the student's proposal committee. The written proposal document must be submitted to the committee at least two weeks in advance of the proposal presentation.

All members of the committee evaluate the proposal and generate a preliminary assessment of the candidate's achievement of the following research skills: a) identifying relevant problems of interest, b) interpreting existing literature, c) generating hypotheses, d) collecting data (via experiment, observation, modeling and/or simulation), e) interpreting results and drawing conclusions, f) communicating results (in oral and written formats), g) answering questions and defending their work, and h) commenting/critiquing on the work of others.

The oral defense of a dissertation proposal is advertised within SIE and Engineering School. All interested parties are welcome to attend. The candidate gives a brief overview (twenty to thirty minutes) of their proposed dissertation research, then takes questions from the audience and their committee. The committee then deliberates and decides whether the candidate has passed. The committee also reviews the student's transcript and plan of study to recommend additional coursework or other relevant training if necessary. In this way, the emphasis of the dissertation proposal will be on supporting student growth, rather than just deciding who passes/fails. Candidates who fail the exam must take it again within six months. The chair of the candidate's committee takes the lead in identifying an appropriate format and timeline for the second-chance defense. Students who do not pass on their second attempt are dismissed from the Ph.D. program.

It is the candidate's responsibility to email the SIE Student Services Coordinator their announcement information which consists of the committee members list with the chair and advisor identified, the meeting date, time, and location information, and the dissertation proposal title and abstract at least two weeks before the proposal. The SIE Student Services Coordinator will provide the chairperson with the relevant forms ([Dissertation Proposal and Admission to Candidacy](#) and [Dissertation Proposal Assessment](#)) for the proposal defense. It is the candidate's responsibility to bring their transcripts and plan of study. Each committee member is responsible for completing a research skills assessment and submitting it to the committee chair. The chair collates the feedback, submits an aggregated assessment form to the SIE Student Services Coordinator (who sends it to the Engineering School register) and circulates the feedback to the candidate and their advisor within two weeks of the proposal.

Finally, reiterating from Section 4.4 and Table 4-2, SIE students typically complete their proposal milestone at the end of Year 2, or the end of Year 3 if they enter the Ph.D. without an M.S. A revised [Recommendation and Certification of Doctoral Advisory Committee](#) form should be submitted to the SIE Student Services Coordinator no later than two weeks before the scheduled proposal if the student has revised their committee since their qualifying exam and/or have added the fourth committee member. Proposal defenses are typically scheduled from March through June.

Final Defense

The final dissertation defense is the culminating step of the Ph.D. process. The main objective of this milestone is to confirm that the completed research constitutes a meaningful contribution to the body of knowledge in the student's field of study. A secondary objective is to ensure that the written quality of the final document is adequate to highlight the value of the work and make it accessible for an educated audience. Often, there are intermediate meetings with the committee between the proposal and the defense to discuss various, dissertation-related topics.

Students are eligible to defend their dissertation once they have completed all other requirements, including the publication requirement. The final defense committee must have five members (see Section 4.4.3). There is no required format for the dissertation. Rather, the candidate should work with their committee to prepare a satisfactory document. The candidate should circulate the final dissertation to their committee no later than two weeks before the oral defense date. Final defenses are advertised within the SIE and Engineering School. All interested parties are welcome to attend. The candidate gives a brief overview (thirty to thirty-five minutes) of their dissertation research. The candidate then takes questions from the audience and their committee. The committee deliberates and decides about whether the candidate has passed.

It is the candidate's responsibility to email the SIE Student Services Coordinator their announcement information which consists of the committee members list with the chair and advisor identified, the meeting date, time, and location information, and the dissertation defense title and abstract at least two weeks before the final defense. The SIE Student Services Coordinator will provide the chairperson with the relevant forms ([Report on Final Examination](#) and [Thesis and Dissertation Assessment](#)) for the final defense. The chairperson will return the completed forms

back to them after the final defense.

Ph.D. candidates must apply for graduation in SIS at the beginning of the semester in which they're expected to graduate. In addition, after successful completion of the final defense, the candidate must submit the dissertation via Libra (see [Graduation Procedure](#)) and complete the [Survey of Earned Doctorates](#).

