



MATERIALS SCIENCE  
AND ENGINEERING  
COLORADO STATE UNIVERSITY

# GRADUATE STUDENT HANDBOOK

For Graduate Degrees  
in  
Materials Science & Engineering

AY 2024-2025

[research.colostate.edu/SMSE](https://research.colostate.edu/SMSE)

## INTRODUCTION

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Welcome to the School of Materials Science & Engineering (SMSE) graduate handbook!

Graduate study in materials science and engineering (MSE) at Colorado State University (CSU) is intended to bring together faculty members and graduate students in a diverse community of scholars having a common interest in advanced professional study and creative work. The program seeks to develop MSE professionals who use their multidisciplinary problem solving skills to address global challenges in the field of MSE. The degree program contains elements that will address materials technology transfer, materials manufacturing, responsible conduct of research, and other professional development skills necessary for success in the materials community.

We hope you enjoy your program of study and the work you complete in our graduate program. The *Graduate Student Handbook* is designed to inform graduate students of their roles and responsibilities, and to make explicit the requirements of the graduate programs. It is your responsibility to familiarize yourself with these policies and abide by them. You are also expected to familiarize yourself with the [Graduate and Professional Bulletin](#) published by the Graduate School, and available at the Graduate School's website. *The Graduate School's policies and procedures supersede SMSE policies and procedures.* Please note, updates to the SMSE handbook and program related policies may occur before the update/s are present in the online version of this handbook.

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## GRADUATE STUDENT RESPONSIBILITIES

Graduate students are responsible for knowing any special expectations and requirements of their department and program and are expected to remain in good academic standing by making satisfactory degree progress and *must at all times have an advisor*. With regard to meeting Graduate School deadlines and requirements, the **ultimate responsibility for a graduate student's program lies with the student**. The student's advisor, graduate committee, the Graduate School office, the SMSE department office, and the SMSE Graduate Committee are all available to help and advise. Several deadlines are critical, and each semester the Graduate School publishes a list of deadlines which must be met in order to graduate during that term.

## SMSE FACULTY

Successful completion of graduate studies requires close cooperation between student and advisor. The student and advisor work together to coordinate the plan of study through graduation (i.e. courses, research, committee members, final exam/seminar, etc.). A permanent advisor is *usually* assigned to every student upon admission based on the research area of the professor. Students on a rotating GRA will not have an advisor upon admission.

If a permanent advisor has not been determined by the start of the first semester, then the student should make an initial plan of study with the temporary advisor, Associate Director (Chris Weinberger) and/or Program Manager (Carolina Bañuelos).

The Associate Director of SMSE and Program Manager serve as temporary advisors to students who pursue the coursework-only Master (plan B) of Materials Science and Engineering degree and to students who come to the program on a rotating graduate assistantship. **Graduate faculty advisors and research areas are as follows (alphabetized by faculty home department):**

### Core Faculty (Advisors)

These faculty are considered "in department," and can be committee members, or faculty advisors.

CORE FACULTY ADVISOR	HOME DEPARTMENT	RESEARCH AREA/S
<b>Travis Bailey</b> Professor SMSE Director	Chemical and Biological Engineering	Nanoscale self-assembly processes in block copolymer composite materials and their applications
<b>Matt Kipper</b> Associate Professor	Chemical and Biological Engineering	Polyelectrolyte properties of biologically derived polysaccharides, and how these properties can be exploited to tailor the nanostructure of biomaterials and biomedical applications

<b>Margarita Herrera-Alonso</b> Associate Professor	Chemical and Biological Engineering	The molecular and process determinants of solution-based polymer assemblies
<b>Chris Snow</b> Associate Professor	Chemical and Biological Engineering	Guided protein and DNA engineering, particularly the engineering of crystals
<b>David (Qiang) Wang</b> Associate Professor	Chemical and Biological Engineering	Advanced theories and computer simulation techniques to study complex fluids at nano- to meso-scales
<b>Megan Hill</b> Assistant Professor	Chemistry	organic chemistry to design advanced polymeric materials for applications in sustainability, catalysis, and soft materials
<b>Garret Miyake</b> Professor	Chemistry	Catalysis, photochemistry, polymer chemistry. Major focus of in the design of photoredox catalysts for the application in organocatalyzed atom transfer radical polymerization (O-ATRP)
<b>Jamie Neilson</b> Associate Professor	Chemistry	Understanding local chemical environments and their influences on electronic properties (e.g., magnetism) in new materials
<b>Amy Prieto</b> Professor	Chemistry	Synthetic methods for nanostructured materials with applications in renewable energy
<b>Justin Sambur</b> Associate Professor	Chemistry	Single nanomaterials behave in working solar energy conversion and catalytic devices
<b>Christopher Bareither</b> Associate Professor	Civil and Environmental Engineering	Soil, geologic, geosynthetic (polymer), chemical, and environmental sciences to solve problems related to protection of human health and the environment
<b>Tiezheng Tong</b> Associate Professor	Civil and Environmental Engineering	Membrane-based processes for sustainable water supply
<b>Mahmoud Shakouri</b> Assistant Professor	Construction Management	Infrastructure Materials, concrete Durability, Service Life Modeling, Chloride-induced Corrosion, Biobased Cementitious Materials

CORE FACULTY ADVISOR	HOME DEPARTMENT	RESEARCH AREA/S
<p><b>Yan (Vivian) Li</b> Associate Professor</p>	<p>Design and Merchandising</p>	<p>Nanostructured Materials for High-tech Textiles and Smart/Intelligent Medical Textiles</p>
<p><b>Diego Krapf</b> Associate Professor</p>	<p>Electrical and Computer Engineering</p>	<p>Architecture of mammalian cells. Specifically, single-molecule biophysics experiments at the nanometer scale. Particular emphasis on the actin-based cytoskeleton and its role in the dynamic organization of the plasma membrane</p>
<p><b>Carmen Menoni</b> University Distinguished Professor</p>	<p>Electrical and Computer Engineering</p>	<p>Characterization of high bandgap oxide materials for the engineering of interference coatings for high power lasers</p>
<p><b>Jiangguo (James) Liu</b> Professor</p>	<p>Mathematics</p>	<p>Finite element methods, flow &amp; transport in porous media, poroelasticity</p>
<p><b>Yongcheng Zhou</b> Associate Professor</p>	<p>Mathematics</p>	<p>Modeling of real world problems, through studies combining rigorous mathematical analysis and computational simulations of high fidelity</p>
<p><b>Zhe Cheng</b></p>	<p>Mechanical Engineering</p>	<p>advanced ceramic electrode and electrolyte materials for solid-state electrochemical energy conversion including solid oxide fuel cells, advanced ceramic materials and processing for electronic applications</p>
<p><b>Kaka Ma</b> Associate Professor</p>	<p>Mechanical Engineering</p>	<p>Design, processing and characterization of metals, ceramics and their composites Sustainable material engineering</p>
<p><b>Reza Nazemi</b> Assistant Professor</p>	<p>Mechanical Engineering</p>	<p>Challenges associated with renewable energy utilization, storage, and transport.</p>
<p><b>David Prawel</b> Associate Research Professor</p>	<p>Mechanical Engineering</p>	<p>Biomaterials for cardiovascular and orthopedic healthcare; 3D product development</p>
<p><b>Donald (Don) Radford</b> Professor</p>	<p>Mechanical Engineering</p>	<p>Induced distortion in composites, viscoelastic constitutive modeling, advanced polymer processing, and polymer foams, damage assessment and repair of composites and high temperature composites</p>

CORE FACULTY ADVISOR	HOME DEPARTMENT	RESEARCH AREA/S
<b>Chris Weinberger</b> Associate Professor SMSE Associate Director	Mechanical Engineering	Computer models to describe the properties of ceramics, metals and their alloys
<b>Hua Chen</b> Associate Professor	Physics	Theoretical condensed matter and materials physics, with a special focus on the roles played by spin-orbit coupling, Noncollinear magnetism, Topological superconductivity, and low-dimensional materials
<b>James Sites</b> Professor	Physics	Optical properties, photoluminescence, Hall measurements, and surface analysis

## Associate Faculty

Associate faculty work on research related to materials science and engineering. These faculty are considered “out of department,” and can be committee members, but they cannot be faculty advisors. Only core faculty can be advisors. Majority of our associate faculty fulfill the role of “outside member” on a student committee.

ASSOCIATE FACULTY	HOME DEPARTMENT	RESEARCH AREAS
<b>Stuart Tobet</b> Professor	Biomedical Engineering	New technologies to visualize and measure molecules that influence migration in tissue slices
<b>Ashok Prasad</b> Assistant Professor	Chemical and Biological Engineering	Quantitative and predictive models for molecular and cellular biology by using tools and methods from the engineering and physical sciences
<b>David Dandy</b> Professor	Chemical and Biological Engineering	Development, and implementation of micro-total analytical systems ( $\mu$ TAS)
<b>Kenneth Reardon</b> Professor	Chemical and Biological Engineering	Application of proteomics to microbiome analysis, and the analysis and engineering of bacteria and algae for the production of biofuels and other chemicals

ASSOCIATE FACULTY	HOME DEPARTMENT	RESEARCH AREAS
<b>Alan Van Orden</b> Professor	Chemistry	Molecule spectroscopy
<b>Amber Krummel</b> Associate Professor	Chemistry	Molecular level details that drive nano- to microscopic properties in condensed phase systems
<b>Anthony Rappe</b> Professor	Chemistry	Study of catalytic processes. Reactions currently under study include single-site propylene polymerization and hydrocarbon oxygenation
<b>Chris Ackerson</b> Associate Professor	Chemistry	Nanoparticle structure, nanoparticle chemistry, novel nanoparticle synthesis strategies, applications of nanoparticles to biological imaging
<b>Eugene Chen</b> Professor	Chemistry	Intrinsically recyclable polymers; renewable monomers and sustainable polymers; polymer synthesis; new polymerization methodology; transition-metal, main-group & organic catalysis; biomass conversion to fuels, chemicals & materials
<b>Grzegorz Szamel</b> Professor	Chemistry	Macroscopic equilibrium and transport properties of condensed phase systems such as complex fluids using the methods of statistical mechanics
<b>Martin McCullagh</b> Assistant Professor	Chemistry	Theoretical studies of multiscale problems in biology
<b>Matthew Shores</b> Professor	Chemistry	Chemical sensing, magnetic / electronic materials and solar photoconversion
<b>Richard Finke</b> Professor	Chemistry	Chemical Catalysis, Alternative Energy, Nanoparticles, Organic Photovoltaics, Water Oxidation Catalysis, and Kinetics and Mechanism

