Master of Science in Computer Networking

The Department of Electrical Engineering and Computer Science offers a Master of Science degree in the area of computer networking. This area has become an essential component of any effort for economic and social progress. Demand for networking experts in the USA is expected to multiply exponentially during the next two decades, as more small businesses and individual citizens “go online.”

A Promising Career
As hardware technology continues to advance at a very high rate, computers will become even more integrated into all sectors of our society. Indeed, we have started to witness “society” being redefined at a global scale, where business owners, doctors, engineers and other professionals can provide their services across the globe in real time. Most organizations have started to encourage their customers and employees to utilize online services. Such unprecedented integration of computer technology into various aspects of ordinary life will make it very difficult for any individual citizen or business of any size to remain offline for any period of time. This is certain to increase the demand for networking experts who would design, deploy, support, and maintain computer networks.

According to the US Bureau of Labor Statistics (www.bls.gov), “Employment of computer network architects is projected to grow 15 percent from 2012 to 2022, faster than the average for all occupations.” Graduates of this MS program will have expertise in both hardware and software technologies which will prepare them for a successful career to meet the growing demand for networking experts.

Admission Requirements
The MS in Computer Networking Program admits students with a bachelor’s degree in computer science, computer engineering, electrical engineering, or an area related to information technology. Students from other areas with at least one year of university-level engineering mathematics may be admitted with an extra requirement to complete some undergraduate background deficiency courses prescribed at the time of admission.

To be considered for admission to the program, a student must have earned a GPA of at least 3.000 (or equivalent score from another country) in the bachelor’s degree. Students whose bachelor’s degree is from an institution outside the U.S. are required to submit official scores of the GRE General Test along with the admission application.

English Proficiency
Non-native speakers of English must provide either an official TOEFL score of at least 79 on the internet based test, OR an overall minimum band score of 6.5 on the IELTS examination, OR a minimum score of 58 on the PTE-Academic.

Program Structure
The Master of Science in Computer Networking (MSCN) degree program prepares graduate students for career-oriented jobs in the rapidly-growing
computer networking industry, or gaining admission into PhD programs around the world. Its curriculum is designed to ensure that students can study theoretical foundations of computer networking as well as modern research trends in courses taught by active researchers having national and international recognition.

**Degree Requirements**

**Major area courses:** Each MSCN student must take at least 18 credit hours of major area courses that are listed on the EECS department’s website. Courses taken from this group must include:
- CS 736, Data Communications Networks
- CS 721, Advanced Algorithms and Analysis OR
- CS 731, Mathematical Foundations for Computer Networking

At least 12 credit hours of 800-level or higher courses (including thesis or project, if any)

At least 3 credit hours of courses with a research writing and presentation component.

**Electives:** Up to 12 credit hours of 600-level or higher courses other than the major area courses may be taken by a student, including, at most, 6 credit hours of courses outside the department, approved by the student’s adviser.

**Graduating Options:**
- **Thesis option** – at least 30 credit hours, including 6 hours of thesis, CS 892.
- **Project option** – at least 33 credit hours, including 3 hours of project, CS 891.
- **Coursework option** – at least 36 credit hours.

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**Faculty**

Visvakumar Aravindhan, Associate Professor
Abu Asaduzzaman, Associate Professor
Rajiv Bagai, Associate Professor
Debswapna Bhattacharya, Assistant Professor
Zheng Chen, Assistant Professor
Yanwu Ding, Associate Professor
Ali Eslami, Assistant Professor
Keenan Jackson, Lecturer
Murtuza Jadliwala, Assistant Professor
Hufeza Kagdi, Associate Professor
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