University of Colorado
Colorado Springs

College of Engineering and Applied Science
Department of Computer Science

Guidelines for
Master of Engineering in Cybersecurity
Last Updated: March 2022

Cybersecurity has become critical and increasingly urgent in today's critical networks, 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 increasing 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.

I. 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 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 has 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.

II. Required Prerequisites

1. Knowledge of a modern programming language, such as, Java, C#, or C++
2. CS 1450 Data Structures and Algorithms

3. CS 2080 Programming with Unix
4. CS 2160 Computer Organization and Assembly Language Programming

III. Required Courses: 30 Hours

Required Courses (15 credit hours)

1. CS 5200 Computer Architecture (Prerequisites: CS 2160)
2. CS 5220 Computer Communication (Prerequisites: CS 2060, CS 2080)
3. CS 5500 Operating Systems (Prerequisites: CS 2060, CS 2080, CS 4200/5200)
4. CS 5910 Fundamentals of Computer/Network Security (Prerequisites: CS 2080, MATH 2150)
5. CS 5920 Applied Cryptography for Secure Communications (Prerequisite: CS 5220)

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.

IV. 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 the student's advisor before completing 12 credit hours of course work.

V. Further Information

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.

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