ASSOCIATE FACULTY ADVISOR	HOME DEPARTMENT	RESEARCH AREAS
<b>Melissa Reynolds</b> Research Associate Dean	Chemistry	Molecular design and fabrication of biomimetic materials for use in medical device applications
<b>Charles D Shackelford</b> Professor	Civil and Environmental Engineering	Geotechnics, geotechnical engineering for waste containment geoenvironmental engineering groundwater flow, seepage, and contaminant transport
<b>Hussam N Mahmoud</b> Associate Professor	Civil and Environmental Engineering	Repair, and life-cycle cost of deteriorated infrastructure including steel bridges and hydraulic steel structures
<b>Kevin Lear</b> Professor	Electrical and Computer Engineering	Optoelectronic devices and systems to address future critical needs in applications including biosensors and optical communications
<b>Mario Marconi</b> Professor	Electrical and Computer Engineering	EUV and SXR (Soft X-Ray), lasers and applications, nano-lithography nano-Imaging
<b>Thomas Chen</b> Professor	Electrical and Computer Engineering	VLSI design & testing, biomedical engineering; computer architecture, parallel processing
<b>Jerry Magloughlin</b> Associate Professor	Geosciences	Geology, fault rocks, metamorphic petrology, geochronology, geoeducation
<b>Clayton Shonkwiler</b> Assistant Professor	Mathematics	Geometry to solve topological and physical problems
<b>David Aristoff</b> Assistant Professor	Mathematics	Monte carlo methods, numerical analysis, modeling and simulation, phase transitions and metastability, random graphs and networks
<b>Iuliana Oprea</b> Associate Professor	Mathematics	Hydrodynamic and hydromagnetic stability and bifurcation: the dynamo problem, the electroconvection of nematic liquid crystals; dynamical systems, pattern formation, mathematical modelling;
<b>Olivier Pinaud</b> Associate Professor	Mathematics	Wave propagation in random media, inverse problems and imaging; quantum transport

<b>ASSOCIATE FACULTY ADVISOR</b>	<b>HOME DEPARTMENT</b>	<b>RESEARCH AREAS</b>
<b>Simon Tavener</b> Professor	Mathematics	Galerkin finite element methods nonlinear hydrodynamic stability
<b>Susan James</b> Professor Vice Provost for Faculty Affairs	Mechanical Engineering	Biomedical Engineering, Polymeric materials Orthopaedic Biomaterials, Joint Replacements Regenerative Medicine/Tissue Engineering Cardiac Biomaterials and Medical Devices
<b>Christian M Puttlitz</b> Professor	Mechanical Engineering	Experimental and computation techniques to investigate orthopaedic conditions and their treatments
<b>Walajabad Sampath</b> Professor	Mechanical Engineering	CdTe PV cell research using with in line continuous fabrication; thin film printed circuit boards and electrical interconnections
<b>John Williams</b> Associate Professor	Mechanical Engineering	Modeling of erosion phenomena of ion thruster components, as well as experimental evaluation of plasma and ion beam interactions with materials for both aerospace and terrestrial applications
<b>Siu Au Lee</b> Professor	Physics	Quantum computing, laser manipulation of atoms, atom interferometry, nano-lithography
<b>Stuart Field</b> Associate Professor	Physics	Static and dynamic properties of superconducting vortices and other magnetic flux structures
<b>Kristen Buchanan</b> Associate Professor	Physics	Magnetization reversal and spin excitations of patterned magnetic elements

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## INFORMATION FOR NEW GRADUATE STUDENTS

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### **Colorado Residency**

- Domestic students who have a GRA or GTA are **required** to declare Colorado residency by the end of their first academic year (strongly encouraged if you are not on a GRA or GTA). This is done by completing a variety of tasks (**process must begin before arrival to Colorado**):
  - Students must be able to show proof of residence in Colorado **for the 12 months prior to the beginning of the second year in the program** (e.g. if the semester starts on August 22, 2023, you must be able to show you lived in Colorado as of August 22, 2022).

### **When to start the application process?**

- Start the process **before getting to Colorado**, it is a lengthy process.
  - The below should be **completed prior to August 15 (FA start) and January 15 (SP start)**
    - Colorado driver's license
    - Register to vote in Colorado
    - Colorado car registration
    - Watch the "Residency Orientation" video at [sfs.colostate.edu/residency](https://sfs.colostate.edu/residency)
- We recommend you attend a residency orientation:
  - Sign up here: <https://financialaid.colostate.edu/residency-orientations/>

Use the information in this [Residency Folder](#) to complete the residency application.

**Students who have a graduate assistantship (GRA, GTA, or GSA) and do not establish residency by 3<sup>rd</sup> semester (second year) will be responsible for paying the difference between resident and non-resident tuition.**

\*International students are not eligible to declare Colorado residency unless they are immigrating to the United States.

## PROGRAM OF STUDY OVERVIEW

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Program course requirements for the [MS Coursework only \(plan B\) are here.](#)

Program course requirements for the [MS Thesis \(plan A\) are here.](#)

Program course requirements for the [PhD are here.](#)

The [program of study \(GS-6 form\)](#) is submitted to the Graduate School *during* your third semester. You will have a registration hold on your account on October 1 or March 1 (of third semester) if you do not submit the GS-6 by then. You can submit this before, so long as you have your full committee. More information about the GS-6 form can be found at the bottom of page 16.

Thesis and dissertation work requires students to become involved in appropriate research activities. Graduate students will typically register for up to three formal courses each term, with four to five semesters typically required to complete the master's degree, and seven to ten semesters typically required to complete the Doctor of Philosophy Degree (summers not

included in these numbers). Students are required to submit scholarly publications during their research (see “Publication Requirements” section). These articles may be appropriately incorporated as chapters in theses and dissertations.

Courses to be applied towards any materials science engineering graduate degrees, including transfer credits from other institutions, must have been completed within the ten (10) years immediately preceding the date of completion of the final CSU degree. Transfer requests are submitted to the Graduate School with the GS6 Program of Study during the second semester and must include a course syllabus and a transcript showing that the course(s) was not used for another degree. The Graduate School will notify the student by email when the GS6 form has been approved, meaning that the recommended committee is satisfactory, the transfer of credits is completed, and the program of study is acceptable. The *maximum number of transfer credits* for the M.S. degree is 6 and 30 for Ph.D. degrees. [Transfer information can be found on this page of the graduate school website.](#)

**To petition for course substitution**, a student must turn in the [Petition for Substitution of Classes form](#). If the student wants to substitute a course they plan to take that will substitute a requirement, they must submit this form *prior* to taking the course they wish to substitute. In special cases, the graduate academic committee will review the student’s petition after they have taken the course they wish to substitute. Student’s should submit petitions to the Program Manager via email at [Carolina.Bañuelos@colostate.edu](mailto:Carolina.Bañuelos@colostate.edu)

A full-time course load for graduate students is 9 credits per semester. Once finished with coursework, we highly encourage students to register for at least 9 thesis/dissertation credits. This will ensure students graduate on time and faculty/the program is more likely to have funding for 3 to 4 years versus 5 or more. A minimum of 30 credits is needed for the MS degree and a minimum of 72 credits is needed for the PhD degree.

In cases where a graduate student is not registering for courses or research credits, but is continuing work on their degree (writing and analysis), registration in the program must be kept current by registering for [Continuous Registration \(CR\)](#) through RAMweb. Students who are registered for CR may not be on contract for a research or teaching assistantship but may work as student hourly employees. *You cannot be registered for CR if you are still doing research on campus.* Students are required to register for CR during the semester they plan to graduate if they are not registered for any credits. *Students who fail to register for CR will not be allowed to graduate that semester and will be required to apply for readmission (~\$70.00), register for CR (~\$150.00), and reapply for graduation.*

### **Graduate Assistantship Funding**

Funding *is typically* available for students working on the M.S. Plan A (thesis) or PhD program via graduate assistantships. While there is no funding for the Masters Plan B (coursework) from the SMSE program, there are several scholarship opportunities through Colorado State University. You can access the Colorado State University Scholarship Application via [RamWeb](#) (student portal). Most scholarships are due March 1<sup>st</sup> of every year.

Graduate Assistantship awards (20 hour/.50 FTE) cover tuition and offer a monthly salary to the student in return for certain specified services to the University. The salary is treated as income (subject to withholding taxes) and both the university and the student agree to a formal appointment when an assistantship is arranged. Each department is responsible for determining whether a student qualifies for any graduate assistantships. Assistantships cover tuition, differential tuition and provide a minimum monthly salary (\$2,300 for PhD, \$2,400 for PhD Candidate, \$2,100 for MS) throughout the academic year. PLEASE NOTE: **At this time, not all fees are covered by the assistantship.** To see what percentage of fees the student is responsible for, [please review this fees link.](#)

Assistantships are offered for the full academic year and are *renewed each semester*.

- Graduate Teaching Assistantship (GTA): Teaching assistants help in the provision of education services to undergraduates. Responsibilities may range from grading papers through leading discussions or lab sessions to complete independent teaching of a class.
  - If the department the student holds a GTA in does not meet SMSE's minimum stipend amounts (\$2,300 for PhD, \$2,400 for PhD Candidate, \$2,200 for MS)\*, SMSE provides a supplemental salary amount to reach SMSE's minimum monthly salary.
- Graduate Research Assistantship (GRA): Research assistants typically work with a professor on a project of importance to scholarship. Rotating GRA's included.

\*SMSE GTA/GRA Credit Policy (Effective Fall 2021): Any student on a department- provided SMSE GTA or a SMSE GRA must be enrolled in at least 9 credits (regardless of credit needs for completion of their degree program).

**As a multidisciplinary program, it is the student's responsibility to ensure they attend all required graduate school, SMSE, and department GTA/GRA trainings. For example, if the student's SMSE GTA is through Physics, the student must ensure they are trained as a Physics GTA.**

NOTE: If the student holds a graduate assistantship during the fall and/or spring semesters, the student must be registered for **at least one on-campus credit** each fall and spring semester the graduate assistantship appointment is in effect, **minimum 5 credits to have insurance coverage**. Other conditions of GA appointments can be found on the Graduate Assistantships Page. Please review the [Graduate Assistantship – Terms and Conditions of Appointment](#) page by clicking [here](#).

### **Registration**

All graduate students at CSU are required to be continuously registered in the fall and spring semester throughout their degree programs, even if they do not need any more credits to meet graduation requirements. This policy applies from the time of first enrollment through the graduation term. If you no longer need university resources to complete your degree (i.e., you are writing your dissertation from home and no longer conducting research or coming to campus at all), you must register for continuing registration (CR). Details regarding continuing registration can be found on the graduate school webpage and by clicking [here](#).

### **IMPORTANT NOTES:**

- If you are on a Graduate Teaching Assistantship (GTA), you cannot register for 801 section courses (online).
- If you are on a Graduate Research Assistantship (GRA), check with your advisor before registering for an online course. Online courses are more expensive and if you register without approval from your advisor, you will be responsible for the difference in tuition (difference between the residential course tuition versus the online course tuition).
- If you are funded through graduate assistantships and are on CSU's Student Health Insurance Plans (SHIP), you **must register for the upcoming fall before the end of each spring semester, or you will not have insurance over the summer**. If you intend to graduate in the summer, you must still be registered for CR over the summer.

# GRADUATE COMMITTEE

## **Graduate Committee**

To guide and supervise a student's progress for the M.S-thesis and Ph.D. degrees, a graduate committee should be selected by the student and *advisor before the end of the student's second semester of study*. PhD committees need 4 members and M.S. Plan A or Plan B need 3 members. SMSE committees have members from numerous departments because it is an interdisciplinary studies program.

