SYSTEMS ENGINEERING
COLORADO STATE UNIVERSITY

# Systems Engineering Minimum Application Qualifications

The CSU Systems Engineering Department has four graduate certificates and five graduate degree plans from which a student may choose. The minimum application requirements listed below demonstrate the types of competencies that are generally required for success in our programs and the specific requirements of each program. Basic competencies can be learned through coursework or career path if there is adequate experience. *Please note that meeting the minimum program standards does not ensure admission to the program.*

**Pages 2-3 of this document contain instructions for applying to the Doctor of Philosophy in Systems Engineering (Ph.D.). If you are interested in a different program, please view our website to access the correct instructions:** https://www.engr.colostate.edu/se/getting-started/

✓ = required
★ = strongly recommended

| Certificates | | | | |
|---|---|---|---|---|
| | **S.E. Practice** | **Human Systems Integration** | **Systems Security** | **MBSE** |
| Four-year bachelor's degree from a regionally accredited institution | ✓ | ✓ | ✓ | ✓ |
| B.S. in engineering, mathematics, or a technical discipline with a GPA of at least 3.0 | ★ | ★ | ★ | ★ |
| Calculus I course or statement explaining equivalent experience | ★ | ★ | ★ | ★ |
| Basic statistics course or statement explaining equivalent experience | ★ | ✓ | | ★ |
| Basic programming course or equivalent experience | | | ✓ | |

| Degrees | | | | | |
|---|---|---|---|---|---|
| | **M.E.** | **M.S. Plan A (thesis)** | **M.S. Plan B (project)** | **Ph.D.** | **D.Eng.** |
| Four-year bachelor's degree from a regionally accredited institution | ✓ | ✓ | ✓ | ✓ | ✓ |
| B.S. in engineering, mathematics, or a technical discipline with a GPA of at least 3.0 | ✓ | ✓ | ✓ | ✓* | ✓* |
| Calculus I course or statement explaining equivalent experience *(please note some course options within our degrees may have higher math prerequisites)* | ✓ | ✓ | ✓ | ✓ | ✓ |
| Basic statistics course or statement explaining equivalent experience | ✓ | ✓ | ✓ | ✓ | ✓ |
| Secure a faculty advisor prior to completing application | | ✓ | | ✓ | |
| Minimum 5-8 years' professional experience as, "Systems Engineer," "Engineer," "Scientist," or equivalent | | | | | ✓ |
| Provide additional information on the proposed practicum topic and sponsor | | | | | ✓ |

* If applying for a doctorate program and your B.S. is not in engineering, an M.E. or M.S. in engineering is *strongly recommended*

# Doctor of Philosophy in Systems Engineering (Ph.D.)

Detailed Application Checklist

Please use the following checklist to be certain you have included everything in your application.

**Deadlines:** Your application should be submitted and *everything should be received* by
**July 1** for fall semester admission or
**November 1** for spring semester admission
It is strongly encouraged that you work well ahead of these deadlines; they are not flexible.

**STEP 1: SECURE A FACULTY ADVISOR**

You need to secure a permanent faculty advisor before your Ph.D. application will be considered complete for review. Confirmation from a faculty member that they will advise you is due by the application deadline for each semester. **Your online application will ask you for the name of a faculty member with whom you have been in communication and would endorse your application. Please list a name only if that person has explicitly agreed to be your advisor.**

This step includes the preparation of a Research Interest Summary. **For detailed and necessary information on this process, please see section on "Securing a Faculty Advisor"** (page 4).

☐ **Send confirmation that a faculty advisor has agreed to advise you** to sys_engr_info@engr.colostate.edu and *CC your advisor*

**STEP 2: BEGIN YOUR ONLINE APPLICATION** (http://gradadmissions.colostate.edu/apply)

You will create an account and can re-visit the application at any time to continue where you last left off.

- When choosing a program, if you want to do it Online, select the "Distance" option

**STEP 3: SUBMIT ALL REQUIRED APPLICATION MATERIALS**

*You will submit the following through the online application:*

☐ **Current resumé or CV**

☐ **Statement of purpose** (2 pages MAXIMUM). This is meant to address the Systems Engineering Admissions Committee and why you would be a good fit for the program. This is different from the Research Interest Summary you will compile, but some of the same information may be used. Topics may include, but are not limited to:

- Your relevant professional/academic background and skills
- Why you are interested in Systems Engineering – provide specific areas of interest and application
- Why you are interested in CSU's program and what you can contribute to CSU

☐ **One transcript copy from every post-secondary institution attended**, even those from which you did not earn a degree (transcripts from CSU are not required).

Beginning Spring 2027, SE *degree* program applications allow use of unofficial/uploaded transcript copies to meet application requirements. Please note that **all** *official* transcripts must be **received** by CSU before a student can enroll in their second term, so it is to your benefit to understand official transcript requirements and be prepared to submit these ASAP if admitted.

Official transcripts may be submitted during the application stage if you wish to speed up your master's transfer evaluation or are also applying for a certificate (both of which require official transcripts to be received). If a mailing address or email address is required to submit, use those shown on the next page.

