

<!--mstheme-->College of Engineering and Applied Science<!--mstheme-->

<!--mstheme-->Department of Computer Science



<!--mstheme-->Guidelines for<!--mstheme-->

<!--mstheme-->Master of Engineering in Cybersecurity

Last Updated: August 2021<!--mstheme-->



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| Cybersecurity has become critical and increasingly urgent in today's critical network, information systems and infrastructures. Cybersecurity deals with operations that protect and defend these systems and infrastructures by ensuring properties such as availability, integrity, authentication, confidentiality, and non-repudiation. To accommodate the increasingly demand for well-educated information technology and cybersecurity-related personnel in government, military, and industries, the University of Colorado Colorado Springs has established the Master of Engineering degree in Cybersecurity by offering a unique environment to study, learn, and share experiences surrounding this special engineering discipline. Our faculty have a broad spectrum of backgrounds and expertise, covering all kinds of cybersecurity related fields; many have years of experience in industry prior to joining the faculty. The curriculum includes courses designed to prepare individuals, who engineer, develop, and operate network and information systems, and infrastructure with knowledge of principles, methods, techniques, and tools. Courses are offered in the late afternoon and evening to accommodate the schedule of working professionals. **Admission Requirements** 1. A Bachelor of Science or a Bachelor of Arts degree in Mathematics, Computer Science, Engineering, Information Systems, or equivalent.
2. An overall undergraduate grade point average of 3.0 (on a scale of 4.0; awarded within the past five years) or minimum 148 GRE (quantitative). Applicants with a grade point average of less than 3.0 or an undergraduate degree awarded more than five years ago will be admitted on a case-by-case basis. Applicants with a grade point average between 2.75 and 3.0 awarded within the past five years may be admitted provisionally.
3. It is recommended the applicant have two years of experience with Commercial, Industrial or Government software development or network administration.
4. A concise statement of experience and career goals.
5. Completed online application including official transcripts and three letters of recommendation.

**Required Prerequisites** 1. Knowledge of a modern programming language, such as, Java, C#, or C++
2. [CS 145](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Data Structures and Algorithms
3. [CS 208](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Programming with Unix
4. [CS 216](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Computer Organization and Assembly Language Programming

**Required Courses: 30 Hours** **Required Courses (15 credit hours)**1. [CS 520](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Computer Architecture (Prerequisites: CS 2160)
2. [CS 522](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Computer Communication (Prerequisites: CS 2060, CS 2080)
3. [CS 550](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Operating Systems (Prerequisites: CS 2060, CS 2080, CS 4200/5200)
4. [CS 591](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Fundamentals of Computer/Network Security (Prerequisites: CS 2080, MATH 2150)
5. [CS 592](http://www.uccs.edu/~pubs/bulletinsite/site/coursedesc/engineering.htm)0 Applied Cryptography for Secure Communications (Prerequisite: CS 5220)

Prior completion of cross-listed courses: In the case a student has previously completed the undergraduate version of a required course (e.g., CS 4200 vs. CS 5200), the student will be required to substitute another graduate-level course in its place. The result is that the student will take an additional course for each replaced required course under the selected Degree Completion Courses alternative. Degree Completion Courses: (15 credit hours) **Thesis Option:**Complete CS 7000, Master Thesis (6 credit hours) and 3 courses from the approved list of courses. The student's Graduate Committee must approve the courses selected. **Course Only Option**: Complete a total of 10 graduate level classes. The student's advisor must approve the courses selected. Up to 2 classes from outside the Computer Science Department may be included with advisor approval.***Degree Requirements*** 1. An overall 3.0 grade point average in all graduate work.
2. Advisor chosen prior to completing 12 credit hours of graduate course work.
3. All work applied to the degree must be accomplished within a six-year time limit.
4. Up to 9 hours of graduate work may be transferred from an accredited graduate program at another institution or taken as a non-degree seeking student at UCCS, provided: i. Course work has not been used for any other degree, ii. Grade earned for the course(s) is B or better, iii. The course work has been taken within past six years, iv. The course coverage is equal in level, content, and depth to the course for which it is being substituted.
5. All courses included to count for this degree must be part of an approved plan of study. This plan must be developed by the student and approved by his/her advisor before completing 12 credit hours of course work.
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| [Department of Computer Science](http://eas.uccs.edu/CS/Graduate/%3C?=$csrootdir;?%3e), University of Colorado at Colorado Springs, Engineering Building Room 199 1420 Austin Bluffs Parkway, Colorado Springs, Colorado 80918. Phone: 719-255-3325, Fax: 719-255-3369 |  |

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*<!--mstheme-->*IV. Further Information*<!--mstheme-->*

For more information, call (719) 255-3325, visit our Web site at <http://eas.uccs.edu/cs/default.shtml>, or e-mail csinfo@uccs.edu.