In SMSE, “**in department members**” are **SMSE Core Faculty** and “**outside department members**” are **outside of this category**. *Associate SMSE faculty are “outside department members.”* Committees are composed of the faculty advisor, one outside department committee member, or committee members with appropriate faculty designations.

**Regardless of in department and out of department composition, a student's committee must have faculty from more than one home department\***. PhD committees need 4 members and M.S. need 3 members. The graduate committee makes regular evaluations of the student's degree progress and evaluates annual performance. *(Example: a student cannot have 2 core SMSE CBE faculty and one non-SMSE core faculty from CBE as their committee).*

*\*The home department is the department at CSU in which a faculty member has their primary appointment in addition to SMSE or other appointments. See table on pages 5-10 to check for home departments.*

## **Advisor and Graduate Committee Composition**

Once a student finds their advisor, they should work with their advisor to select the rest of the committee. Refer to the faculty table on page 5 or SMSE website for faculty assignment details.

## **Master of Science, Materials Science Engineering (MSE Plan B)**

Coursework only MS students need to complete coursework requirements, submit a paper (GS-40) and a complete a final seminar(GS24) in the form of a final presentation to their committee. The presentation format and expectations are to be agreed upon by the committee and student. Guidelines for this presentation can be found in the “graduate degrees requirements” sections, starting on page 20.

### **Typical makeup of Plan B committee:**

Advisor: Associate Director of SMSE (Chris Weinberger)

In department committee member: Director of SMSE (Travis Bailey)

Outside department member: chosen by student

Student is allowed to choose a committee of their choice, so long as items 1-3 below are met:

- Advisor: from the student's department(can be tenured/tenure-track faculty or associate research professor—co-advisor must be tenure or tenured track if advisor is associate research professor)
- A co-advisor or committee member from the student's department (can be tenured/tenure track faculty, associate research professor, or teaching faculty)
- An outside committee member from another department (tenured or tenure-track faculty)

*\*Important: More than one home department must be represented in a student's committee. (ex. All 3 members are in SMSE (2 core and 1 associate), they cannot all be from the same home*

department. Refer to beginning of “graduate committee” section for details on home department)

### **Master of Science, Materials Science and Engineering (M.S. Plan A)**

For M.S. candidates, the graduate committee must consist of at least **three** members:

- Advisor, who is a core faculty member of SMSE (can be tenured/tenure-track faculty or associate research professor—co-advisor must be tenure or tenured track if advisor is associate research professor)
- A co-advisor or committee member who is a core faculty member of SMSE (can be tenured/tenure track faculty, associate research professor, or teaching faculty)
- An outside committee member who meets the “outside departmental members” definition defined above (tenured or tenure-track faculty)
- A co-advisor or additional committee members from any department may be added to the student's committee, if appropriate, as long as items 1-3 above are met

*\*Important: More than one home department must be represented in a student’s committee. (ex. All 3 members are in SMSE (2 core and 1 associate), they cannot all be from the same home department. Refer to beginning of “graduate committee” section for details on home department)*

### **Doctor of Philosophy (Ph.D.)**

For Ph.D. candidates, the graduate committee must consist of at least **four** members:

- Advisor who is a core faculty member of SMSE (can be tenured/tenure-track faculty or associate research professor—co-advisor must be tenure or tenured track if advisor is associate research professor)
- Two members: one of which must be a core faculty member of SMSE serving as co-advisor or committee member. The other can be SMSE core faculty or a faculty or staff member with tenured/tenure-track faculty or special faculty appointment at CSU
- An outside committee member who meets the “outside departmental members” definition defined above (tenured or tenure-track faculty)
- A co-advisor or additional committee members from any department may be added to the student's committee, if appropriate, as long as items 1-3 above are met

*\*Important: More than one home department must be represented in a student’s committee. (ex. All 3 members are in SMSE (3 core/permanent and 1 associate), they cannot all be from the same home department)*

For detailed information on Advisor and Graduate Committee Makeup and committee member requirements, please refer to the graduate school’s advisor and committee requirements page: <http://graduateschool.colostate.edu/policies-and-procedures/advisor-committee/>.

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### **The GS-6 Form**

Each student must meet with their advisor to formulate a program of study, which must be submitted electronically to the Graduate School on form GS-6. A worksheet that can be used to prepare the GS-6 form is in the Appendix of this document. [The GS-6 form](#) is accessed and submitted via RAMweb, under the graduate school tab. The program of study contains the following three important elements:

- a program of course work, that identifies which classes will be taken and when (including any background or make-up courses);
- a proposed research area;

- and the names of the graduate program committee members.

**The Graduate School requires that the student submit the GS-6 by the middle of the student's third semester, we recommend before the start of the third semester.** However, it may be necessary to submit the GS-6 earlier in order to name the committee members and finalize the coursework only program. If you have questions about this form, contact the program manager, [Carolina.banuelos@colostate.edu](mailto:Carolina.banuelos@colostate.edu). Instructions on how to complete the GS-6 form are [found here](#).

## RESEARCH SAFETY, & RESPONSIBLE CONDUCT IN RESEARCH TRAINING

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All students conducting research or working in a lab are required to obtain the necessary training to safely conduct their research. CSU Environmental Health Services (EHS) provides many safety training modules pertinent to common research activities. SMSE students may work in a variety of different laboratory facilities across campus, each of which may also have its own safety training. The following may be required:

- All students engaged in any research or scholarly activity must complete the online *Responsible Conduct in Research* training (available at <https://www.research.colostate.edu/ricro/rcr/>).
- All students must familiarize themselves with the *Facility Safety Plan* for the buildings they are working in.
- All students working in wet laboratories must complete *the Hazardous Waste Generator* training offered by Environmental Health Services. The *Hazardous Waste Generator Training* must be completed before any research activity is commenced, if the lab that the student is working in contains hazardous chemicals or has associated safety risks, even if the student will not work directly with those hazards.
- **Students must complete other training and relevant courses that pertain to their research and/or teaching activities (e.g. laser safety, biosafety, and radiation safety training).**

*\*Students must maintain current training certification (e.g. annual recertification) while they are actively engaged in research.*

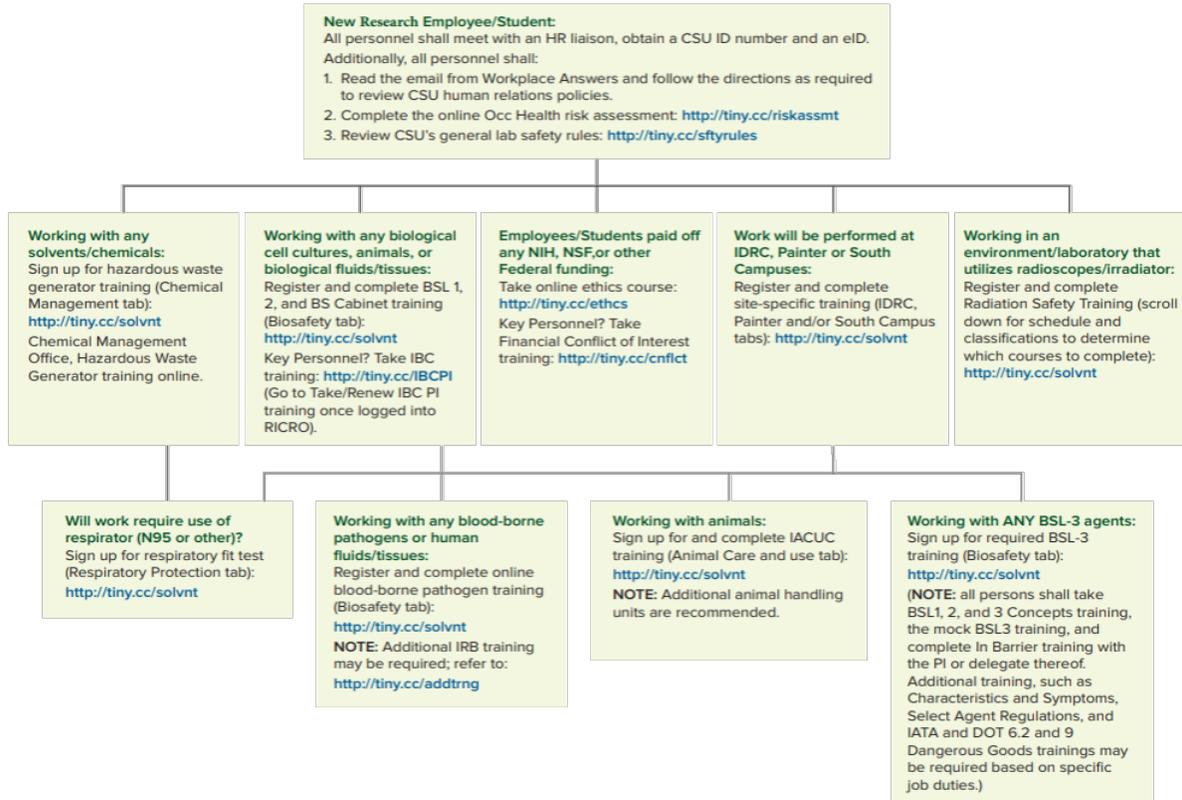
*For more information on Research Safety, reporting safety issues, and resources, visit:*

<https://www.research.colostate.edu/safety-and-compliance/><https://www.research.colostate.edu/researchsafety-culture/orange-folder/>

[Research Safety Culture, information and Resources here.](#)

# RESEARCH SAFETY

## On-boarding and Initial Training Flowchart



## ACADEMIC INTEGRITY & PROFESSIONAL CONDUCT

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All students are subject to the policies regarding academic integrity found:

- in the current [General Catalog](#) under "[University Policies](#)," and "[Student Responsibilities](#)"
- in the [Graduate and Professional Bulletin](#) under "Student Conduct Code."

Examples of academic dishonesty can be found in these sources. Faculty, graduate students, and undergraduates all have a responsibility to uphold the integrity of their scholarly work. As part of this responsibility faculty must deal promptly and appropriately with any credible suspected cases of academic dishonesty on the part of a student. This will include promptly investigating all suspected cases of academic dishonesty, and reporting all cases to the Office of Conflict Resolution and Student Conduct Services, when any penalty is imposed. Penalties may include a failing grade for a course, failing a preliminary or final examination, and/or dismissal from the University.

While executing their teaching, research, and course work, a student interacts with many persons, particularly closely with his/her adviser. This provides an opportunity for students to develop skills in working effectively with others that will be of importance throughout their future professional careers. Students are expected to conduct themselves in a courteous and professional manner in all their dealings with others, and particularly in their interactions with their adviser. Any problems involving discriminatory/rude behavior or sexual harassment will be dealt with promptly by the *SMSE Director*, who will take whatever appropriate actions are needed to correct the problem. Students may also seek guidance and/or advocacy from outside of SMSE by contacting the Student Resolution Center.

### **Obbligations of Students Supported on Graduate Research Assistantships (GRAs)**

Graduate assistantships are renewed periodically (typically on an annual basis) based on satisfactory progress toward degree completion. All graduate students are expected to diligently pursue their respective graduate programs. However, graduate assistants are classified as "at-will" employees by the State of Colorado, meaning that employment can be terminated at any time.

