Dear Applicant,

We are pleased to learn of your interest in Colorado State University’s systems engineering degree programs. We offer a Master of Engineering (M.E.), Master of Science (M.S.), and a Doctor of Philosophy (Ph.D.) degree. The M.E. includes a capstone project. There are two options for students pursuing the M.S. - a thesis or project. Additionally, there are two options for students pursuing the Ph.D. depending on prior master degrees. Please carefully read all of the materials in the packet and fully follow the instructions and deadlines when applying.

Students are admitted to the program twice per year. For the fall semester, it is recommended that you submit all materials no later than July 1. For the spring semester, please submit materials no later than November 1. Upon receipt of all application materials, your application is reviewed by the admissions committee; this can take up to four weeks. Once a decision has been made, it can take three to four weeks before you receive official notification from the Graduate School.

We look forward to receiving your application materials and wish you well in your professional development.

Sincerely,

The Colorado State University Systems Engineering Program
Contents

Systems Engineering Program Options ................................................................. 3
Minimum Application Qualifications ................................................................. 5
Criteria for Admission ....................................................................................... 6
Systems Engineering Application Checklist ...................................................... 7
Securing a Faculty Advisor ............................................................................. 9
Delivery of Coursework ................................................................................. 10
Coursework Prior to Applying ....................................................................... 11
Common Mistakes to Avoid ......................................................................... 12
Systems Engineering Program Options

Systems engineering offers three degrees with various options:

Master of Engineering (M.E.)
- The M.E. requires a capstone project. The topic of the capstone project is determined by the student and the advisor.
- No independent study, research, internship, supervised college teaching, or practicum credits may be credited toward the degree.
- Requires 30 credits
  - Minimum of 24 credits must be earned at Colorado State University, 21 of which must be at the 500-level and earned after formal admission to the University. There is an exception to this credit hour requirement – if you successfully complete the “certificate of completion” (12 credit hours) prior to admission, the full 12 credit hours may be applied to your degree.

Master of Science (M.S.)
- There are two options for students pursuing the M.S.:
  - M.S. Plan A (9 credit hours of thesis work required)
  - M.S. Plan B (3 credit hours of project work)
- Requires 30 hours
  - Minimum of 24 credits must be earned at Colorado State University, 21 of which must be at the 500-level and earned after formal admission to the University. There is an exception to this credit hour requirement – if you successfully complete the “certificate of completion” (12 credit hours) prior to admission, the full 12 credit hours may be applied to your degree.

Doctor of Philosophy (Ph.D.)
- 72-credit program option:
  - Designed for students who do not already have a Master of Science degree and only hold a bachelor’s degree
  - Up to ten credits earned at an accredited college or university may be accepted for transfer if approved by the student’s advisory committee, the department, and the Graduate School.
  - A minimum of 62 credits must be earned at Colorado State University after admission to a doctoral program. At least 37 credits beyond the bachelor's degree must be earned in courses numbered 500 or above. There is an exception to this credit hour requirement – if you successfully complete the “certificate of completion” (12 credit hours) prior to admission, the full 12 credit hours may be applied to your degree.
- 42-credit program option:
  - Designed for students who already have an applicable master's degree of at least 30 credits
  - The master’s degree can be in a variety of areas including engineering, mathematics, or science.
Students with a bachelor’s degree in engineering and a master’s degree in business are also eligible for this option. Up to ten credits in courses earned after the date on which the master’s degree was awarded may be accepted in transfer if approved by the student’s advisory committee, the department, and the Graduate School. A minimum of 32 credits must be earned at Colorado State University after admission to a doctoral program. At least 21 credits beyond the master’s degree must be earned in courses numbered 500 or above. There is an exception to this credit hour requirement – if you successfully complete the “certificate of completion” (12 credit hours) prior to admission, the full 12 credit hours may be applied to your degree.
Minimum Application Qualifications

The minimum application requirements listed below demonstrate the types of competencies that are required for the systems engineering program. These competencies can be learned though coursework or career path if there is adequate professional and technical experience. Please note that meeting the minimum department standards does not ensure admission to the program.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>M.E.</th>
<th>M.S. - Plan A, thesis</th>
<th>M.S. - Plan B, project work</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science from a regionally accredited institution in engineering, mathematics, or a science discipline with a GPA of at least 3.0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Three semesters of calculus: Calculus I, Calculus II, &amp; Calculus III</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Basic statistics course</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>GRE test scores are required if all previous degrees were conferred by an institution outside of the U.S.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Secure a faculty advisor prior to completing application. For information on how to secure a faculty advisor please go to the section, “Securing a Faculty Advisor.”</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Criteria for Admission

We look at each applicant in a holistic manner – what is the student’s educational and professional background? Given the full view of their background, we ask ourselves, do we feel the students have the competencies to succeed in the program.

The minimum qualifications are listed to get to a “competency level” not to check off the box that a course etc. has been taken. These competencies can be learned though coursework or career path if there is adequate professional and technical experience.

