# COMPUTER SCIENCE EDUCATION, MS

This degree program is intended for those with a passion for the teaching and learning of computational thinking, computer science, and information technology skills. By developing both content knowledge and pedagogical skills related to the computing disciplines, this program is ideal for educators looking to empower young people to become the creators of next generation technologies.

In completing program coursework, certified Nebraska teachers will also meet requirements for the IT supplemental endorsement. Teachers from other states should consult with with their corresponding state officials to consider local credentialing applicability.

## Program Related Information

### Program Contact

Alfredo Perez, PhD, Graduate Program Chair (GPC)
402.554.3976
alfredoperez@unomaha.edu

Michelle Perone, Graduate Advisor
402.554.3819
mperone@unomaha.edu

### Prospective Student Admission

advising-cist@unomaha.edu

### Program Website (http://www.unomaha.edu/college-of-information-science-and-technology/computer-science-education/graduate/ms-csed.php)

### Other Program Related Information

Students who hold current Nebraska teaching certification are eligible for the IT Supplemental Endorsement upon successfully completing the 15 hour core courses.

Grades of 'C' or lower cannot be used when applying for the State of Nebraska IT Supplemental Endorsement.

#### Student Learning Outcomes

Upon completion of the MS in computer science education, students will be able to:

- Demonstrate CS knowledge and skills by creating computational artifacts.
- Articulate a vision for fair practices in CS education.
- Responsively implement evidence-based pedagogy to facilitate meaningful learning experiences.
- Design learning experiences that implement evidence-based pedagogy.
- Describe relevant and recent research finding in computer science education including how they might be applied in the classroom.

## Admissions

General Application Requirements and Admission Criteria (http://catalog.unomaha.edu/graduate/admission/)

### Application Deadlines

- Spring 2026: December 1
- Summer 2026: April 1
- Fall 2026: July 1

### Other Requirements

- **English Language Proficiency:** Applicants are required to have a command of oral and written English. Those who do not hold a baccalaureate or other advanced degree from the United States, **OR** a baccalaureate or other advanced degree from a predetermined country on the waiver list (https://www.unomaha.edu/office-of-graduate-studies/admissions/entrance-exams.php), must meet minimum language proficiency score requirement in order to be considered for graduate admission.
  - Internet-based TOEFL: 80, IELTS: 6.5, PTE: 53, Duolingo: 110
- **Statement of Purpose** addressing the following:
  - Describe your academic and professional journey. Discuss your background personal and professional experiences, and your current educational context. Be sure to explain your motivation for pursuing this program at this point in your career.
  - In order to advise you on initial coursework, please describe any prior formal or informal training you have completed in computing, computer science, and information technology. This includes, but is not limited to programming/coding, web design, systems administration, computing networking, databases, and computer applications.
  - Discuss your post-master's degree plans. How will the MS in computer science education contribute to your future endeavors related to P-12 students, educators, administrators or other community stakeholders.
- **Resume:** Professional resume or curriculum vitae
- Copy of your current teacher certification (if applicable)
- International students who do not intend to teach in the United States may be eligible for admission.

## Degree Requirements

| Code | Title | Credits |
|---|---|---|
| **Required Core Courses** | | **15** |
| TED 8006 | SPECIAL METHODS IN THE CONTENT AREA | 3 |
| CSTE 8020 | EXPLORING COMPUTER SCIENCE FOR TEACHERS | 3 |
| or CSTE 8030 | COMPUTER SCIENCE PRINCIPLES FOR TEACHERS | |
| CSTE 8040 | OBJECT ORIENTED PROGRAMMING FOR TEACHERS | 3 |
| CSCI 8366 | PRINCIPLES OF SECURE SYSTEM DESIGN | 3 |
| or CYBR 8366 | PRINCIPLES OF SECURE SYSTEM DESIGN | |
| CSCI 8836 | INTRODUCTION SOFTWARE ENGINEERING | 3 |
| or CSCI 8256 | HUMAN COMPUTER INTERACTION | |
| or CSCI 8266 | USER EXPERIENCE DESIGN | |
| or HCC 8220 | DESIGN PROCESS | |
| **Required Extension Courses** | | **6** |
| CSCI 8010 | FOUNDATIONS OF COMPUTER SCIENCE | 3 |
| TED 8050 | DATA-DRIVEN DECISION MAKING FOR EDUCATORS | 3 |
| or TED 8860 | INVENTION & INNOVATION IN ENGINEERING EDUCATION | |
| **Electives** | | **3-6** |

The following courses are considered standing electives that have already been approved for all students. Students may request a course not listed here be counted as an elective in writing to the GPC. Such requests should be made prior to enrolling in the course.

| | | |
|---|---|---|
| All graduate courses offered by the College of IS&T not counted elsewhere in the plan of study, including BMI, CIST, CSCI, CSTE, CYBR, ISQA, and HCC 8xxx | | |
| CSTE 8920 | SPECIAL TOPICS IN CS EDUCATION | |
| MTCH 8040 | TOPICS IN MATHEMATICAL COMPUTING | |
| STEM/TED 8420 | TRENDS AND TEACHING STRATEGIES IN SCIENCE EDUCATION | |
| STEM/TED 8430 | SCHOOL CURRICULUM PLANNING | |
| STEM/BIOL 8450 | BIOLOGY EDUCATION RESEARCH METHODS | |
| STEM/TED 8840 | ENGINEERING EDUCATION EXTERNSHIP | |
| TED 8540 | DIGITAL CITIZENSHIP | |
| TED 8550 | TECHNOLOGY FOR CREATIVE AND CRITICAL THINKING | |
| TED 8580 | ONLINE TEACHING AND LEARNING | |
| TED 8050 or TED 8860 can also be used as electives if not used as extension coursework. | | |
| **Exit Requirement** | | **3-6** |
| **Thesis Option** [1] | | **6** |
| CSTE 8990 | THESIS | |
| **Project Option** [2] | | **6** |
| CSTE 8960 | THESIS EQUIVALENT PROJECT IN CS EDUCATION | |
| **Capstone** [3] | | **3** |
| CSTE 8910 | CAPSTONE IN CS EDUCATION | |
| **Total Credits** | | **30** |

1 Thesis credits must be completed over two or more academic terms.
2 Project credits must be completed over two or more academic terms.
3 The capstone course may only be taken upon completion of at least 21 credit hours in the program.