Most advisors arrange for meetings with their students on a regular basis to provide for review of research progress. Uniform progress is important both for the student's timely completion of thesis/technical report requirements for the M.S. or Ph.D. degrees, and also for formal reports normally

with the implicit understanding that successful completion of their programs involves contributions (such as data collection, analysis of data, summarizing results) leading to completed theses, reports, and publications. By its nature, research is a process requiring flexibility in the time devoted to achieve the desired end. This ongoing process often requires a time commitment well beyond a typical "nine-to-five" work schedule to complete the research objectives and publication requirements in a reasonable time. Reasonable times to graduation are two to three years for the M.S. programs and five years for a Ph.D. program.

A formal tracking of these research/thesis requirements is accomplished through course credits taken in MSE 699 or 799. The advisor/instructor has latitude to assign grades for these research credits over a period of semesters, with the full expectation that such research will be satisfactorily completed. An advisor/instructor has complete authority to retroactively change grades given in good faith to U or F if a student fails to satisfactorily complete thesis/report requirements at a later date. All graduate assistants are to be evaluated annually by their advisers, and any problems involving lack of satisfactory progress toward thesis/research requirements will be communicated to the *SMSE Director*, who will take whatever appropriate action is needed to correct the problems.

# GRADUATE PROGRAM REQUIREMENTS

Each MS and PhD program has different coursework, research credit, and degree completion requirements, which conform to requirements of the *Graduate School*.

## Grade point average requirements:

All PhD and MS-Thesis students must obtain at least a 3.3 average in the required core courses (box 1 below).

Additionally, ALL students are required to hold at least a 3.0 cumulative GPA to be in good standing with the graduate school. AND, ALL students must have a 3.0 in all courses where the final two digits of the course number are <x82. You can review these GPA's in your "graduate degree plan" under the graduate school tab in RamWeb (see below for screenshot with example).

Graduate Degree Plan

[summary](#) | [program of study \(GS6\)](#) | [committee](#) | [reports](#) | [assistantship](#) | [return](#)

CSUID: [REDACTED] Program: <b>PhD Materials Science &amp; Engrg</b> Program Code: <b>MSEN-PHD</b> Site: <b>Not Applicable</b> Site Code: <b>Not Applicable</b>	Academic Status: <b>Good Standing</b> Current Class Level: <b>None</b> Registration: <b>Not Enrolled</b> Inactive Term: [REDACTED]	Program Admit Term: <b>Fall</b> Program of Study Status: [REDACTED] Intent to Graduate Term: [REDACTED] Degree Status: [REDACTED]
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Summary

Program of Study (GS6) Credits Summary

Program of Study Status: **Approved on 10/17/2018**

Credits

Credit Type	Proposed
Transfer Credits	0
Credits from Master's Degree	0
CSU Credits Prior to Admission	0
Credits After Admission	76
<b>TOTAL</b>	<b>76</b>

Upper Level Credits

Credit Type	Proposed
500 Level and Above	76
Regular 500 Level and Above	26

Graduation Clearance Summary

Clearance Type	Status	Status Date	Comment
Degree Awarded Status	Awarded		
Preliminary Review for Graduation (GS25)	Reviewed		
Final Graduation Approval	Approved		

Requirements Summary

Requirement Type	Status
Applic. for Graduation (GS25)	Form Received
Current Semester Grades	Cleared
Doctoral Dissertation	Cleared
Doctoral Final Defense (GS24)	Cleared
Doctoral Prelim Exam (GS16)	Cleared
Doctoral Survey/UMI Forms	Cleared
Graduate Enrollment Req	Cleared
Thesis/Diss. Form (GS30)	Cleared

GPA Summary

GPA Type	GPA	Credits Completed	Quality Points	Description
Overall	3.9	10	39.001	Includes all 300 level or higher courses taken as a graduate student. It is based on admit term and does not include any courses that are taken prior to formal admission. Master's and Doctoral levels are separated.
Regular	3.9	10	39.001	Same as Overall GPA except that it only includes regular coursework. Regular coursework includes all courses where the final two digits of the course number are <x82.
Program of Study (GS6) Overall	3.76	25	94.006	Same as Overall GPA except that it only includes coursework in your Program of Study.
Program of Study (GS6) Regular	3.76	25	94.006	Same as Program of Study Overall GPA except that it only includes regular coursework (courses where the final two digits of the course number are <x82).

Coursework requirements are summarized in **Table 1** and described in detail in the text that follows.

	<i>M.S. (Plan A)</i>	<i>M.S. (Plan B)</i>	<i>PhD</i>
<b>Total Credits</b>	30	30	72
<b>Coursework</b>	15		
<b>Required MSE courses<sup>1</sup></b>	Credits	15 credits	16 Credits
<b>Specialty Courses (min)<sup>2</sup></b>	3 Credits	3 Credits	6 Credits
<b>Research, independent study, or electives</b>	12 Credits (MSE 699, 695 or electives)	12 credits of electives	48 credits (MSE 799, 795 or electives)
<b>Research Document/Exam</b>	Thesis and Defense	Paper (GS-40) and Final Seminar	Dissertation and Defense

<sup>1</sup> See Box 1 for a list of the MSE core courses. <sup>2</sup> See Box 2 for a list of specialty courses.

**Box 1** (MSE core courses: min GPA required for courses in **this** box is a 3.3 (PhD & MS-thesis students))

Core Course Number	Core Course Title/Description	MS A Credits	MS B Credits	PhD Credits
MSE 501	Tech Transfer	1	1	1
MSE 502 A	Scatter	1	1	1
MSE 502 B	Computational	1	1	1
MSE 502 C, D, E , <b>or F</b>	Microscopy, Spectroscopy, Bulk, or Experimental	1	1	1
MSE 503	Mechanical Behavior of Materials	3	3	3
MSE 504	Thermodynamics	3	3	3
MSE 523	Electronic Properties of Materials	3	3	3
MSE 793	Professional Development	2	2	3

**Box 2** (MSE approved specialty courses)

Course	Cr	Course	Cr
BIOM 592. Seminar Credits.	3	MATH 560. Linear Algebra	3
CBE 503. Transport Phenomena Fundamentals.	3	MATH 561. Numerical Analysis I	4
CBE 514. Polymer Science and Engineering.	3	MSE 481A4. Green Engineering: Materials and Environment	3
CHEM 511. Solid State Chemistry.	3	MECH 525/*BIOM 525. Cell & Tissue Engineering	3
CHEM 515. Polymer Chemistry.	3	MECH 530. Advanced Composite Materials	3
CHEM 517. Chemistry of Electronic Materials.	3	MECH 531/BIOM 531. Materials Engineering	3
CHEM 550A. Materials Chemistry, Hard Materials.	1	MECH 532/BIOM 532. Materials Issues in Mechanical Design	3
CHEM 550B. Materials Chemistry, Soft Materials.	1	MECH 535. Mechanics of Composite Materials	3
CHEM 550C. Materials Chemistry, Nanomaterials.	1	MECH 537. Processing of Polymer Composites	3

CHEM 567. Crystallographic Computation.	1	MECH 569/ECE 569. Micro-Electro-Mechanical Devices	3
CHEM 569. Chemical Crystallography	3	MECH 570/ BIOM 570 Bioengineering	3
CHEM 577. Surface Chemistry.	3	MECH 573/BIOM 573. Structure & Function of Biomaterials	3
CIVE 560. Advanced Mechanics of Materials.	3	MECH 628. Applied Fracture Mechanics	3
CIVE 565. Finite Element Method.	3	MSE 465/GES 465. Sustainable Strategies for E-Waste Management	3
CIVE 662. Foundations of Solid Mechanics.	3	MSE 505. Kinetics	3
CIVE 664. Mechanics of Fatigue & Fracture.	3	MSE 631. Defects in Crystals	3
ECE 505. Nanostructures: Fundamentals & Applications	3	MSE 651. Special Topics	3
*ECE 569/*MECH 569. Micro-Electro-Mechanical Devices	3	PH 531. Introductory Solid State Physics	3
ECE 673. Thin Film Growth	3	PH 631. Solid State Physics	3
MATH 535. Foundations of Applied Mathematics	3	PH 731. Condensed Matter Theory	3
MATH 545. Partial Differential Equations I	3	GRAD 544. Ethical Conduct of Research	1
MATH 550/ENGR 550. Numerical Methods in Science & Eng	3	<b>Check SMSE &amp; collaborating department websites or registration pages for new courses. Courses not on this list require approval from SMSE Associate Director.</b>	

Students should continue to check the MSE website for updated MSE specialty course list (<https://www.research.colostate.edu/smse/curriculum/>) or contact the program manager about additional/new courses that may count towards your degree.

Additional course information can be found in the CSU course catalog under Materials Science Engineering: <https://catalog.colostate.edu/general-catalog/courses-az/mse/>

To petition for transfer credits or course substitution, a student must turn in the **Petition for Substitution of Classes form**. If a student wants to substitute a course they plan to take, the student must submit this form *prior* to taking the course they wish to substitute.

In special cases, the graduate academic committee will review a petition submitted after the student has taken a course they wish to substitute. Petitions should be submitted to the Program Manager at [Carolina.Bañuelos@colostate.edu](mailto:Carolina.Bañuelos@colostate.edu)

## Master of Science Degree Plan B (Coursework and final paper/project option)

### Credit and Course Requirements

A minimum of 30 credits of coursework must be approved for graduate credit by the student's graduate committee. 24 of the 30 credits must be earned at Colorado State University. 21 of the credits must be earned after admission to the Graduate School. At least 16 credits at Colorado State University must be taken in courses numbered 500 or above. At least 12 of these 16 credits must be in regular (lecture/laboratory) courses. SMSE M.S. Plan B students must satisfactorily complete 15 credits of the *MSE core courses* (see Box 1) or their equivalents with at least a 3.0 GPA. M.S. Plan B students must also take a minimum of 15 elective credits. At least 3 of these elective credits must be from among the *MSE specialty courses* (see Box 2).

### Other Requirements

**The Plan B degree requires both a GS-24 (Report of Final Examination Results) and a GS-40 (non-Thesis Plan B Master's Requirement).**

The Plan B degree does not require a thesis. Plan B students are required to pass a final seminar (the final examination- GS24 requirement) and submit a paper (GS-40 requirement). The final seminar will be oral and presented to the student's committee. Before the start of the intended graduation semester, the committee and student must meet to discuss the nature and expectations of the seminar. At the discretion of the committee, a written research report/paper may be required. The results of the research should be reported and interpreted at a level appropriate to the degree program. M.S. students should demonstrate that they have substantial expertise in materials science engineering.

Guidelines for seminar:

The following are guidelines, not intended to be an absolute requirement. The student and committee should agree on requirements by the beginning of their final exam semester.

