



Master of Science in Computer Networking

Program Overview

The Master of Science in Computer Networking (MSCN) distance education program is designed for students with an undergraduate degree in computer science, computer engineering or electrical engineering who wish to pursue a graduate degree in computer networking. It is a 31 credit hour degree program that does not require a thesis, final oral exam or on-campus residency.

Admission Requirements

The MSCN program is jointly managed by the Computer Science department and the Electrical and Computer Engineering department. In order to seek admission to the MSCN program, you need to apply either to the Computer Science department or to the Electrical and Computer Engineering department.

Students should have the following background in order to be considered for admission into the MSCN degree program:

- Three semesters of calculus (MA 141, MA 241, and MA 242, or equivalent)
- One semester of probability/statistics (ST 370, or MA 421, or equivalent)
- Two semesters of an object-oriented language (CSC 116 and CSC 216 or equivalent)
- Data structures (CSC 316)
- One semester of computer organization (CSC 236)
- One semester of signals and systems or discrete mathematics (ECE 200 or CSC 226)

The distance education MSCN degree program is limited to those individuals who work or reside in the United States and to United States military personnel serving overseas. The Graduate School requires that all international applicants take the TOEFL examination if they have not received a degree from a U.S. institution. GRE scores will be required beginning with applicants for the spring 2013 semester.

Degree Requirements

- Completion of 31 credit hours of graduate coursework, of which 3 credit hours must be 700-level courses.
- Completion of 9 credit hours of computer networking core courses.
- Completion of 3 credit hours of computer networking theory courses.
- Completion of a 1 credit hour graduate orientation course (CSC 600 or ECE 600).
- Completion of 18 credit hours of additional computer networking courses from any of the four technical concentration areas (Networking Design, Network Hardware, Network Software, Networking Services).

All requirements for the degree must be completed within six years of enrolling in the first course appearing on the NC State graduate transcript. Admitted students must comply with the Graduate School regulations for continuous enrollment or must request a leave of absence not to exceed one year. You can find out more about the degree requirements at <http://networking.ncsu.edu/distance.php>.

Course Registration

It is preferable to seek admission to the MSCN program as soon as possible to assure integration into the advising process. However, a person does not have to be admitted to a degree program to enroll in an online credit course. Prior to applying to Graduate School, a qualified individual may enroll in Engineering Online courses as a Non-Degree Studies (NDS) student. The NDS classification is designed for individuals who wish to undertake academic work but who are not currently admitted to a degree program. If the student is admitted to the MSCN program, a maximum of twelve hours taken as a NDS student or from another institution may apply toward the 31 credit hour requirement. Students register for online courses through Engineering Online. Those who wish to take only a few courses and not pursue a degree do not need to apply for formal program admission to NC State University. However, students who wish to earn the MSCN degree must formally apply for admission to the Graduate School at <http://www.ncsu.edu/grad>. When completing the online application, please be sure to select the "Distance Track" version of the degree.

To register for an Engineering Online course, complete the registration form on the Engineering Online website at <http://engineeringonline.ncsu.edu> by clicking on "Registration". Students cannot register through the University MyPack Portal system for Engineering Online courses.

Course Offerings

A list of distance education courses available for each semester can be found on the Engineering Online website. Full-time employed individuals may only enroll in two online courses per semester. It is highly recommended that new students enroll in only one course during their first semester.

Courses for the Graduate Plan of Work are selected with the concurrence of the student's advisor from the following courses and others that may become available.

Core Course Requirements

All students must take three of the four core networking courses for a total of 9 credit hours.

- CSC/ECE 570 – Computer Networks
- CSC/ECE 573 – Internet Protocols
- CSC/ECE 575 – Introduction to Wireless Networking
- CSC/ECE 576 - Networking Services: QoS, Signaling, Processes

Networking Theory

All students must take at least one networking theory course for a total of 3 credit hours.

- CSC/ECE 505 – Design and Analysis of Algorithms
- CSC/ECE 565 – Graph Theory
- CSC/ECE 579 – Computer Performance Modeling
- CSC/ECE 776 – Performance Evaluation of Computer Networks
- CSC/ECE 777 – Telecommunications Network Design

Networking Tracks

All students must earn 18 credit hours by taking six courses from any of the following four networking tracks. Courses may be chosen from a single track or across several tracks.

- Networking Design
- Network Hardware
- Network Software
- Networking Services

For a list of distance education courses approved for the fall, spring or summer semester, visit the Engineering Online web site at <http://engineeringonline.ncsu.edu>.

For more complete information about the Master of Science in Computer Networking degree program including the courses in each concentration, please visit the program website at <http://networking.ncsu.edu/distance.php>.

Course Logistics

Online courses are the same as on campus courses in terms of content, requirements and academic rigor. On-campus class lectures are captured, digitized and placed on the Internet for distance students to access at any time and from any location. Students must, however, follow the on-campus class schedule in terms of submitting homework and taking exams. Course assignments, lecture notes, and handouts are made available to distance students on the course website. All in-class exams must be proctored.

Contact Information

- For more information about the MSCN program (admitted through the CSC department), contact:

Dr. Harry Perros, Professor and Program Coordinator of MSCN
Department of Computer Science
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Department website: <http://www.csc.ncsu.edu>

- For more information about the MSCN program (admitted through the ECE department), contact:

Dr. Mihail Sichitiu, Associate Professor and Program Coordinator of MSCN
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Department website: <http://www.ece.ncsu.edu>

- For more information about the registration process, course offerings and course logistics, contact:

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Engineering Online website: <http://engineeringonline.ncsu.edu>