

# MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

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The Master of Science in Computational Science and Engineering (CSE) Program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. The CSE program addresses the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

## Core Curriculum

Select four of the following:	12
CSE/MATH Numerical Linear Algebra 6643	
CSE 6140 Computational Science and Engineering Algorithms	
CSE 6730 Modeling and Simulation: Foundations and Implementation	
CSE/ISYE Computational Data Analysis: Learning, Mining, 6740 and Computation	
CSE 6220 High Performance Computing	
<b>Minor</b>	
Select a specialization minor that includes one applications area. <sup>1</sup>	6
Select at least six hours of non-CS/CSE courses.	6
<b>Course or Thesis Option</b>	
Select one of the following: <sup>2</sup>	6
Course Option	
Thesis	
Total Credit Hours	30

<sup>1</sup> A specialization minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation.

<sup>2</sup> Students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. Students must acquire the approval of their proposed program of study in their first semester of enrollment in the CSE program from both the student's home unit coordinator and the CSE program director.