

## **FACT**

Jobs for computer scientists and database administrators with master's degrees are expected to grow 15 percent from 2012 to 2022 and jobs for network systems and data communications analysts are expected to grow more than 50 percent in the same period.

*Source: Occupational Outlook Handbook 2014 – 15, Bureau of Labor Statistics*

## **Outstanding Preparation**

The graduate major in Computer Science is an applications-focused program with a software engineering orientation. It is designed to prepare students for employment as software engineering professionals in a wide range of business, industrial, and government settings.

It includes the theoretical base necessary to provide flexibility for meeting future professional needs, as well as enabling students to pursue doctoral studies at another institution should they wish to do so.

The program is designed for the practicing professional in the field. The principal themes are the design and development of software, systems programming, applications programming, and the effective use of software resources. As new kinds of computers emerge, software based on the most modern theories and procedures will be needed. Economic pressures will require effective and efficient linking of hardware and software systems. Those who best understand the development and management of software resources will be in the strongest position to derive benefits from these changes.

## **Research**

Faculty research interests range widely and include object-oriented programming, Windows programming, operating systems, artificial intelligence, information security, digital forensics, Internet programming, and database systems. Research interests are reflected in the regularly scheduled courses and the special topics courses offered by the faculty.

## **Faculty Advisor:**

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# Master of Science in Computer Science

# College of Arts and Sciences

## Special Admissions Requirements

In addition to meeting university admissions criteria, applicants must have completed a bachelor's degree with a GPA of 2.75 or higher and maintained a GPA of 3.0 or higher for any graduate work attempted.

## Program Prerequisites

The graduate curriculum is based upon the completion of an undergraduate major in Computer Science that possesses a significant software engineering orientation. A bachelor's degree in Computer Science, however, is not required for admission into the graduate program. Students who have earned their baccalaureate degrees in other areas will be required to complete appropriate prerequisite courses in addition to those required for the master's degree. Essentially, applicants should have completed the equivalent of the following courses with a grade of "C" or better in each course:

CPSC - 3148 Computer Programming: Java (3)  
CPSC - 3310 Intro To Object-oriented Programming (3)  
CPSC - 4190 Introduction to Software Engineering (3)  
CPSC - 4205 Computer Organization (3)  
CPSC - 4335 Operating Systems (3)  
CPSC - 4338 Discrete Structures (3)  
CPSC - 4342 Introduction to Computer Networks (3)  
CPSC - 4345 Database Systems (3)  
CPSC - 4355 Data Structures and Algorithms (3)

Other courses may appear among the prerequisites for elective courses and therefore be required.

## Master's Final Project Option

In the graduate seminar option, students participate in a seminar class, developing a team project in conjunction with other classmates and the seminar faculty member, developing a project solution, and participating in a group presentation of the project. The seminar project will provide evidence of the ability and efforts to carry out a major application of theory or advanced methods in computer science. The seminar project is appropriate for students seeking to broaden their practical experience and work in a team setting similar to those encountered in the computer and information technology workplace.

In the project option, students develop a master's project proposal, complete the project in conjunction with a faculty member, and prepare a final report. This option allows students to broaden their practical experience and to gain more depth in a particular area of computer science in preparation for employment.

## Admission to Candidacy

After admission as a degree-seeking student, a student also must be admitted to candidacy. To qualify for degree candidacy, a student must:

1. complete the prerequisite course work listed above with a grade of "C" or better in each course;
2. complete at least half of the courses listed under Required Courses below with a GPA of 3.0 or higher; and
3. complete an approved proposal for a thesis topic or a master's project.

## Degree Requirements

Students must meet all university requirements for a master's degree.

## Required Courses (15 Hours)

CPSC - 8720 Internet Programming (3)  
CPSC - 8735 Advanced Operating Systems (3)  
CPSC - 8810 Formal Languages and Automata (3)  
CPSC - 8820 Planning & Mgmt of Software Projects (3)  
CPSC - 8845 Advanced Database Concepts (3)

## Graduate Seminar/Thesis Option (3 or 6 Hours)

Select one of the following options:

Thesis Option (6 Hours):  
CPSC - 8900 Graduate Thesis/Project (6)  
CPSC - 8990 Thesis Presentation (1)

Graduate Seminar Option (3 Hours):  
CPSC - 8985 Grad Seminar in Computer Science (3)

## Electives (12 to 15 Hours)

## Total - 33 Hours

2016 – 17 Catalog Year