- 20-minute presentation from student about their written paper (details below)
- 30-minute Q/A session from committee

Guidelines for written paper:

The following are guidelines, not intended to be an absolute requirement. The student and committee should agree on requirements by the beginning of their final exam semester. Paper topics include:

- If you worked on a project at CSU (or at work), discuss the project, its relevance to the MSE field, and how you applied coursework knowledge to your project
- Select one area (material) of expertise. Apply knowledge from your coursework to that area and discuss the present and future implications of this material in the MSE field
- Propose a topic that is relevant to your MSE degree and receive approval from the associate director

The student must distribute to his/her committee a written research report at least one week before the exam. The report should be a detailed and complete description of the selected topic. The report should contain a clear explanation of the topic/issue presented, relevant background (concise literature review that provides context for their contributions to the field), its importance or impact, status of topic to date, future research suggestions, plus references. Relevant display items, such as diagrams of apparatus designed and/or built by the student, figures, tables, data, schemes, etc. should be prepared in a professional manner and used to effectively communicate necessary information.

As a guideline, the report should generally be approximately 10 to 15 double-spaced pages in length (text), exclusive of any references or display items (figures, tables, schemes, etc.). The research report written by the student must reflect their own work; no proofreading or editing should be done by any faculty member prior to the exam. It is expected that a student may wish to show their adviser the report to get feedback on format. However, it is important to recognize that the way the report is put together is a measure of a student's thought process and an important element of evaluation, and that the adviser must not interfere.

Upon completion of the final examination it is the student's responsibility to electronically submit the GS24 (Report of Final Examination Results) and the GS-40 (Plan B requirement) to the Graduate School. This form must be received to the Graduate School within 2 working days after the examination.

The GS-24 final examination for the M.S. Plan B degree is a seminar. See section entitled "more information on final exams" for details on final exam/seminar (GS-24) completion. *The student must meet with their committee and establish the expectations of their final examination with their committee before the start of their intended graduation semester.* This agreement must include a plan for graduation and timeline, a draft of which must be made prior to the initial meeting. GS-24 should align with the GS-40 paper (see below for details).

Eg. If student plans to graduate in FALL 2021, student needs to meet with committee *before* the first day of classes of FALL 2021.

The GS-40 must be submitted *after* a paper is submitted to the program manager or associate director (Plan B advisor). The paper should be 10-15 pages (excluding citations page) and must be about one of the following:

- If you worked on a project at CSU (or at work), discuss the project, its relevance to the MSE field, and how you applied coursework knowledge to your project
- Select one area (material) of expertise. Apply knowledge from your coursework to that area and discuss the present and future implications of this material in the MSE field
- Propose a topic that is relevant to your MSE degree and receive approval from the associate director

Your GS-24 (final seminar) should be about your written paper.

#### **Clearance to Graduate:**

Graduating students must check their "Graduate Degree Plan" in RAMweb for discrepancies or comments. If you have discrepancies in your degree plan (GS-6) and the courses you took, you must submit a GS52 Discrepancy Clearance Form. [Sample GS-52 here](#). You can check your graduate degree plan in RamWeb, under graduate school tab.

*Any issues found there must be resolved before the student will be cleared for graduation by the Graduate School.*

#### **Steps to your masters degree on the grad school website:**

<http://graduateschool.colostate.edu/for-current-students/completing-your-degree/steps-to-your-masters-degree/>

#### **Graduation deadlines:**

<https://graduateschool.colostate.edu/deadline-dates/>

## Transferring from the MS-Plan B into the MS-Plan A or PhD

If you start as a MS Plan B student in SMSE and want to transfer into the MS-Plan A-Thesis or the PhD degree, you must: complete at least one semester in SMSE, be in good academic standing (3.0 GPA or above), and find a faculty advisor who is committed to funding you and your research. Faculty who can be an advisor for the MS-thesis or PhD degrees are **core faculty**- listed on pages 5-7.

After meeting these criteria, contact the program manager about the anticipated change. You will then be advised to fill out the GS-7: Request for Change of Department and/or Degree Program form on RamWeb. [A sample GS-7 can be found here.](#)

## Transferring from the PhD to MS-Plan A or MS-Plan B.

If you are in the PhD and decide to Master out, be sure to communicate with your faculty advisor. Once you and your faculty advisor are in agreement about the program you are transferring into, contact the program manager about the anticipated change. You will then be advised to fill out the GS-7: Request for Change of Department and/or Degree Program form on RamWeb. [A sample GS-7 can be found here.](#)

## Master of Science Degree Plan A (Thesis option)

### Credit and course requirements

A minimum of 30 credits of course work and research must be approved for graduate credit by the student's graduate committee. 24 of the 30 credits must be earned at Colorado State University. 21 of the credits must be earned after admission to the Graduate School. At least 16 credits at Colorado State University must be taken in courses numbered 500 or above, including thesis credits. At least 12 of these 16 credits must be in regular (lecture/laboratory) courses.

SMSE M.S. Plan A students must satisfactorily complete 15 credits of the *MSE core courses* (see Box 1) or their equivalents, and at least 3 additional credits of *MSE specialty courses* (see Box 2). **A 3.3 GPA minimum in the *MSE core courses* must be earned and overall 3.0.** A maximum of 12 thesis research credits (MSE 699) may be counted toward the minimum degree requirements.

M.S. Plan A students must also take the *Responsible Conduct of Research* (1 credit course) or complete the online training. This 1 credit may count toward the 12 credit research maximum. More information found here: <https://www.research.colostate.edu/ricro/rcr/>. Upon completion of the training, students must send their certificate of completion to the program manager to ensure this is added to the student's file.

### Research and Thesis

An acceptable thesis must be submitted to and approved by the student's graduate committee. See the section below entitled "Research Documents and Examinations" for more information. It is expected (not required) that the student's M.S. research will result in at least one peer-reviewed publication or other high caliber technical publication. It is the student's responsibility to check with their faculty advisor and find out if submission to a journal or journal publication (or both) is required for their research group.

**The Thesis Defense** (also known as the final examination- GS24 form) is presented at the end of the master's degree program. It is most often an oral presentation describing the research and findings reported in the thesis. The defense is open to all SMSE faculty, staff, and students

and includes an open question period for all in attendance as well as a private question period for the committee.

**Scheduling the Thesis Defense:** SMSE has set a deadline two weeks prior to Graduate School deadlines to avoid last minute emergencies that could prevent a student from graduating. It is the student's responsibility to contact the SMSE Program Manager to schedule a room for the defense, obtain a template for the announcement, submit the announcement with an abstract, and submit an electronic draft of the thesis to be shared with their committee. Students should begin planning for the defense and thesis submission a minimum of three weeks prior to the defense and a minimum of four weeks prior to Graduate School deadlines.

#### **Suggested Timeline:**

**A. Four weeks prior to the scheduled defense, student must:**

1. Confirm a date and time for their defense with their graduate committee

**B. Three weeks prior to the defense students must:**

1. Contact the SMSE program manager to request a room reservation for the defense and the template for their thesis defense announcement
2. Edit the announcement template (by filling in the abstract and time/date/room info) and email it to the program manager for distribution and advertising
3. Email a draft of the thesis (.pdf format) to their graduate committee

**C. Other considerations two weeks prior to the Graduate School deadline for Thesis & Dissertation Submission:**

1. The final examination/defense should be conducted at least two weeks prior to the [Graduate School deadline for Thesis & Dissertation Submission](#) to allow for unexpected delays and requested thesis revisions.
2. If circumstances prevent a student from meeting department deadlines, the graduate program manager should be informed by the student's advisor so that steps may be taken to ensure that the [Graduate School deadlines](#) and requirements are met for the intended graduation term.

**On the day of the defense:** Upon request, the student's advisor will have the student file from the SMSE program manager. Student files are not released to students.

As soon as defense is finished, *the student must submit the **GS-24, Report of Final Examination Results** form in RamWeb. After the student submits the form electronically, it goes to the program manager, advisor and committee members.*

**The signed GS24 form must be electronically completed with all signatures within 2 business days of the examination.** Check the graduate school website for GS24 deadline submissions.

**Thesis Submission:** The student submits the Thesis/Dissertation Submission Form (**GS30**) to the Graduate School, after which the Graduate School provides directions for electronic submission. Directions may also be found at: <http://graduateschool.colostate.edu/current-students/thesisdissertation/index.aspx>

#### **Clearance to Graduate:**

In addition to submission to the Graduate School, the final thesis also must be emailed (pdf preferred) to the SMSE program manager for archiving before the student will be cleared for graduation by the department.

Graduating students must check their “Graduate Degree Plan” in RAMweb for discrepancies or comments. If you have discrepancies in your degree plan (GS-6) and the courses you took, you must submit a GS52 Discrepancy Clearance Form. [Sample GS-52 here](#). You can check your graduate degree plan in RamWeb, under graduate school tab.

*Any issues found there must be resolved before the student will be cleared for graduation by the Graduate School.*

**Steps to your masters degree on the grad school website:**

<http://graduateschool.colostate.edu/for-current-students/completing-your-degree/steps-to-your-masters-degree/>

**Graduation deadlines:**

<https://graduateschool.colostate.edu/deadline-dates/>

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## Doctorate of Philosophy Degree

### ***Credit and Course Requirements***

A minimum of 72 credits *beyond* the bachelor's degree must be approved for credit by the student's graduate committee. A master's degree may be accepted for a maximum of 30 credits. This means the PhD student still needs to obtain 42 credits during their time at CSU (coursework or research). The number of these credits should be determined by an evaluation of student's master's transcript. This evaluation will be completed by the graduate school and is done when the student submits their GS-6 form.

A minimum of 32 credits must be earned at CSU (residential credits) *after* admission to the doctoral program.

For students who complete an MSE M.S. degree at Colorado State and are continuously enrolled, all coursework credits earned in their M.S. program may be applied towards the Ph.D. credit requirements, but only 30 credits total will transfer into the PhD. A minimum of 40 semester credits beyond the bachelor's degree must be at or above the 500 level. More than 49 credits of 799 are allowed during a student's tenure at CSU, but only 49 MSE 799 research credits can count toward the 72 credit minimum.

SMSE Ph.D. students must satisfactorily complete 17 credits of the *MSE core courses* (see Box 1) or their equivalents, and at least six additional credits of *specialty courses* (see Box 2). **A 3.3 GPA minimum in the *MSE core courses* must be earned** and an overall GPA of 3.0.

PhD students must take the ***Responsible Conduct of Research*** (1 credit course) or complete the online training. More information found here: <https://www.research.colostate.edu/ricro/rcr/>. Upon completion of the training, students must send their certificate of completion to the program manager to ensure this is added to the student's file.

## Ph.D. Student Annual Evaluation

### Purpose:

The annual student evaluation assists students and advisors in planning for timely completion of program requirements, provides consistent feedback to students as they proceed through the program, alerts students and advisors to problems, and provides students and advisors the opportunity to develop effective approaches for addressing those problems. Evaluation forms are available on the SMSE website and a link is provided below. The PhD evaluation is required each year in place of oral or comprehensive exams.

### Process:

Evaluations should be completed during the spring semester. SMSE Ph.D. students are **required** to meet with their graduate program committee for a presentation and discussion of the student's degree plan. **If you are a first year PhD student, this means you must establish your committee as soon as your second semester starts.** Section 1 of the annual MSE evaluation form should be completed by the student and taken for committee review and signatures at the meeting. Once section 1 is completed, the student is advised to email the copy to their committee members prior to the meeting. This ensures faculty has time to prepare questions regarding the student's progress ahead of time.