For potential admission into the program, the applicant should show that he/she has the competency level that is required to excel in the systems engineering program. For example, directly addressing any perceived shortcomings in the statement of purpose and resume could provide evidence of an acceptable level of analytical/technical competency if the transcripts do not reflect a direct correlation to an analytical skill set. Applicants could enroll in introductory courses in systems engineering and “test the waters” to see if they have the skill set to succeed. If they excel in the introductory coursework, then they could use this as evidence of their capabilities for consideration if they choose to apply for formal admission. Successful completion of initial coursework does not guarantee admission, but would help during the evaluation of the application.

M.S. Plan A and Ph.D. students: Securing a faculty advisor is paramount before an application can be reviewed; this is particularly important for Ph.D. students. If you are unable to secure a faculty advisor, your application is considered incomplete, and is not reviewed. While some students are admissible, they do not always find faculty advisors who have the expertise in their areas of interest or who have the time to serve as advisors. Please see the section, “Securing a Faculty Advisor” for additional information.

In a competitive admission situation, applicants are judged not only on the basic criteria, but also in comparison to other applicants. Thus, meeting the basic criteria does not guarantee admission.
Systems Engineering Application Checklist

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

STEP 1: SECURE A FACULTY ADVISOR

If you are applying to the M.S. Plan A or Ph.D. option, you need to secure a faculty advisor prior to proceeding with your application to the graduate school and systems engineering program. Do not proceed to STEP 2 unless you have found a faculty advisor. Please see the section on “Securing a Faculty Advisor.”

If you are applying to the M.E. or M.S. Plan B option, please skip STEP 1 and proceed with STEP 2.

STEP 2: TO BE SUBMITTED TO THE GRADUATE SCHOOL:

☐ Complete the Graduate School Application
http://graduateschool.colostate.edu/prospective-students/apply/

- For the M.E. program, select “Engineering ME/Systems Engr - Distance” when choosing the program of study.
- For the M.S. program, select “Systems Engineering (College of Engineering) - MS-Distance” when choosing the program of study.
- For the Ph.D. program, select “Systems Engineering (College of Engineering) – Ph.D.-Distance” when choosing the program of study

☐ Submit non-refundable Graduate School Application fee (payable online)

STEP 3: TO BE SENT (via EMAIL and/or MAIL) TO THE SYSTEMS ENGINEERING PROGRAM (see end of this section for email and mailing address)

☐ One official transcript from every post-secondary institution attended (transcripts from CSU are not required). If a university uses a certified third-party to send electronic transcripts (such as Docufide or Escrip-safe) you must send the confirmation email.

- If transcripts are not in English, ensure official copies include a certified translation into English. Only one set of transcripts per institution is required.

☐ Current resume

☐ Three letters of recommendation from faculty, supervisors, etc. who can accurately speak to your skills. Letters may be mailed or emailed.

☐ 1-2 page statement of purpose. Please include any relevant professional/academic background experience and indicate why you are interested in systems engineering by providing specific areas of interest and application. If your GPA is low, please be sure to explain the circumstances.

If you are applying for the M.S. Plan A or Ph.D., ensure that your statement of purpose answers the following:
1. What is your overall intent in pursuing a systems engineering M.S. Plan A or Ph.D.?
   a. How does your pursuit of a M.S. or Ph.D. align with your personal/professional goals?
   b. What value do you see in pursuing a M.S. or Ph.D. for you, your company, industry, etc.?

2. Do you have a more focused area you would like to consider as a potential thesis or dissertation topic?
   a. What data set(s) would be critical for your thesis or dissertation?
   b. Who would be the key contacts/contributors to a “needs analysis” (maybe this has already been established via other work in your organization...).

3. Which faculty members and their associated research areas align with your interests?
   Please identify two to three faculty members with research interests that align with yours. Please indicate the faculty member you have contacted and who has agreed to be your faculty advisor. A list of faculty members for the systems engineering program can be found at http://www.online.colostate.edu/degrees/systems-engineering/faculty.dot

4. How do you anticipate your research will be funded? (i.e. are you depending on financial support from CSU to conduct your research)

   □ GRE Scores: GRE test scores are required if all previous degrees were conferred by an institution outside of the U.S. Submit official scores through the Educational Testing Service (select institution code: 4075). It generally takes 3-6 weeks for ETS to send the scores to CSU, so allow plenty of time. Photocopies will not be accepted.

   □ TOFEL and/or IELTS scores: Students are exempted from the TOEFL or IELTS requirement if the official language of their country is English or if they have recently earned a degree from a U.S. university. The minimum score for applicants is 80 on the internet-based test (550 on the paper-based test or 6.5 on the IELTS). Leave the department code blank. It generally takes 3-6 weeks for ETS to send the scores to CSU, so allow plenty of time. Photocopies will not be accepted.

MISCELLANEOUS

□ Everything should be received by the systems engineering program by July 1 for the fall semester and November 1 for the spring semester.

