



Master of Science in Computer Science - Starting Fall 2020

The program is 30 credit hours and is offered in two formats:

1. 100% online with no on campus requirement
2. 100% face-to-face during traditional daytime classes (8am - 5pm) offering 9 credits per semester.

Classes may be taken in any order in either of the 2 formats including some online and some face to face.

For more information, contact:

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CS Tech Core - all concentrations within the Computer Science Department will take the following classes as a shared technology core.

CSC510 Vocational Computing - an advanced course in current trends in vocations related to technology and the related dilemmas. Technology tends to amplify our actions and there are ethical considerations when leveraging technology to solve problems that may not be obvious. This is an extension of the undergraduate course (CSC410) which focuses on the fundamentals of ethics at they relate to computing. This course deals with modern trends and how those fundamentals are repurposed today in a constantly changing world.

CSC515 AI - an advanced course in current trends in Artificial Intelligence that builds on our undergraduate AI course (CSC415). An emphasis will be placed on emerging tools as well as robotics.

CSC525 Cybersecurity - an advanced course in current trends in Cyber Security and Penetration Testing that builds on our undergraduate Cybersecurity course (CSC426). Emphasis will be put on emerging threats and their detection, prevention, and recovery.

CSC530 User Experience (UX) - an advanced course in current trends involving how humans use technology and the appropriate and changing interfaces required. This is an extension of the undergraduate Human Computer Interaction course (CSC420) which emphasizes fundamental user experience theory. CSC530 tackles emerging technologies and their unique interface requirements with human beings.

CSC540 Applied Computer Networking - an advanced course in current trends in Computer Networking and Security that builds on our undergraduate Networking course (CSC420). Focus is placed on advanced topics still related to traditional computer networking concepts.

CSC548 Mobile Computer Architecture - an advanced course in current trends in Computer Architecture with a specific emphasis put on decisions related to mobile devices that needs to weigh battery life, heat, and performance more critically than traditional computer systems. This course builds on our undergraduate Architecture course (CSC325)

CSC560 Applied RESTful APIs and Integrations - an advanced course in current trends in server side web development that builds on our undergraduate web technology course (CSC460). This course takes content from several undergraduate courses in data structures (CSC300), software engineering (CSC370), database (CSC430), and web technologies (CSC460) and focuses on the creation of http based CRUD services that provide real-time data to integrating applications.

CSC580 Internship (not required) - a course that directly attaches to an internship opportunity in related to MSCS.

MSCS Concentrations:

Software Engineering

CSC543 Advanced Algorithms - an advanced course in current trends in Problem Solving and Algorithms that builds on our undergraduate courses data structure (CSC300) and CS Theory (CSC490). This course will look at emerging algorithms across the grand ideas of computer science. As new technologies emerge, new algorithms must be explored to support them.

CSC 547 Compilers - an advanced course in current trends of compiler design and implementation. Students will create a modern trends inspired compiler for a well known modern programming language.

CSC 549 Language Theory - an advanced course in current trends of programming language design and implementation. Students will create a modern trends inspired programming language and solve traditional problems using their creation. This course builds on our undergraduate language theory class (CSC470).

Information Systems

CSC 552 Advanced Networking - an advanced course which focuses on modern trends in computer networking technology. While this course will be related to the other networking course in this curriculum, it takes a different approach. Focus is placed on advanced topics related to emerging computer networking concepts.

CSC545 System Design - an advanced course which focuses on the design of software and hardware based systems and their related integrations. This course explores the problem solving approach involved in taking a project proposal and turning it into a working, multi-technology solution.

CSC550 System Admin - an advanced course which focuses on the administration and maintenance of existing systems. This course deals with the unique administration problems associated with system solutions for emerging technologies.