This presentation and discussion should be about an hour and should cover:

1. The student's academic background and interests, and how any background deficiencies will be addressed through coursework or other professional development activities.
2. The student's performance in coursework.
3. The student's research topic and its place within the field of MSE (even if topic is not set, must have introductory level of topic being explored).
4. A preliminary timeline for completion of the degree.

The advisor and student should agree on a presentation format. **This meeting is not a formal examination of the student, but should be treated as such.** It is important for the committee and the student to establish an understanding of the boundaries of the student's background and capabilities early. This will facilitate the committee's ability to contribute advice, expertise, and recommendations throughout the rest of the program of study.

In the meeting, the committee evaluates the breadth and depth of the student's knowledge of MSE core topics to identify knowledge and background gaps. The outcome of this discussion may include binding recommendations of additional coursework requirements to satisfy potential gaps in the student's background.

Please review the annual evaluation form for detailed information and procedures. This can be found on the SMSE website (<https://www.research.colostate.edu/SMSE/graduate-student-resources/>) or by requesting a copy from the SMSE program manager.

*An annual evaluation meeting with the entire committee is required at the end of every academic year (spring semester). The completed and signed form must be submitted to the SMSE Program Manager By **April 30th**.*

**>>> IMPORTANT: We will not submit your summer assignment (GRA or hourly) if we do not have your PhD eval.**

**You are not required to submit a PhD evaluation if:**

- You are graduating in spring or summer AND submit the GS-25 (application for graduation)

**Special notes:**

- If you complete your preliminary exam during the fall, you still need to submit a PhD eval in the spring. Please plan accordingly.
- If you begin the PhD during a spring semester, you can complete the first evaluation with just your advisor

## **Ph.D. Preliminary Examination – GS-16 (Proposal Defense)**

*The following is intended to be a guide for your preliminary exam. Students must communicate with their faculty advisor to ensure their prelim satisfies the advisor and committee requirements and expectations.*

**Purpose:** The purpose of the preliminary examination is to determine the candidate's background knowledge in the proposed dissertation area and to determine the adequacy of the current research plan to develop a satisfactory dissertation. The exam is based on the candidate's written research proposal that contains a detailed survey of the supporting literature, preliminary data, and a summarized research plan. Upon successful completion of the preliminary exam, the graduate committee and student will agree to a final research plan that includes clear expectations for the content of the dissertation. The Preliminary Examination is generally closed to the student's graduate committee, but an advisor/student may elect to open up the presentation portion of the exam.

The preliminary exam should be completed at a time when the student and the advisor are confident that the student is ready to demonstrate subject area expertise and research competency per the guidelines listed below. **The Graduate School requires that the preliminary exam be completed no less than two terms before the final exam.** (See [Graduate and Professional Bulletin](#) for more info) Therefore, a student taking the preliminary exam after the first day of classes for the spring term (but before the end of the spring term), cannot take the final exam before the first day of classes of the fall term. The term during which the exam is taken counts as the first term; spring, summer, and fall each count as a term.

The goal of this exam is to satisfy the graduate committee, SMSE, and the Graduate School that a graduate student has the necessary core knowledge and the potential to carry out independent research to successfully complete a Ph.D. in materials science and engineering. To make this determination, the graduate committee will consider the background of the student, their performance in their coursework to date, and their performance on both the written and oral components of the exam. In judging the performance of the student on the written and oral components of the exam, several factors will be considered. Specifically, the committee will judge whether the student:

1. has an acceptable mastery of MSE core topics, equivalent to the content of the MSE core courses;
2. has an acceptable understanding of the literature in their research area
3. has an ability to formulate meaningful research objectives that will make a significant contribution to their field
4. Has a plan to conduct research that addresses those objectives, and interpret the results of their research
5. has made tangible progress on their research problem.

Satisfactory performance in each of these requirements is necessary to pass the preliminary examination. For item 5 above, tangible progress may include, but is not limited to: detailed literature surveys pertinent to the project, compilation and analysis of relevant data published by other investigators, learning important techniques, instrumentation, or theory, clear presentation of the work to be carried out, and demonstration of the novelty of the work.

Tangible progress may further include published or publishable results, building of an apparatus, progress on multi-step processes, collection of data, progress on writing computer code for simulation or data analysis, development of an analytical technique, etc. Tangible progress is not to be interpreted solely as publishable results: level of effort, persistence, and determination are the key to this criterion. Students who have accomplished much research, but who have a shallow depth of understanding will not pass; students who have a solid academic knowledge, but who have accomplished little or no research will not pass.

**The student must distribute to their committee a written research report at least two weeks before the exam.** The report should be a detailed and complete description of the research that the student has conducted and intends to conduct to complete the research component of their degree. The report should contain relevant background (concise literature review that provides context for their contributions to the field), status of research conducted to date, planned future research, a timeline for completion of the work, and references. Relevant display items, such as diagrams of apparatus designed and/or built by the student, figures, tables, data, schemes, etc. should be prepared in a professional manner and used to effectively communicate necessary information.

As a guideline, the report should generally be approximately 15 to 20 double-spaced pages in length (text), exclusive of any references or display items (figures, tables, schemes, etc.). This is a guideline, not intended to be an absolute length requirement. The research report written by the student must reflect their own work; no proofreading or editing should be done by any faculty member prior to the exam. Students are encouraged to seek advice from their adviser and committee members on scope and overall format, but not on specific content and composition. It is important to recognize that the way the report is put together is a measure of a student's thought process and is therefore an important element of evaluation; the advisor must not interfere by editing the document.

**The student is responsible for submitting the GS-16 form** (Report of Preliminary Examination) electronically after completion of the exam. *More information on next page.*

At the exam, the student will first present their current research and research plans in a 30-45-minute seminar before his/her committee. The remainder of the exam will consist of a question-and-answer period focusing on basic MSE knowledge and on the student's research.

If a student does not pass the preliminary examination, the committee may allow the student to retake the exam by scoring the exam as a fail. Reexaminations will only be allowed if the committee feels that the student has a significant potential to pass the reexamination. If the committee permits a reexamination, they will provide guidance to the student on shortcomings that should be addressed, and the reexamination must be completed no sooner than two months and no later than four months from the date of the original exam. For the reexamination, the student may be required to complete further work. In some cases the committee will identify specific weaknesses in the student's performance. These will be communicated to the student in a timely fashion so that deficiencies can be rectified for the reexamination. Failure in a single reexamination will result in dismissal from the Graduate School, which is the same result as a recommendation of termination on an initial examination. The student has a maximum of two opportunities to pass the preliminary exam.. Students passing the preliminary examination or reexamination, will continue in the Ph.D. program, and will remain in the program until

submission and defense of the dissertation, provided that satisfactory progress is maintained.

**Results: Must be reported by submitting the [GS-16 form online](#), accessible on RamWeb through the graduate school tab. This form must be submitted as soon as the exam is completed as it is due to the graduate school within 2 business days of its completion.**

Once the GS16 is submitted by the student, the program coordinator will review and submit. Then, each committee member responds electronically by selecting one of the following:

Pass: recommend the student advance to Ph.D. candidacy and accept the research plan as agreed to by the committee during the exam

Fail: Recommend that the student take the preliminary examination again, if the student's research plan or background knowledge is unacceptable but the committee feels that the potential exists for satisfactory performance

**Scheduling**: Prior to planning the preliminary exam, students should be actively conducting research with a faculty advisor, have the graduate committee confirmed, and have the GS6 form (Program of Study) form on file with the Graduate School. The preliminary exam is conducted after an extensive literature review and collection of preliminary data which leads to a "working title" or definition of the research project and a written research proposal.

*The preliminary defense is required a minimum of two semesters prior to the final dissertation defense.*

#### **Suggested Timeline:**

Four weeks prior to the preliminary exam:

1. Confirm a date and time for your preliminary exam with your graduate committee

Two weeks prior to the preliminary exam:

1. Contact the program manager to schedule the room
2. Email the written research material to each member of the committee.

**On the day of the prelim exam**: the student's advisor can request a student file from the program manager. The file will contain past evaluations and other forms that may be pertinent to the student's evaluation during the prelim.

**The electronic GS16 form must reach the Graduate School with all appropriate signatures within 2 business days following the examination.**

## Doctor of Philosophy Dissertation Defense (Final Exam)

*The following is intended to be a guide for your preliminary exam. Students must communicate with their faculty advisor to ensure their prelim satisfies the advisor and committee requirements and expectations.*

**Purpose:** The purpose of the Ph.D. dissertation defense (also known as the final exam) is to allow faculty members and the public to critically examine and comment on the dissertation work and its significance and contribution to the research area and literature. Final examinations are open to the public and are conducted in a formal and professional manner.

**Scheduling:** SMSE has set deadlines *two weeks prior* to Graduate School deadlines to avoid last minute emergencies that could prevent a student from graduating. *It is the student's responsibility* to contact the program manager to schedule a room for the defense, obtain a template for the announcement, submit the announcement with abstract, and submit an electronic draft of the dissertation to the department to be shared with SMSE faculty and graduate students.

### **Suggested Timeline:**

#### **A. Four to Six weeks prior to the defense:**

1. Set up the date and time of your defense with your committee
2. Provide each committee member with a preliminary copy of the dissertation for review. Common courtesy to both the candidate and committee dictates that committee members be given two weeks to reach a decision on the acceptability of a student's dissertation.
3. During this time, committees may request meetings with the candidate to discuss the dissertation and suggest revisions. After this review period, with majority approval by the committee, the candidate may schedule the dissertation defense. In the event that the candidate does not receive approval to schedule the public defense, the committee must make further suggestions to the candidate and set up a follow up meeting.

#### **B. Two weeks prior to the defense students must:**

1. Contact the program manager to request a room reservation and provide you with a template for your announcement.
2. Edit the announcement with the abstract, date, time and room number.  
Email edited template to program manager for distribution and advertising.
4. Email a draft of the dissertation (pdf format) to the program manager

#### **C. Two weeks prior to the Graduate School deadline for Dissertation Submission**

1. The final examination/defense should be conducted at least two weeks prior to the Graduate School thesis/dissertation submission deadline to allow for unexpected delays.
2. If circumstances prevent a student from meeting department deadlines, the program manager should be informed by the student's advisor so that steps may be taken to ensure that the Graduate School deadlines and requirements are met for the intended graduation term.

Graduate School Deadlines: <http://graduateschool.colostate.edu/policies-and-procedures/deadlinedates/>

**Procedure:** To begin the presentation, the candidate is introduced by the advisor. The candidate then presents the findings of the doctoral research to the committee and to the public. The presentation is concluded with a public question and answer period, which is followed by a closed session where the committee members will decide whether to accept or reject the dissertation.

**On the day of the defense:** The student's advisor is required to pick up the student file from the SMSE program manager office. The file will contain the **GS24** form (Report of Examination Results) for signatures by the committee and the department head. Student files are not released to students. The student also may choose to bring the completed Thesis/Dissertation Submission Form to the defense as a matter of convenience, however, the committee reserves the right to withhold signatures until they have seen the final dissertation. This form must also be signed by the department head.

