# PH.D. IN COMPUTER ENGINEERING

The Ph.D. in Computer Engineering creates future leaders in the thriving field of computer engineering. Under the tutelage of renowned computer engineering faculty, graduates of this program produce significant contributions and original research to advance next generation electronics and computing.

Offering a highly customizable curriculum, this program specializes in the following areas: biomedical engineering, communications and signal processing, computer engineering, controls and robotics, electromagnetics and remote sensing, and lasers and photonics.

Students pursuing a Ph.D. in Computer Engineering complete a research-oriented plan of study involving a dissertation and coursework. Interested applicants should refer to CSU's Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/) and the Electrical and Computer Engineering Department (http://www.engr.colostate.edu/ece/) website.

## Learning Objectives

Upon successful completion, students will be able to:

1. Identify, formulate, and solve advanced research problems using fundamental computer engineering principles, methodologies, and tools.
2. Produce important contributions and add to the body of knowledge through peer-reviewed, high-impact publications.
3. Demonstrate effective oral and written communication to convey technical concepts to both engineers and non-engineers.
4. Demonstrate professional behavior and understand the ethical, economic, environmental, and societal impacts of their work.
5. Serve as leaders in Computer Engineering research.

## Requirements Effective Fall 2024

| Code | Title | Credits |
|---|---|---|
| **M.S. EARNED** | | |
| M.S. Degree | | 30 |
| **Regular Coursework** [1, 2, 3] | | **9-18** |
| | Any regular course approved by advisor and graduate committee | |
| | CS 5XX Any CS course at the 500-level (excluding courses numbered 582-599) | |
| | CS 6XX Any CS course at the 600-level (excluding courses numbered 682-699) | |
| | ECE 5XX Any ECE course at the 500-level (excluding courses numbered 582-599) | |
| | ECE 6XX Any ECE course at the 600-level (excluding courses numbered 682-699) | |
| | ECE 7XX Any ECE course at the 700-level (excluding courses numbered 782-799) | |
| | MATH 5XX Any MATH course at the 500-level (excluding courses numbered 582-599) | |
| | MATH 6XX Any MATH course at the 600-level (excluding courses numbered 682-699) | |
| | MATH 7XX Any MATH course at the 700-level (excluding courses numbered 782-799) | |
| | PH 5XX Any PH course at the 500-level (excluding courses numbered 582-599) | |
| | PH 6XX Any PH course at the 600-level (excluding courses numbered 682-699) | |
| | PH 7XX Any PH course at the 700-level (excluding courses numbered 782-799) | |
| ECE 799 | Dissertation | 24-33 |
| **Program Total Credits:** | | **72** |

A minimum of 72 credits are required to complete this program.

1. Courses not accepted as regular include all courses ending in the range -82 through -99.
2. All coursework must be 500-level or higher. No 400-level coursework is permitted.
3. Students who have two or more papers accepted for publication in peer-reviewed journals or peer review conference proceedings may petition their Graduate Committee to approve an "Independent Study" ECE 795 course to replace 3 credits of the required 9 credits of regular course work.

| Code | Title | Credits |
|---|---|---|
| **NO M.S. EARNED** | | |
| **Regular Coursework** [1, 2, 3] | | **30-39** |
| | Any regular course approved by advisor and graduate committee | |
| | CS 4XX Any CS course at the 400-level (excluding courses numbered 482-499) | |
| | CS 5XX Any CS course at the 500-level (excluding courses numbered 582-599) | |
| | CS 6XX Any CS course at the 600-level (excluding courses numbered 682-699) | |
| | ECE 4XX Any ECE course at the 400-level (excluding courses numbered 482-499) | |
| | ECE 5XX Any ECE course at the 500-level (excluding courses numbered 582-599) | |
| | ECE 6XX Any ECE course at the 600-level (excluding courses numbered 682-699) | |
| | ECE 7XX Any ECE course at the 700-level (excluding courses numbered 782-799) | |
| | MATH 4XX Any MATH course at the 400-level (excluding courses numbered 482-499) | |
| | MATH 5XX Any MATH course at the 500-level (excluding courses numbered 582-599) | |
| | MATH 6XX Any MATH course at the 600-level (excluding courses numbered 682-699) | |
| | MATH 7XX Any MATH course at the 700-level (excluding courses numbered 782-799) | |
| | PH 4XX Any PH course at the 400-level (excluding courses numbered 482-499) | |
| | PH 5XX Any PH course at the 500-level (excluding courses numbered 582-599) | |

| | | |
|---|---|---|
| | PH 6XX Any PH course at the 600-level (excluding courses numbered 682-699) | |
| | PH 7XX Any PH course at the 700-level (excluding courses numbered 782-799) | |
| ECE 799 | Dissertation [4] | 33-42 |
| or ECE 699 | Thesis | |
| **Program Total Credits:** | | **72** |

A minimum of 72 credits are required to complete this program.

1 Courses not accepted as regular include all courses ending in the range -82 through -99.

2 A maximum of 8 credit hours of 400-level undergraduate coursework will be counted to the degree. Remaining credits must be in 500-level or higher courses.

3 Students who have two or more papers accepted for publication in peer-reviewed journals or peer review conference proceedings may petition their Graduate Committee to approve an "Independent Study" (ECE 795) course to replace 3 credits of the required minimum 30 credits of regular course work.

4 Students may take a combination of ECE 699/ECE 799.

# Requirements for All Graduate Degrees

For more information, please visit Requirements for All Graduate Degrees (https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/) in the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).

# Summary of Procedures for the Master's and Doctoral Degrees

NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (https://graduateschool.colostate.edu/deadline-dates/). Students should consult this schedule whenever they approach important steps in their careers.

Forms (https://graduateschool.colostate.edu/forms/) are available online.

| Step | Due Date |
|---|---|
| 1. Application for admission (online) | Six months before first registration |
| 2. Diagnostic examination when required | Before first registration |
| 3. Appointment of advisor | Before first registration |
| 4. Selection of graduate committee | Before the time of fourth regular semester registration |
| 5. Filing of program of study (GS Form 6) | Before the time of fourth regular semester registration |
| 6. Preliminary examination (Ph.D. and PD) | Two terms prior to final examination |
| 7. Report of preliminary examination (GS Form 16) - (Ph.D. and PD) | Within two working days after results are known |
| 8. Changes in committee (GS Form 9A) | When change is made |
| 9. Application for Graduation (GS Form 25) | Refer to published deadlines from the Graduate School Website |
| 9a. Reapplication for Graduation (online) | Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying |
| 10. Submit thesis or dissertation to committee | At least two weeks prior to the examination or at the discretion of the graduate committee |
| 11. Final examination | Refer to published deadlines from the Graduate School Website |
| 12. Report of final examination (GS Form 24) | Within two working days after results are known; refer to published deadlines from the Graduate School website |
| 13. Submit a signed Thesis/Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/dissertation | Refer to published deadlines from the Graduate School website. |
| 14. Submit the thesis/dissertation electronically | Refer to published deadlines from the Graduate School website |
| 15. Graduation | Ceremony information is available from the Graduate School website |