4.5. Academic Progress

Good academic standing is defined as a minimum cumulative grade point average of 3.0 and Satisfactory grade(s) in research and in teaching, when applicable. Unsatisfactory work during any semester or a cumulative grade point average of less than 3.0 may be considered a sufficient reason for withdrawal of financial assistance or for enforced withdrawal from the graduate program. Non-degree and visiting graduate students are also expected to maintain a minimum cumulative grade point average of 3.0 to remain in good academic standing.

Graduate students may incur academic probation any fall or spring semester in which they fail to maintain a minimum cumulative grade point average of 3.0. Students on academic probation have one semester to increase their cumulative grade point average to 3.0 or above, or they will be placed on academic suspension.

Students who do not raise their GPA to 3.0 during their academic probation will incur academic suspension. Academic suspensions may be appealed within 30 days of notification to the UVA Engineering Graduate Studies Committee. Without an approved academic suspension appeal from the UVA Engineering Graduate Studies Committee, students are permanently academically suspended from the School of Engineering and are not eligible for readmission. Approved academic suspension appeals from the UVA Engineering Graduate Studies Committee provide the student a prescribed number of semester(s) of academic probation to increase their cumulative grade point average to 3.0.

4.6. Administrative Forms

It is important that graduate students submit administrative forms related to degree requirements in a timely manner to the SIE Student Services Coordinator. These forms can be found on the Engineering School's [webpage](#) for current engineering graduate students.

5. Graduate Student Council Charter

Article I: Name

This organization shall be called the Systems & Information Engineering Graduate Student Council (SIE-GSC), a non-profit student-run organization, hereafter referred to as the Council.

Article II: Purpose

The Council is a democratically elected representative body run by and for systems engineering graduate students. The purpose of the council is to 1) advocate on their behalf to ensure a rewarding, equitable, and balanced graduate experience, and 2) plan events to cultivate their sense of belonging, inclusion, and fun.

Article III: Participation

Graduate students who are currently enrolled in systems engineering may participate in any event or meeting that is open to the general student body. The Council does not restrict participation in any way, whether on the basis of program, age, color, disability, gender identity, marital status, national or ethnic origin, race, religion, sex, pregnancy, sexual orientation, veteran status, and family and genetic information.

Article IV: Code of Conduct

All participants in Council activities should feel a sense of peace, safety, respect, understanding, mutuality, and inclusion. Towards fulfilling these needs, this charter encourages the practices of nonviolent communication and active listening in all Council affairs. Students and Council members who experience feelings associated with these needs being unmet following an interaction with a Council member(s) are encouraged to pursue a good faith dialogue with one another to reach a resolution. If the dialogue is unsuccessful, concerned persons will be given space during a Council Meeting to present their specific, non-judgmental, non-blaming observations that stimulated their concerns. The Council will then work to reach a majority consensus on boundaries to facilitate the fulfillment of these needs as well as consequences for violating those boundaries.

Article V: Council Structure and Function

The Council will be governed by the following means:

1. **Council member elections** will be conducted to select a chair from the systems engineering graduate program for the three Core Committees for a total of three Council Members. After elections, the new Council's term begins at 12:00 am on the date after the Spring examination period and ends at 12:00 am on the date after the next year's Spring examination period.
2. **Core Committees** are defined as follows:
 - a. **Community Enrichment Committee (CEC)**
 - i. *Mission:* Plan events to cultivate graduate students' sense of belonging,

inclusion, and fun.

