

COMPUTER SCIENCE (M.S.)

<https://ceps.unh.edu/computer-science/program/ms/computer-science>

Description

The M.S. program is designed to help students increase the breadth and depth of their computer science knowledge, strengthen their software development skills, and build their research skills. Professionally-oriented students often complete industry internships, and the program has an outstanding job placement record for its graduates. Research-oriented students complete an M.S. thesis under the guidance of a faculty mentor, which usually leads to publication and provides clear evidence of the developed research skills useful for obtaining a leadership position in industry or to go on to do a Ph.D. Applications are welcomed from students whose undergraduate degree is not in computer science. In this case, a well-defined set of undergraduate prerequisites must be completed as part of the M.S. program of study.

Requirements

The M.S. program has three options: thesis, project, and exam.

M.S. Thesis Option

CS 900	Graduate Seminar	1
Select eight CS graduate courses of at least 3 credits each ¹		24
CS 899	Master's Thesis ²	6
Total Credits		31

- ¹ The courses must satisfy the following requirements:
- Two must be implementation intensive (see list below).
 - Three courses must be chosen from three different breadth groups (see list below).
 - At least two courses must be above 900.
 - At most once can be CS 998 Independent Study.

- ² The student must complete thesis under the supervision of a thesis adviser and a thesis committee of at least three members.

M.S. Project Option

CS 900	Graduate Seminar	1
Select ten CS graduate courses of at least 3 credits each ¹		30
Project ²		3
Total Credits		34

- ¹ The courses must satisfy the following requirements:
- Two must be implementation intensive (see list below).
 - Four courses must be chosen from four different breadth groups (see list below).
 - At least three courses must be above 900; one of these must be related to the project area.
 - At most once can be CS 998 Independent Study.

- ² The student must complete a project under the supervision of a faculty adviser.

M.S. Exam Option

CS 900	Graduate Seminar	1
Select ten CS graduate courses of at least 3 credits each ¹		30
Comprehensive exam that includes four different examination topics (see list below) ²		
Total Credits		31

- ¹ The courses must satisfy the following requirements:
- Two must be implementation intensive (see list below).
 - Four courses must be chosen from four different breadth groups (see list below).
 - At least three courses must be above 900.
 - At most one can be CS 998 Independent Study.

- ² One topic must be selected from one of the topics in the Theory breadth group (see list below). The other three topics must be selected from three different breadth groups (which can include a second theory topic).

Implementation Intensive Courses

Implementation intensive courses include:

CS 812	Compiler Design	3
CS 820	Operating System Programming	3
CS 830	Introduction to Artificial Intelligence	3
CS 835	Introduction to Parallel and Distributed Programming	3
CS 870	Computer Graphics	3
CS 980	Advanced Topics (Data Science)	3

Breadth Course Groups

The list below identifies the seven breadth course groups and introductory (800-level) graduate courses in each group. It is also acceptable to satisfy a group requirement by taking an advanced course (900-level) in the specified area. (Note that there are courses in the curriculum that are not in any of the identified groups.)

GROUP: INTRODUCTORY COURSE

Theory

CS 845	Formal Specification and Verification of Software Systems	3
CS 858	Algorithms	3

Systems

CS 823	Performance Evaluation of Computer Systems	3
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Compiler and Language

CS 812	Compiler Design	3
CS 835	Introduction to Parallel and Distributed Programming	3
CS 871	Web Programming Paradigms	3

Database

CS 853	Information Retrieval	3
CS 875	Database Systems	3

Artificial Intelligence

CS 830	Introduction to Artificial Intelligence	3
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Interactive Systems

CS 860	Introduction to Human-Computer Interaction	3
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CS 870	Computer Graphics	3
Networks		
CS 825	Computer Networks	3