**Results: Must be reported by submitting the [GS-24](#) form online**, accessible on RamWeb through the graduate school tab. This form must be submitted as soon as the exam is completed as it is due to the graduate school within 2 business days of its completion.

Once the GS-24 is submitted by the student, the program coordinator will review and submit. Then, each committee member responds electronically by selecting one of the following:

Pass: recommend the student advance to Ph.D. candidacy and accept the research plan as agreed to by the committee during the exam

Fail: Recommend that the student take the preliminary examination again, if the student's research plan or background knowledge is unacceptable but the committee feels that the potential exists for satisfactory performance

**Dissertation Submission:** The student submits the Thesis/Dissertation Submission Form ([GS30](#)) to the Graduate School, after which the Graduate School provides directions for electronic submission. Part of a complete GS30 is completion of the **Survey of Earned Doctorates**: PhD graduates must complete the Survey of Earned Doctorates on the NSF website (<https://sedncses.org/login.aspx?redirect=true>) and submit their confirmation certificate with the Thesis/Dissertation Submission Form.

Directions may also be found at: <http://graduateschool.colostate.edu/wp-content/uploads/2014/07/GS30-Procedures.pdf>

**Clearance to Graduate:** In addition to submission to the Graduate School, the final dissertation also must be emailed (pdf preferred) to the SMSE Program Manager for archiving before the student will be cleared for graduation (GS25B form) by the department. Graduating students also should check their "Graduate Degree Plan" in RAMweb for discrepancies or comments. Any issues found there must be resolved before the student will be cleared for graduation by the Graduate School.

**Steps to your PhD Degree can also be found in the graduate school website:**  
<http://graduateschool.colostate.edu/for-current-students/completing-your-degree/steps-to-your-phd-degree/>

**Graduation deadlines:**  
<https://graduateschool.colostate.edu/deadline-dates/>

## SUGGESTED PROGRAM OF STUDY SYNOPSIS

<b>Master of Science Coursework (Plan B) Degree: Synopsis of Procedures Leading to Degree Completion</b>	
1. Meet with program manager or associate director to plan student's graduate program	By October 15th of first semester
2. Complete and turn in Program of Study and form committee (GS6)	Before midterms of third semester (before October 1 or March 1). OR before end of 2 <sup>nd</sup> semester if plan is to graduate end of third semester. Refer to published deadlines on graduate school website (bottom of this table).
3. Meeting with program manager or associate director to review student's graduate program	By end of second semester
4. Meet with committee to decide on "final exam (GS24)" presentation format and expectations	Before intended graduation semester begins
5. Turn in: Final Examination form (GS24) Non-Thesis Plan B Master's (GS-40) Requirement Application for Graduation (GS25)	Refer to published deadlines from Graduate School Website
6. Graduation	
<b>GS Forms link:</b> <a href="https://graduateschool.colostate.edu/forms/">https://graduateschool.colostate.edu/forms/</a>	
<b>GS Deadlines link:</b> <a href="https://graduateschool.colostate.edu/deadline-dates/">https://graduateschool.colostate.edu/deadline-dates/</a>	

<b>Master of Science Thesis Option (Plan A) Degree: Synopsis of Procedures Leading to Degree Completion</b>	
1. Selection of advisor	By end of second semester
2. Selection of other members of committee	By end of second semester
3. Meeting with graduate advisor committee to begin planning student's graduate program	By end of second semester/as soon as possible
4. Complete and turn in Program of Study Form (GS6)	By middle of third semester. Refer to published deadlines on graduate school website.
5. Defense of thesis proposal	During 3 <sup>rd</sup> semester/as soon as possible.
6. Application for Graduation (GS25)	Refer to published deadlines from Graduate School Website
7. Schedule Thesis Defense and distribute announcement	2-3 weeks before thesis date
8. Thesis defense (Final Exam)	During last semester Refer to published deadlines from Graduate School Website
9. Report of Final Exam Results (GS24)	Within 2 days of thesis defense
10. Submit signed thesis submission form to Graduate School prior to submitting the electronic thesis	Refer to published deadlines from Graduate School website
11. Provide department with an electronic copy of thesis	Before graduation
12. Graduation	
<b>GS Forms link:</b> <a href="https://graduateschool.colostate.edu/forms/">https://graduateschool.colostate.edu/forms/</a>	
<b>GS Deadlines link:</b> <a href="https://graduateschool.colostate.edu/deadline-dates/">https://graduateschool.colostate.edu/deadline-dates/</a>	

**Doctor of Philosophy (PhD) Degree:  
Synopsis of Procedures Leading to Degree**

1. Selection of advisor	By end of second semester
2. Submit year one SMSE Evaluation	Due April 30 <sup>th</sup> of every SP semester.
3. Selection of other members of committee	By end of third semester (for GS6 form)
4. Meeting with graduate advisor committee to begin planning student's graduate program	By end of third semester/as soon as possible
5. Complete and turn in Program of Study Form (GS-6)	Before midterms of third semester (end of second semester is best). Refer to published deadlines from graduate school website.
6. Submit year two SMSE Evaluation	Due April 30 <sup>th</sup> of every SP semester.
7. Submit year three of SMSE Evaluation**	Due April 30 <sup>th</sup> of every SP semester.
8. Defense of Dissertation proposal (Prelim Exam- GS-16)	As early as 7 <sup>th</sup> semester. Must be at least one semester between final dissertation defense (final exam). Must tell program manager in order to have student file for advisor.
9. Application for Graduation (GS25)	Refer to published deadlines from Graduate School Website
10. Schedule Dissertation Defense and distribute announcement	4-6 weeks before dissertation date
11. Dissertation defense (Final Exam- GS-24)	During last semester Refer to published deadlines from Graduate School Website
12. Report of Final Exam Results (GS24)	Within 2 days of dissertation defense
13. Submit signed thesis submission form to Graduate School prior to submitting the electronic thesis	Refer to published deadlines from Graduate School website
14. Provide department with an electronic copy of dissertation	Before graduation
15. Graduation	

**GS Forms link:** <https://graduateschool.colostate.edu/forms/>

**GS Deadlines link:** <https://graduateschool.colostate.edu/deadline-dates/>

\*\*PhD Students must submit a yearly evaluation each Spring semester. Evaluation is not required if the student is defending their dissertation that spring or summer semester AND a GS-25 was submitted.

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## DISSEMINATION OF RESEARCH, PUBLICATIONS, AND ATTENDANCE AT PROFESSIONAL MEETINGS

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It is the responsibility of every graduate student, with the assistance of their adviser, to write and pursue publication of thesis or dissertation research findings in peer-reviewed journals, proceedings, or other appropriate formats. While there are no set requirements, the expectation is that a master's thesis will yield at least one refereed publication and a Ph.D. dissertation will yield at least three refereed publications. This publication effort will be performed as part of the normal program of study.

It is desirable for graduate students to participate in professional meetings. Funding for travel to meetings may be available through research grants. Some professional societies also offer travel grants and awards to students. Students are encouraged to apply for travel grants when they are available through CSU departments (including SMSE), The Graduate Student Council, and the Graduate School.

## TRAVEL GRANTS & HOW TO TRAVEL AS A CSU STUDENT

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### SMSE Travel Grant

MSE students have the opportunity to apply for travel funds for academic purposes (conferences, trainings, etc.). Grants are limited in quantity and \$250 each. The grant can be applied for once per Academic Year (AY).

### Application/Grant information:

- Student must be enrolled in MSE degree program and in good standing at the time of application and at the time of travel (PhD, MS-A, MS-B, and AMP students qualify)
- Faculty advisor must support the travel
- Requested funds must be used on travel expenses (airfare, per diem, accommodations, transportation, etc.)
- One award per student per academic year
- Priority will be given to first time applicants
- Grant comes in form of reimbursement or direct payment of a travel expense
- MUST apply before traveling. Grants will not be awarded post travel.

**Application Submission:** Email application to Annika ([annika.sundsten@colostate.edu](mailto:annika.sundsten@colostate.edu)). For details and form, go to SMSE Student Teams Channel under [Travel](#)

\*\*\*Application can be found on the SMSE Website, under the current students tab – Grad Student Resources – SMSE Travel Grant, and on SMSE Student Teams Channel [Travel](#).

### SMSE Travel Policies and Tips

- SMSE students can find all the travel documents on the Student Teams Channel, in the Travel folder (linked above).
- *Please keep in mind that your advisor may have limited funds and will only pay for certain expenses. Discuss ahead of travel booking, and indicate funding source (account #) as well as expected expenses you will claim.*
- The student's advisor must approve the travel before starting the travel process.

## 1<sup>st</sup> Time Travelers

Before traveling for the first time, **you must fill out the TEM Form** (see Document 00. In the Teams Channel). This will ask for basic contact information and is needed to get you into the CSU system allowing you to travel with CSU.

### Travel Process- Each time you travel:

1. **Fill out the SMSE Student Travel Form (see document 02. In the Teams Channel) and submit it to Annika Sundstén prior to booking airfare or other arrangements.** Your advisor must be cc'd on this email to let SMSE know that the travel has been approved by them. This should be done at least two weeks prior to departure, though further advance is recommended to give adequate time to book economy airfare. Annika will submit a TRAVEL AUTHORIZATION on your behalf.
2. **Within 5 business days of your return**, submit all needed receipts to Annika. Please see REIMBURSEMENT document in the Teams Channel for more information. Annika will submit a TRAVEL REIMBURSEMENT on your behalf.

## International Travel

**International travel has 4 steps in addition to the SMSE Student Travel form, and they need to be approved before we can submit the Travel Authorization.**

It is recommended to complete these processes 60 days or earlier prior to departure. For the detailed process please see the document "Additional Steps for International Travel" in the Teams Channel.

### How to Book Airfare, Hotel, Transportation

- Airfare – CSU works directly with a travel agent, New Horizons Travel, to book airfare. This is the preferred method, and CSU can directly pay for your ticket. If for some reason you need to book your own ticket, reimbursement may take 2-4 weeks after your return, and after all receipts are submitted.
- Other Expenses – Hotels, rental cars, shuttles, Uber/Lyft/taxis, meals, and other expenses will be reimbursed by receipt after your return.
- Rental Cars – Please use STATE APPROVED CAR RENTAL AGENCIES provided on the CSU's [travel website](#). Rental car reservations can be made with New Horizons. New Horizons can get a cheaper rate and has our preferred vendors list. You will pay for this upfront, but it is reimbursable.
- Meals – Unless claiming daily per diem, itemized meal receipts are required for meal reimbursement. Please keep in mind alcohol is not reimbursable, and tips over 20% are not reimbursable.
- Proof of Purchase – Please keep in mind that you need itemized receipts; flight itineraries with dates and costs and payments; hotel receipts with dates, location, costs, and proof of payment, etc. Having these details ensures your reimbursement will be expedited.

## Frequently Asked Questions about Travel

### **Q: Can I travel before or after personally?**

A: Yes, if you plan to extend your trip prior or post a conference or other business function, please keep in mind you may only be reimbursed up to the cost of airfare for the days of "business" travel. If the ticket is the same or cheaper, you can still utilize New Horizons Travel for booking.