- ii. *Required duties:* creating and disseminating a year-long plan for at least one graduate-centered social event per month; submitting expected social event costs and Graduate Community Meeting costs for the year by June 30th to the Council for a vote; planning recruitment week activities in collaboration with faculty and staff (these should be paid for by the department); planning at least one event bringing together students, faculty, and staff in collaboration with the department (discuss cost-sharing with the department); sending announcements for Graduate Community Meetings and organizing catering for those meetings; adding events to a calendar shared with all systems graduate students.
- iii. *Example activities:* planning events such as mixer events, lunch on the lawn, group classes, intramural sports team; promoting events.

b. Council Coordination Committee (CCC)

- i. *Mission:* Ensure smooth Council operations and maintain relationships through regular communication with department staff and faculty leadership, the Graduate Student Engineering Council (GSEC), and other graduate student councils.
- ii. *Required duties:* scheduling Graduate Community meetings, Council Meetings, and Council and Faculty meetings; coordinating with advisors to maintain a list of lab group representatives for use by the SAC and CEC; attending GESC meetings; encourage meeting time constraints and tracking Council attendance during Graduate Community Meetings and Council Meetings; attending Council and Faculty Meetings and sending out summary emails; managing elections; maintaining a shared up-to-date contact information spreadsheet for Council members and key department contacts; sending calendar invitations to relevant persons for scheduled meetings.
- iii. *Example activities:* attending faculty meetings as student representatives, coordinating with organizations outside of UVA to seek out opportunities for fun or professional development; generating ideas for shared social events with other departments and conveying those ideas to the CEC; generating ideas to improve the graduate student experience and conveying those ideas to the SAC.

c. Student Advocacy Committee (SAC)

- i. *Mission:* Advocate on behalf of SIE graduate students to ensure a rewarding, equitable, and balanced graduate experience.
- ii. *Required duties:* ensuring functional amenities (e.g., printing, kitchen appliances, etc.); conducting surveys of graduate students to ensure concerns are heard and to develop inclusive solutions, coordinating with the Director of Operations to conduct survey raffles of GrubHub credits when desired to increase response rates; submitting a budget for ensuring functional amenities and to fund survey raffles (e.g., printer paper) by June 30th for a Council vote; determining whether a budget increase is necessary

for the next Council and submit a budget increase request to the Director of Operations and the Graduate Program Director by the end of the Fall semester.

- iii. *Example activities:* writing one-pager survey reports with recommendations for student and/or faculty discussion; participating in department policy-making; initializing and recruiting for new committees (e.g., international student advocacy committee); surveying and interviewing students to improve representation; advocating for an adequate travel fund; advocating for Council function improvements; advocating for stipend increases.
3. **Equitable and sensible workload distribution** is intended for each Council member. If a Council member is concerned that their Committee's required duties do not align with their mission OR are leading to an inequitable workload, they should voice these concerns to the Council and attempt to voluntarily rearrange required duties for a specific length of time (up to the end of the Council's term) with the other Committees. Council members may also request a vote to reassign Core Council duties. If approved, this reassignment would take effect immediately and remain in effect for the remainder of the Council's term.
4. **Graduate Community Meetings** will be held at least monthly in a hybrid format and will aim for a maximum of one hour. During these meetings, at least one chair of each committee will take fifteen minutes to provide updates on their work, goals, next steps, and resource needs (including requests for volunteers) leaving at least seven minutes for questions and discussions. The order will be CCC, CEC, then SAC. Afterwards, Council members will stay for at least another fifteen minutes after the meeting to continue discussions with interested students. These meetings are open only to SIE graduate students and should be planned to maximize participation. The Council will provide food for these meetings. The CCC chairs will be responsible for tracking attendance and encouraging time constraints. The CEC chairs will be responsible for sending announcements and organizing catering.
5. **Council Meetings** will be held at least monthly in a hybrid or remote format and will aim for a maximum of forty-five minutes. During these meetings, at least one chair of each committee will take ten minutes to provide updates on their work, goals, next steps, and resource needs leaving at least five minutes for discussion. The order will be CCC, CEC, then SAC. During the remaining fifteen minutes, votes may be requested, and discussion may continue. Each Council member is expected to attend at least eighty percent of these meetings. The CCC chairs will be responsible for tracking attendance and encouraging time constraints.
6. **Council and Faculty Meetings** will be held at least once a semester and up to monthly in a hybrid format. The CCC chairs will always attend these meetings and report back to the rest of the Council. Other Council members are encouraged to attend, especially if they need faculty input on a project. Department representatives that should be invited to meet and copied on follow-up emails include: the graduate program directors, department chairs, student services coordinator, and the director of operations. The purpose of these meetings is for the Council and departments to 1) exchange information 2) make requests of one

another, and 3) coordinate about tasks, task assignments, and timelines. The CCC will send out a summary email to Council members and interested faculty and staff.

