



MS in Computer Science with Computer Engineering Specialization

M.S. Program in Computer Science (Computer Engineering Specialization) - Through Fall 2011

Applicants must have a Bachelor of Science degree in Computer Science, Computer Engineering, Electrical Engineering, or a related scientific or engineering field. Background should be similar to the UNL program for a Bachelor of Science in Computer Engineering.

Degree Options

Requirements for the Master's degree may be satisfied through one of two options. Before exercising these options a student should discuss this with his or her advisor. The thesis option (Option I) is intended for students who intend to pursue a career in research or planning for further graduate study. The project option (Option III) is generally recommended for students who plan on the MS being a terminal degree. Both thesis and project option students will work with a supervisory committee of three faculty members who will oversee the work and review the student's final report. A final oral exam is required of all students.

Course Requirements

The courses listed below constitute basic required Core Courses. The requirement for a specific core course is satisfied if its 400--level counterpart was taken prior to admission into this degree program. In that case, the 800--level course may not be taken for degree credit. However, if the 400--level counterpart was not taken prior to admission, then the 800--level course must be taken, and counts toward the credit-hour requirements of Subsection 'Option I' and 'Option III'

1. High Performance Processors (CSCE 832)
(http://www.cse.unl.edu/grad/resources/course_info/course_spec.php?COURSE_LEVEL=8%&Course=CSCE432)
2. VLSI Design (CSCE 834) (http://www.cse.unl.edu/grad/resources/course_info/course_spec.php?COURSE_LEVEL=8%&Course=CSCE434)
3. Communication Networks (CSCE 862)
(http://www.cse.unl.edu/grad/resources/course_info/course_spec.php?COURSE_LEVEL=8%&Course=CSCE462)

Breadth Requirements

At least 3 credit-hours must be in Theory of Computation or Algorithms. Additionally, the student must attend at least 15 departmental colloquia or doctoral oral presentations during his/her MS program; a signup sheet is used during these events as proof of attendance.

Depth Requirements

Elective courses are divided into several areas of concentration (tracks) as shown in Table 3. At least 6 credit-hours of 900 level courses must be taken within a single track. Within any single track, a maximum of 12 credit hours may be counted toward the degree. The assignment of a particular CSCE990 or CSCE996 course to a specific track shall be determined by the instructor. Additionally, the student must attend at least 20 departmental colloquia or doctoral oral presentations during his/her MS program; a signup sheet is used during these events as proof of attendance.

Thesis Option (Option I)

The requirements for this option may be satisfied by taking a total of 24 credit hours of regular courses. In addition, the student must complete a thesis under the supervision of a graduate faculty member in the department. The thesis (CSCE 899) contributes another 6 credit hours for a total of 30 credit hours. The student is also required to take at least 9 credit hours of advanced courses (900--level) in Computer Science.

A typical plan for this option consists of 9 credit hours of regular courses for each of the first two semesters, 6 credit hours of courses and an independent study (or research other than thesis) in the third semester and 6 credit hours of thesis in the final semester; however, the student should determine an exact program in consultation with the supervisory committee.

The supervisory committee for a student working on a thesis consists of three computer science faculty members approved by the graduate committee. The names of the committee members are suggested by the student in consultation with his/her advisor.

Thesis Option Requirements:

- 24 credit hours of regular courses

- A thesis (6 additional credit hours)
- Total = 30 credit hours (at least 9 of which must be 900 level courses in Computer Science)

Project Option (Option III)

The requirements for this option may be satisfied by taking a total of 36 credit hours. The program must include at least 3 credit hours, but no more than 6 credit hours of CSCE 897 (Masters Project). This course can not be taken with P/N option. The student must also complete a project under the supervision of a graduate faculty member in the department. The project (CSCE 897) contributes 3–6 of the 36 credit hours. The student is also required to take at least 12 credit hours of advanced courses (900–level) in Computer Science if a 6–hour MS project is presented and at least 15 credit hours if a 3–hour MS project is presented.

A typical plan for this option consists of 9 credit hours of regular courses for each of the first three semesters, and 3 (or 6) credit hours of courses and 6 (or 3) credit hours of project in the final semester.

The supervisory committee for a student working on a project consists of three computer science faculty members approved by the Computer Science Graduate Committee. The names of the committee members are suggested by the student in consultation with his/her advisor.

Project Option Requirements:

- 30–33 credit hours of regular courses
- A project (3–6 additional credit hours)
- Total = 36 credit hours (12–15 hours must be 900–level courses in Computer Science)

Memorandum of Courses

The program of study is formally established by filing a "[Memorandum of Courses](http://www.unl.edu/gradstudies/current/degrees/Masters-Memorandum.pdf)" (<http://www.unl.edu/gradstudies/current/degrees/Masters-Memorandum.pdf>) with the Office of Graduate Studies. *The memorandum must be filed before the student has received grades in more than one-half of the prescribed program*, in most cases this is before the end of the student's second semester in the MS program. The memorandum must be signed by the Advisor and submitted to the Graduate Secretary. It is then signed by the Graduate Chair, and finally by the Dean of Graduate Studies. The memorandum cannot be filed until the student has cleared **all** the deficiency courses listed in his or her Certificate of Admission.

Thesis/Project Report

All students must complete either a thesis or a project under the supervision of a member of the graduate faculty. It is expected that the work done in a thesis has some original research contribution. While it is not required that the work done in a project has some amount of original research contribution, it is expected that the work be of good quality.

The student is required to write the thesis or a project report in a standard style (Use the "Guidebook for Preparing your Thesis or Dissertation" available from the Office of Graduate Studies.) LaTeX templates are also available on the departmental computers.

Following the review by the advisor, copies of the thesis or the project report are given to the members of the supervisory committee. *The student must give a copy to each committee member at least two weeks before the final oral examination.* Students working on a thesis must also submit a copy to the Graduate Studies Office at least two weeks prior to the date of the oral examination.

Final Oral Examination

A final oral examination is required for all students. The student must file a "[Final Examination Report for Master's Degree](http://www.unl.edu/gradstudies/current/degrees/Masters-FinalExam.pdf)" form (<http://www.unl.edu/gradstudies/current/degrees/Masters-FinalExam.pdf>) at least four weeks before the required oral examination in their last semester of study. The oral examination will be scheduled for two hours and consist of a defense of the thesis or the project. The presentation is open to the public and the student is required to give an abstract (electronic copy) to the office to be used for advertising. After the public presentation and a question-and-answer period, the remainder of the examination is conducted privately by the supervisory committee. The examination is based on the thesis/project and other course work.

The supervisory committee may require the student to do additional work and the advisor is generally responsible for making sure that the work is completed. The advisor decides on the grade of the MS Thesis/Project.

Final Report

The student is expected to make the changes recommended by the supervisory committee and prepare a final copy of the thesis/report. The student is required to give a hard-bound copy to the advisor as well as the departmental office. It is also customary to offer each member of the supervisory committee a copy of the final report. Students doing a thesis must also submit two unbound copies to the Library.