**Q: Can I get reimbursed for any expenses before I travel?**

A: Yes, this would be called a TRAVEL ADVANCE. Often, for large expense items like the hotel that must be paid in full prior to departure, you can request a travel advance up to 10 days prior to your departure date. Mention this need to your administrative assistant for discussion and processing.

Please note that receipts are still required, and if the advance is more than your total expenses, you will be required to reimburse Colorado State University the balance. You will get a Kuali notification that you must complete/approve for the advance.

**Q: Can any expenses be put on my PCard?**

A: The only allowable expense would be registration fees. At times, conference registration fees for certain conferences include the hotel, and if so, that's allowable. *Otherwise, all other expenses related to travel CANNOT be put on a PCard.*

**Q: How do I show proof of purchase?**

A: Some companies provide detailed receipts, email confirmations with costs and payments, etc. Typically with Uber, you can get an emailed receipt, which will suffice. If you're booking something online that doesn't send you an email confirmation right away, getting a screenshot of the confirmation and payment on the screen can help as a backup. Baggage receipts, train tickets, a taxi receipt, cab cards where you can fill in the price, etc., are items to make sure to ask for as you travel.

**Q: Where can I read more about CSU's travel policies?**

A: <http://busfin.colostate.edu/Depts/TravelSvcs.aspx> provides details on allowable expenses, per diem rates, rental car vendors, etc.

**Q: What if I have other questions?**

A: Contact our program support specialist: Annika at [Annika.sundsten@colostate.edu](mailto:Annika.sundsten@colostate.edu)

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## CHOOSING AN ADVISOR

- Take initiative
  - Take time to review faculty on the [faculty member list](#) pages above.
  - When you find a faculty member with research you are interested in, contact the faculty member. If you email them, be patient.
- Be sure to talk to several different faculty members whose research you find interesting based on your search of their websites, literature, and suggestions from others
- Come to your meetings prepared with questions. Consider the following/ ask them about the following:
  - How do your research interests fit with that of the faculty member? Will they pick your research project or can you decide the direction your project will take?
  - What types of mentoring and professional development activities do they offer or require of students?
  - What are their expectations or guidelines for students in their group?
  - Does their management or mentoring style fit with how you best learn and work?
- It is important to consider research interests when choosing an advisor, but don't forget to talk to group members about the questions you asked the faculty member as they can provide additional insight for making your decision.
  - You want to choose an advisor, and a group, considering how you would be able to work and communicate with fellow members in addition to sharing research interests.
  - 2-5 years can be a long time if you are unable to work effectively with your

advisor or group members because you aren't communicating or collaborating successfully

- Be patient and open minded
  - You may have an idea of the exact project you want to work on, but that does not mean faculty has grants for that. You need to be open to working on their specific projects/grants and the research should fall within your research interests

Once you find an advisor, if they do not have funding for you, make sure you and the advisor apply for a SMSE GTA. Applications for GTA's are typically sent out in April/May.

## **GRADUATE STUDENT EMPLOYEE INFORMATION**

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**SMSE staff is happy to direct you to information regarding your benefits and responsibilities as a graduate student employee, however, we cannot advise on most human resources (HR) related issues.** Please read through the information below and visit the [CSU HR website](#) for additional information. HR can be contacted via [email](#) or phone- 970-491-MYHR (970-491-6947)

### **Graduate Student Employee Leave**

Graduate assistants are not eligible for personal paid time off; however, they are eligible for parental leave and accrue some sick leave. Between semesters, graduate assistants usually concentrate on their research or artistry and associated work. **To the extent that the supervising faculty member and the department head concur, graduate assistants may use portions between semesters for leave.** Meaning, graduate students with a faculty advisor need to communicate with their faculty advisor about leave.

Graduate assistants may elect to enroll in the Student Health Insurance Plan and are eligible for workers compensation insurance. They are not covered by unemployment insurance. Graduate Assistants are eligible for sick leave under Colorado's Healthy Families and Workplaces Act.

CSU's FAML I plan provides for a portion of an employee's weekly salary for up to 12 weeks of leave per year to care for themselves or a family member. Those who experience pregnancy or childbirth complications may receive an additional four weeks. FAML I income replacement benefits are primary to any other leave program and runs concurrently with Family Medical Leave (FML) and any other leave program to mitigate duplication of income replacement benefits. FAML I is available to all employees who work and live in Colorado, including faculty, staff and student employees. Employees receive job-protection through FAML I after 180 days of employment.

(For more information see HR Manual pg. 104-107: [HR Manual](#) )

Links for more information:

- **GA Benefits General Information:**

<https://graduateschool.colostate.edu/financial/assistantships/>

E.g. *Health Families and Workplace sick leave option:*

Sick leave is accrued at one hour for every 30 hours worked, up to a maximum of 48 hours per year. Leave **must** be requested from supervisor or HR liaison in order to apply sick leave to correct assignment (as some people have multiple and cannot be transferred between assignments). This leave **must** be logged into the system.

- **GA Parental Leave:** <https://policylibrary.colostate.edu/policy.aspx?id=743>

- **FAMLI leave:** <https://hr.colostate.edu/colorado-famli-program/>

CSU's FAMLI plan provides for a portion of an employee's weekly salary for up to 12 weeks of leave per year to care for themselves or a family member. If this is needed you will need to inform your advisor and department, then apply for it through Central HR, see link above.

### ***SERP (Student Employee Retirement Plan) - is up to date with what is on the website***

#### **WHAT IS THE SERP?**

SERP is an alternative to Social Security for student employees at Colorado Public Higher Education Institutions who would have been required to participate in Social Security. The SERP allows for a refund of your contributions and any earnings upon termination of employment. After leaving the institution, the account can be rolled over to an IRA or another employer's retirement plan (if the new employer plan allows such transfers) or taken as cash. Certain restrictions do apply. The accounts are fully vested, allowing you to take full ownership of the investments and any earnings.

#### **WHO PARTICIPATES IN THE SERP?**

Who is required to participate is determined by the employing institution. Generally, undergraduate students taking less than six credit hours each semester and graduate students taking less than three credit hours during the summer semester or less than five credit hours during the spring or fall semester are required to participate in the plan.

#### **HOW DOES THE PLAN WORK?**

The plan requires that 7.5% of your pay be deferred to a retirement plan account. This retirement contribution is made on a pretax basis and any earnings accumulate tax deferred until withdrawn.\* TIAA-CREF has been selected as the vendor for the SERP, so all contributions will be automatically sent to them by your employer.

#### **HOW TO ACCESS YOUR ACCOUNT**

Visit us online at [tiaa-cref.org](http://tiaa-cref.org) to view your account information and change your investment allocation. Or contact TIAA-CREF at 800 842-2252 to speak with a consultant about your account and allocations. Please note, your account is currently invested in the default account chosen by your employer. We encourage you to review the investment choices available to build a portfolio that is suitable to your needs and goals.

The plan requires that you end your student status with the institution before you have access to the accounts. Therefore, termination is equivalent to graduation or no longer being enrolled as a student. Withdrawals prior to age 59½ are subject to ordinary income taxes and are generally subject to a 10% early withdrawal penalty. \*\* Morningstar Direct (September 2010) based on Morningstar expense comparisons by category. Applies to our variable annuity accounts and mutual fund expense ratios. You should consider the investment objectives, risks, charges and expenses carefully before investing. Please call 877 518-9161 or go to [tiaa-cref.org](http://tiaa-cref.org) for a prospectus that contains this and other information. Please read the prospectus carefully before investing. TIAA-CREF products may be subject to market and other risk factors. See the applicable product literature, or visit [tiaa-cref.org](http://tiaa-cref.org) for details. TIAA-CREF Individual & Institutional Services, LLC and Teachers Personal Investors Services, Inc., members FINRA, distribute securities products. Annuity contracts and certificates are issued by Teachers Insurance and Annuity Association (TIAA) and College Retirement Equities Fund (CREF), New York, NY. Group Supplemental Retirement Annuity (GSRA) contract form series G1250.1. ©2010 Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF), New York, NY 10017. C48253 AP20521/26725 (12/10)

**HOW DO I ENROLL IN THE PLAN?** Enrollment is automatic. Once your institution determines that you are eligible to participate in the plan, they will automatically forward your contributions to a TIAA-CREF Group Retirement Annuity Contract (GSRA). The investment election for the account will automatically be set to the default account chosen by your employer and your estate will be named as the beneficiary. After the account is established, please go online or call TIAA-CREF to review your account and make changes to the investment allocations and your beneficiary designation, as necessary.

**WHAT COSTS ARE ASSOCIATED WITH THE ACCOUNT?** TIAA-CREF's expenses are generally less than half the industry average, as measured by Morningstar Direct.\*\* Also, there are no additional sales charges deducted from the contributions or annual account maintenance fees. This means more of your savings is working for you rather than going to expenses.

**WHAT ARE MY OPTIONS WHEN I AM NO LONGER A STUDENT EMPLOYEE?**

Upon Termination of association (generally, after graduation or withdrawal of pursuit of a degree), you'll have three options: 1. Maintain your retirement account with TIAA-CREF 2. Roll over the account to an IRA with TIAA-CREF or another firm, or an employer sponsored retirement plan (if your new employer accepts rollovers) 3. Withdraw the balance from your account. Please note that only options one and two will preserve the tax-deferred status of your contributions and any earnings. If you select option three and withdraw the funds, the distribution will likely be taxable as ordinary income in the year it is withdrawn and may also be subject to an additional 10% early withdrawal penalty.

**SERP Distributions/Refunds**

Student/Employer

Two Conditions required for refund of contributions and interest:

1. Termination of Student Employment and
2. Departure from the University as a student
  - a. By graduating from CSU
  - b. Or separation from CSU

**Health Contribution**

*For any Grad student who is in a higher tax bracket will be taxed for the month of February and September for Health Insurance Contribution. Therefore, the first paycheck of the semester for the student once only each semester, fall and spring will be less than those for the remainder of the year.*

-Please review hyperlink in which provides greater detail pertaining to this matter: <http://graduateschool.colostate.edu/financial/assistantships/assistantship-health-contribution/>

If you review your paystub by following the instructions below, you will notice for Health Contribution (Contr) is where the additional money was applied.

Instructions to review paystub:

1. Make sure you are logged into GlobalProtect and DUO if off Campus.
2. Search browse: colostate.edu
3. Select resources (Top right corner)
4. Select Administrative Applications and Resources (AAR) or type in AAR in the search (select first link)
5. Select HR System
6. Log in with your eID
7. Select CSU Employee Self-Service (on the left)
8. Select Pay Advices (on the left)

Questions regarding the health insurance contribution should be directed to the graduate school at (970) 491-6817.

## **POST GRADUATION**

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Remember to keep in touch after you leave campus! Let us know of your employment, research, academic, and personal endeavors!

Each year we hope to correspond with you to keep all alumni up-to-date of developments in SMSE.

**Please direct any questions to:**

Carolina Bañuelos  
SMSE Program Manager  
442 Anatomy/Zoology  
carolina.banuelos@colostate.edu  
970.491.4879  
Mailing Address: 1617 Campus Delivery  
Fort Collins, 80521

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