7. **Budgeting** for the Council's term should be finalized before the end of each fiscal year on June 30th and include expected costs for food, social events, survey raffles, amenities (e.g., printer paper), and contingency as deemed necessary. The budget must be approved by the Council through a vote by June 30th. The CEC is responsible for budgeting for food and social events and the SAC is responsible for budgeting for amenity costs and survey raffles. The SAC and CEC should consolidate their budgets into a single document that includes a contingency for unplanned expenses before proposing a vote. If the Council is interested in increasing the annual budget as allocated by the department, the SAC will draft a new budget and a budget justification document. These documents must be approved by a council vote and submitted to the Director of Operations by the end of the Fall semester. The new budget would not take effect until the following fiscal year (beginning July 1st) for the next Council.
8. **Tracking spending** will be done by storing all receipts for Council expenses in the Council's cloud storage service, and by maintaining a spreadsheet with all Council expenditures. Each Council member is responsible for uploading receipts for reimbursed expenses to the storage service and for entering expenses in the shared spreadsheet.
9. **Council votes** will occur anytime a Council member requests a vote, and that request is seconded by another member. Each council member's vote has equal weight, and a majority is required for decision making (e.g., if no members abstain, 4 votes are necessary; if 1 or 2 members abstain, 3 votes are necessary, etc.). Votes may occur over any platform (e.g., Slack, email, during a meeting) and do not conclude until each Council member has submitted a vote, decided to abstain, or automatically abstains. Automatic abstention occurs if a Council member does not submit a vote by 5pm two business days after the call to vote was seconded (e.g., if a vote is seconded on Tuesday, members must vote by 5pm on Thursday). After 3 automatic abstentions, Council members must conduct a vote to replace that member.
10. **In the event of a tied Council Vote** not counting abstentions, the council must vote to choose whether to 1) continue discussion and then call another vote, or 2) vote on a tie break strategy. If they opt to continue discussion and a majority decision cannot be reached within 3 business days following the end of the original vote, the Council must move forward with a tie break strategy.
11. **Tie break strategies** are 1) conducting a General Body Referendum or 2) implementing a Randomized Decision. If a tie break strategy cannot be agreed upon, a proponent and opponent of the controversial choice will collaborate to conduct the General Body Referendum. The Referendum may proceed once both parties have indicated their approval of the survey in writing or verbally during a live meeting. If they are unable to reach an agreement within 3 business days, the decision will be randomized. The decision will also be randomized if the Council cannot agree on the tie break strategy or if the General Body Referendum is a tie.

12. **A General Body Referendum** is a binary (e.g., yes or no, option a or option b) survey open to all SIE graduate students for at least three full business days that ensures no more than one vote per graduate student. After survey results have been compiled, the choice that receives the majority of responses takes effect. The Referendum should include an opportunity for anonymous in-person voting during a Graduate Community Meeting and voting via a non-anonymous survey. The Council will never release information linking individuals with responses. Doing so would result in the immediate removal vote of the Council member(s) responsible.
13. **In a Randomized Decision**, choices are numbered, and a random number generator is used to select one. At least 4 council members must be present as witnesses.
14. **Replacing Council members** can be called to a vote by any Council member (including themselves if they feel unable to carry out their committee's mission) OR any SIE graduate student. Removal from the Council is NOT punitive. Removal is to ensure continuing functioning of the Council. If a member is removed, the Council will commit to a charitable narrative in finding a replacement and respect the privacy and dignity of the former member. A majority of Council votes are required to vacate the position. The CCC will conduct a survey to find a replacement candidate of the same major. The remaining Council members will then conduct a rank-choice vote of the candidates and the winner will assume the position immediately.