*You will need to have the following sent separately:*

☐ **Three letters of recommendation** from faculty, supervisors, etc. who can speak to your skills accurately and in detail.
You will add names of recommenders through the online application and they will be emailed with instructions to upload the letter. Letters directly from applicants will not be accepted. **It is your responsibility to connect with your recommenders and ensure the recommendations are submitted by the appropriate deadline.**

☐ **English proficiency scores**: required for students who do not have a degree from an institution where the primary language of instruction is English and/or international students whose country of origin does not have a primary official language of English. Click here for more information about requirements and exemptions.

| **Addresses to Which All Official Documentation May be Submitted:** | |
|---|---|
| Physical mailing address | Graduate Admissions<br>Colorado State University – Office of Admissions<br>1062 Campus Delivery<br>Fort Collins, CO 80523-1062 |
| Email address | gradadmissions@colostate.edu<br>***Emailed transcripts are not accepted as 'official'*** *unless sent through Parchment, eScript-Safe, or another 3rd party verified e-delivery service* |

**STEP 4: SUBMIT YOUR ONLINE APPLICATION**

☐ **Pay the non-refundable Graduate School Application fee** (only payable after application is submitted) or obtain waiver (check here to see if you are eligible)

**STEP 5: CHECK THE STATUS OF YOUR APPLICATION TO ENSURE YOU MEET YOUR DEADLINE**

Please visit http://gradadmissions.colostate.edu/apply/status at any time to check that your application checklist is complete. The Systems Engineering Department will not provide updates on materials you are still missing. If your application status shows a complete application, but you have not sent confirmation of a faculty advisor, your application will still be considered incomplete.

You are responsible for ensuring all materials are received by the deadline. Questions regarding the application process and/or program may be directed to sys_engr_info@engr.colostate.edu.

# Securing a Faculty Advisor

A permanent faculty advisor must be secured before an application to the Ph.D. program is considered complete for review. Temporary advisors do not fulfill this requirement.

1. Start by reading the Systems Engineering faculty bios, which can be found at https://www.engr.colostate.edu/se/faculty/. This will provide information about the available research specialties at CSU and which faculty might be the best fit for your interests.

2. Prepare your **Research Interest Summary** (2 pages MAXIMUM). This is intended to give a brief overview of your research goals and interests so potential faculty advisors can quickly assess your fit with their areas of expertise. The better you can articulate what it is you hope to accomplish, the better your chances of securing a faculty advisor. Include the following sections in this summary:

   a. Specific areas of research interest
      - What "value-added" do you see in pursuing a PhD for you, your company, industry, etc.?
      - What data set(s) would be critical for your dissertation?
      - Who would be the key contacts/contributors to a "needs analysis" (this may have already been established via other work in your organization).
      - Can include "key words" section

   b. How these areas of interest fit at CSU
      - Who at CSU is doing research in these areas right now?
      - How would your work fit into potential faculty advisors' areas of expertise?

   c. Professional or educational experience relevant to the above interests
      - Highlights from your resumé
      - How do you anticipate your research will be funded? Do you have support from your employer, other resources, or are you depending on financial support from CSU to conduct your research (CSU financial support typically available to on-campus students only)?
      - Will you intend to attend on-campus or online? If online, what specific resources will you have access to that can support the feasibility of your research plan?

3. Distribute your Research Interest Summary. You have two ways to do this (can choose one or both):

   a. Send a generalized Research Interest Summary to the Systems Engineering Department (sys_engr_info@engr.colostate.edu). Please note:

      - We collect these for a group review once per application period (generally 1-2 months before the application deadline), so this provides one way to get your name and information in front of faculty members.
      - There is no guarantee a faculty member will match with your research interests or agree to be your advisor

   b. Reach out directly to faculty members by phone or email. Please note:

      - It may be a good idea to customize your Research Interest Summary for each individual faculty member to whom you reach out so you draw clear parallels between your interests and their research.
      - Some faculty members may not respond if you have not made a clear and convincing case as to why you would be a qualified advisee that fits well with that individual faculty member.

- Some faculty are too busy to respond to individual student inquiries and wait until the group review process each application period.
- Faculty members may be at capacity with advisees and unable to take on another one.

4. Confirm your advisor with the Systems Engineering Department. If a faculty member agrees to advise you, forward proof of agreement on to sys_engr_info@engr.colostate.edu OR send an email to the above email address and **CC your advisor** confirming who has agreed to advise you. Until this last step is done (must be received by application due date for the semester), your application will be considered incomplete.
   **Your online application will ask you for the name of a faculty member with whom you have been in communication and would endorse your application. Please list a name only if that person has explicitly agreed to be your advisor.**

Please remember, finding a faculty advisor is often the longest and most difficult part of the application process, so we encourage you to begin this process well in advance of the application deadline. This is a competitive process: our Ph.D. program is highly sought-after and we have limited capacity for new students each application period. Additionally, some applicant research interests fall outside of the expertise areas offered by CSU's faculty and may not be a good fit for our program.

Please also note that securing an advisor does not guarantee admission into the program for which you are applying. The faculty advisor evaluates your fit with their research interests, and the Systems Engineering Program's application process evaluates your fit with the systems engineering field and this degree program.