<table>
<thead>
<tr>
<th>Email items to</th>
<th>sys_ engr_info@ engr.colostate.edu</th>
</tr>
</thead>
</table>
| Mail items to | Systems Engineering - Graduate Admissions  
College of Engineering  
Colorado State University  
1301 Campus Delivery  
Fort Collins, CO 80523-1301 |
Securing a Faculty Advisor

A faculty advisor must be secured before admission to the M.S. Plan A and Ph.D. program; this is particularly important for Ph.D. students. It is the responsibility of the applicant to establish rapport with faculty in a professional manner and secure a faculty advisor. The better you can articulate what it is you hope to accomplish, the better your chances of securing a faculty advisor. You may begin this process by sending a detailed resume/CV and a write up regarding your dissertation interests which should include detailed information regarding your research interests.

Before submitting the graduate application and the department application component, you must secure an advisor. Steps to securing a faculty advisor are as follows:

1. Start by reading the systems engineering faculty bios, which can be found here: http://www.online.colostate.edu/degrees/systems-engineering-phd/faculty.dot
2. Your faculty advisor can be a faculty member from any engineering department. You may need to look at faculty outside of those listed at the above link.
3. Introduce yourself to faculty and provide them with some background regarding your education goals and research desires
   a. Include a detailed resume/CV
   b. Indicate which program you are applying to
   c. Include detailed information regarding your thesis or dissertation interest. Please include the following:
      i. What is your overall intent in pursuing a systems M.S. or Ph.D.?
         1. How does your pursuit of a M.S. or Ph.D. align with your Personal/professional goals?
         2. What “value-add” do you see in pursuing a M.S. or Ph.D. for you, your company, industry etc.?
      ii. Do you have a more focused area you would like to consider as a potential thesis or dissertation topic?
         1. What data set(s) would be critical for your thesis or dissertation?
         2. Who would be the key contacts/contributors to a “needs analysis” (maybe this has already been established via other work in your organization…).
         3. What do you hope to accomplish by conducting your research?
      iii. How do you anticipate your research will be funded? i.e. are you depending on financial support from CSU to conduct your research? Will your employer be funding it?

Keep in mind that you need to help faculty see the connection between what you want to research and the faculty area of expertise.

Please remember, finding an academic advisor is often the hardest part of the application process. Faculty may take weeks to respond to you, as they are busy with current research, students, and classes. If you are unable to clearly articulate your research interest, it is unlikely that faculty will be interested.

Students who are accepted into the M.E. or M.S. Plan B option, may switch to the M.S. Plan A upon finding an academic advisor.
**Delivery of Coursework**

Course delivery options allow you to study when and where it works best for you, whether that be streaming the lecture from your computer while it’s happening live on campus or watching a recorded version at a time more convenient for you. You also have the opportunity to attend a selection of courses in person at the Fort Collins campus or our Denver South location, embedded within industry.

Courses that are delivered online use our learning management system called RamCT Blackboard. The system allows you to watch recorded, campus-based lectures, engage in course content and communicate with peers online. Online courses are asynchronous, allowing you to study at the time that best fits your schedule.

In your courses you will:

- View recorded campus-based lectures online
- Download and review lecture notes
- Complete assigned and optional readings
- Communicate and exchange ideas with instructors and fellow students through chat rooms, threaded discussions, and email (online courses)
- Complete individual projects and collaborate on group projects
- Study for and complete exams
- Write course-related papers

Although the format of this degree offers flexibility, it still requires the same amount of work and time as an on-campus graduate program. Depending on your learning and studying style, expect to spend nine to twelve hours per week on a three-credit course. This will vary depending on your learning and studying style.

There is no on-campus requirement for any of the systems engineering programs. However, for the M.S. (Plan A) and Ph.D. options, faculty may want to meet with students via Skype or in person if schedules allow. The logistics of this should be discussed with your faculty advisor. For Ph.D. students, the preliminary examination involves a presentation and an oral examination conducted over Skype, or similar technology. If schedules allow, the examination may be conducted face-to-face.

The M.E. and M.S. can be completed in as little as three years; however, most students take closer to four years to complete either of the master degree programs.

The Ph.D. is generally completed in five years, but depends on the intensity of study and previous coursework.
Coursework Prior to Applying

If you are interested, you can take one or more classes prior to formally applying to any systems engineering degree to ensure that the program is a good fit for you and to show that you are capable of doing well in graduate-level work. Taking a course does not guarantee your admission to the degree program, but it is one additional factor that the admission committee will consider regarding your application.

Students who successfully complete the 12 credit Systems Engineering Certificate are eligible to transfer all 12 credits of coursework to the master and Ph.D. programs. However, students that are not working toward the certificate, and are taking any courses within the systems engineering curriculum, are only eligible to transfer nine credits of coursework prior to formal admissions.

All coursework you are transferring from outside of the systems engineering programs is evaluated upon acceptance into the program.
Common Mistakes to Avoid

1. Not reading all materials prior to beginning the application process.
2. Sending transcripts to the Graduate School or Office of Admissions rather than directly the systems engineering program (see above for address to send transcripts), as stated in the directions.
5. Not checking with the systems engineering program to see that all materials are in prior to the deadline.
6. Not securing a faculty advisor prior to applying (for M.S. Plan A and Ph.D. programs)