Article VI: Committees

In addition to the committees chaired by Council members, new committees may be formed at any time by any SIE graduate student including Council members. Requests for committees must be submitted in writing and define a chair, objectives, timelines, and resource needs. The committee will take effect once a majority of the Council votes in favor. If resource needs include money, an affirmative vote also implies budgetary approval.

Article VII: Elections of Council Members

1. **Voting Eligibility:** All SIE graduate students may participate in Council elections.
2. **Election Process:**
 - The Council will hold elections annually in March or April.
 - The CCC will schedule a town hall style general body meeting to solicit candidates at which at least one Council member chair from each committee will provide a maximum ten-minute presentation about the position and their work.
 - CCC will send out a survey for candidates to provide:
 - The committee they would like to chair.
 - A one paragraph summary detailing their vision, why they are running.
 - The CCC will organize Candidates responses into a Candidate Information Sheet to disseminate to the general student body.
 - The CCC will send out the Candidate Information Sheet along with a description of how to vote at least two weeks before in-person voting.

- SIE graduate students will be allowed to cast their votes for each Council Member. There will be two options to vote, a non-anonymous online survey and an anonymous in-person ballot. In-person elections will take place over the course of three hours and will be monitored by no fewer than three volunteers who will receive a catered thank-you lunch.
- The new Council will take over at the end of the Spring semester.
- The former Council members will collaborate with the new Council to ensure a successful turnover.

Article VIII: Amendments and By-Laws

1. Amendments to the Charter may be proposed in writing by any current SIE graduate students. Non-Council members authoring amendments are welcome to collaborate with the Council on designing the amendment. The amendment's original author(s) have full discretion regarding whether and how to incorporate feedback. The Council may fix obvious typos and grammatical errors with unanimous (i.e., 100%) Council approval without going through the amendment process.
2. A proposed amendment must include a Charter draft coupled with an accurate one-page maximum document justifying the changes. Council approval is not necessary for the amendment to go to a General Body Referendum. Amendment author(s) will be offered fifteen minutes in the upcoming Council Meeting for discussion and to seek support. Amendment author(s) will also be offered fifteen minutes in the upcoming Graduate Community Meeting to advocate for the amendment, allowing at least seven minutes for discussion. The CCC will ensure that opponents are given an opportunity to submit counter arguments written in an accurate one-page maximum document to accompany the Referendum. The CCC will then conduct a General Body Referendum during which one-pagers will be disseminated, and if a majority votes in favor, the amendment takes effect immediately. If multiple amendments are proposed by different author(s), they should go to separate General Body Referendums in the order that proposals were initially received.

APPENDICES

A. Revision History

10/10/23: added section 2.5. Program Requirements: Accelerated Master's Program.

10/12/23: added section 5. Graduate Student Council Charter.

10/17/23: added information about academic progress in sections 2.8, 3.5, & 4.5.

10/17/23: added department's vision statement information in section 1.2.

B. Faculty Eligibility for MS/PhD Advisor and Committees

Faculty eligible to be on MS/PhD committees

- General Faculty (AGF: research, teaching, practice; all ranks [with a PhD])
- Tenure Track Faculty (all ranks)
- Research Scientists (all levels with a PhD)
- Special cases not listed above must be approved by the appropriate Program Chair.

Faculty eligible to be a MS/PhD Advisor

- Any faculty with a joint appointment in SIE (at any % > 0).
- Special cases not listed above must be approved by the appropriate Program Chair.

NOTES

1. The advisor must be UVA faculty, so for example not a member of the Professional Research Staff (research scientists, senior scientists, principle scientists, etc.), not a Lecturer, and not a visiting faculty.
2. “Faculty” for all committees includes any faculty status and includes faculty-qualified SIE research and teaching members (e.g., research scientists and lecturers that hold a Ph.D.).
3. All committees must follow UVA and SEAS guidelines, see:
<http://records.ureg.virginia.edu/content.php?catoid=57&navoid=5188#committee-requirements>.
4. AGF must follow AGF policy guidelines, see:
<https://engineering.virginia.edu/sites/default/files/common/offices/deans-office/policies-bylaws/2017.7%20SEAS%20Policy%20on%20Academic%20General%20Faculty%203.5.2019.pdf>.