**CS@Mines** prepares students to develop computational innovations that create solutions to problems in a variety of fields. With a commitment to improving computer science education and diversity, this graduate program brings together faculty and students with common interests in applying computational power and thinking to the world. The department offers two online certificates, as well as the degrees master of science and doctor of philosophy in computer science. These degree programs demand academic rigor and depth yet also address real-world problems. All of these degree options prepare candidates for exciting and fulfilling careers in industry, government and academia.

**DEGREE OPTIONS**

- **Doctor of Philosophy**: 72 credit hours, comprised of coursework and research credits. PhD students must pass the qualifying exam and complete and successfully defend a satisfactory thesis.

- **Master of Science (thesis based)**: 30 credit hours, comprised of 21 credit hours of coursework plus 9 credit hours of thesis research. Students must write and orally defend a thesis.

- **Master of Science (non-thesis)**: This option consists of either the project track or the coursework track, both comprised of 30 credit hours. The project track requires 24 credit hours of coursework, plus 6 credit hours of project credit. The coursework track requires 30 credit hours of coursework.

- **Certificates**: Computer Science Professional option comprised of 15 credit hours or Cyber Security for Cyber Physical Systems comprised of 12 credit hours.
RESEARCH AREAS

The Department’s research falls into three core fields of Computer Science:

1. **Systems** (e.g., High Performance Computing, Programming Languages, Cybersecurity, and Networking)
2. **Intelligence** (e.g., Robotics and Machine Learning)
3. **Algorithms** (e.g., Classical, Learning, and Game-Theoretic).

Some faculty also do research in CS Education and, in many cases, individual research projects encompass more than one research area.

CERTIFICATES

Certificates can be completed through online or in-person coursework.

**Computer Science Professional Certificate:** Intended for those without a background in CS to build foundational knowledge in computing. Applicants must have a Bachelor’s degree or equivalent in an area that is not CS.

**Cybersecurity for Cyber Physical Systems Graduate Certificate:** Undergraduate-level CS background and programming skills are required. This certificate will provide students the skills needed for careers in cyber security and privacy.

ADMISSION REQUIREMENTS (MS, PHD)

- A bachelor’s degree with a grade point average of 3.0 on a 4.0 scale.
- Completion of two semesters of calculus, and computer science courses in programming concepts, data structures, computer organization, software engineering and discrete math.
- Competitive Graduate Record Examination (GRE) scores (verbal reasoning, quantitative reasoning, and analytical writing), with quantitative section score of 151 or higher (or 650 on the old scale). Applicants who have graduated from Mines within the past five years are not required to submit GRE scores.
- For international applicants or applicants whose native language is not English, a TOEFL score of 79 or higher (or 550 for the paper-based test, 213 for the computer-based test) is required. In lieu of a TOEFL score, an IELTS score of 6.5 or higher will be accepted.

ACCEPTING APPLICATIONS

TO LEARN MORE, VISIT

gradprograms.mines.edu/cs or contact csgrad@mines.edu