



## Overview

Gain an introduction to embedded systems, including hardware design and software engineering principles. Learn to apply electrical engineering, computer engineering, and computer science principles in real-world embedded platforms.

Coursework includes both group and individual projects. Students can tailor projects on individual interests and focus on software or hardware, or both. Online classes provide embedded systems training on how to:

- Analyze and explore an embedded system design space, including processors, memories, networks, and sensors.
- Address contemporary design challenges pertaining to reliability, power and thermal efficiency, real-time performance, and security.
- Model embedded hardware and software components for simulation and exploration.

Credits completed for this certificate may be applied toward CSU's online electrical or computer engineering master's degrees after formal admission per University transfer policies. Additionally, you can earn a guaranteed admission recommendation into either master's program from the department and bypass the GRE requirement, if you complete two classes from the curriculum with a GPA of 3.0 or higher and with no less than a 2.7 in any course. Learn more about this option and the online [computer engineering master's program](#) and [electrical engineering master's program](#) at CSU.

## Curriculum

Courses cover the skills needed to understand modern processor, memory, network, and sensor architectures, as well as analyze and optimize various embedded hardware design and software architectural candidates.

Select three courses from the following. At least one ECE course is required.

- ECE 661 - Advanced Topics in Embedded Systems (4 cr.)
- ECE 554 - Computer Architecture (3 cr.)
- ECE 561 - Hardware/Software Design of Embedded Systems (4 cr.)
- CS 560 - Foundations of Fine-Grain Parallelism (4 cr.)
- CS 575 - Parallel Processing (4 cr.)
- CS 545 - Machine Learning (4 cr.)

## Delivery

Online

## Credits

10–12 credits

## Tuition

\$705–715 per credit

- Includes [Student Services](#)
- [Fees](#) assessed separately
- [Financial aid](#) is available; eligibility determined on an individual basis

## Time frame

1 year

## More info

[online.colostate.edu/certificates/embedded-systems-certificate](https://online.colostate.edu/certificates/embedded-systems-certificate)

## Contact

Lauren Kelly  
Student Success Coach  
[lauren.aubrey.kelly@colostate.edu](mailto:lauren.aubrey.kelly@colostate.edu)  
(970) 491-3390

# How to Apply

Embedded Systems - Graduate Certificate



## Application Deadlines

Fall semester: **June 1**      Spring semester: **December 1**

### 1 Review Minimum Admission Requirements

This graduate certificate requires applicants to have the following, at a minimum:

- Bachelor of Science from a regionally accredited institution in electrical engineering, computer engineering, computer science, or related field.
- International students must hold degrees equivalent to U.S. bachelor's degrees. Bachelor of Science in Electrical Engineering Technology (BSEET) degrees are not accepted.

### 2 Complete Online Application

Complete the [online graduate application](#) and pay the nonrefundable application processing fee (payable online). As soon as you have completed the required information, please submit your application. Your application will not be reviewed until it is complete and all required materials have been received.

- Select “Embedded Systems (Certificate) – Distance” when choosing the Program of Study. (Note: You must first select “Certificate” at the top.)

### 3 Request Transcripts

Request one official transcript of all collegiate work completed from every institution attended, whether or not you received a degree from those institutions. Transcripts from Colorado State University are not required. Official transcripts can either be mailed in or sent as e-transcripts.

Send e-transcripts to: [gradadmissions@colostate.edu](mailto:gradadmissions@colostate.edu)

Send paper copies to:  
Graduate Admissions  
Colorado State University – Office of Admissions  
1062 Campus Delivery  
Fort Collins, CO 80523-1062

## Check Your Application Status

View your [application status](#) at any time to ensure your application checklist is complete or to check on updates. Once your complete application, including supporting materials, is received, the department admission committee will review your application and notify you of their decision.

## International Students

See [website](#) for test score and transcript requirements.