

M.S. Computer Science: Software Development Requirements

The Master of Science in Computer Science focuses on the core concepts in computer science and software engineering, allowing students to build a foundation, thus having the capability to learn any new technology. The classes are varied and exciting utilizing a wide array of programming languages: Network Programming, Data Mining, Big Data, Game Development, Human Computer Interaction, Robotics, Artificial Intelligence and Software Engineering.

Note that all students must achieve 30 graduate credits and a minimum 2.0 overall GPA to graduate.

Required CPSC Course – 3 credits

CPSC 402 Data Structures II (3 credits)

Foundational Courses – 9 to 27 credits

CPSC 415 Design & Analysis of Algorithms I (3 credits)
CPSC 421 Web-Based Software Design and Development (3 credits)
CPSC 422 Object-Oriented Programming I (3 credits)
CPSC 425 Compiler Design I (3 credits)
CPSC 447 Artificial Intelligence I (3 credits)
CPSC 456 Database Management Systems I (3 credits)
CPSC 458 Data Mining & Pred. Analytics I (3 credits)
CPSC 459 Introduction to Big Data (3 credits)
CPSC 510 Advanced Operating Systems (3 credits)
CPSC 516 Design & Analysis of Algorithms II (3 credits)
CPSC 520 Advanced Object-Oriented Programming (3 credits)
CPSC 521 Advanced Web-Based Software Development (3 credits)
CPSC 523 Advanced Scripting for Data Science (3 credits)
CPSC 526 Compiler Design II (3 credits)
CPSC 543 Multiprocessing & Concurrent Programming (3 credits)
CPSC 548 Artificial Intelligence II (3 credits)
CPSC 552 Advanced UNIX Programming (3 credits)
CPSC 556 Database Management Systems II (3 credits)
CPSC 558 Data Mining & Pred. Analytics II (3 credits)

Elective Courses – 0 to 12 credits

Non-thesis students may take 12 hours of elective courses.

Depth Component Requirement

Choose at least two courses (one or more 500-level) from one depth area.

| | |
|-------------------------|-------------------------|
| Algorithms | 415, 516, 555 |
| Database Systems | 456, 556 |
| Data Science | 458, 459, 523, 558 |
| Artificial Intelligence | 445, 447, 548 |
| Application Development | 421, 422, 520, 521, 543 |
| Operating Systems | 425, 510, 526, 543, 552 |

Thesis – 0 to 6 credits

CPSC 599 1st Term

CPSC 599 2nd Term

Notes:

1. Candidates for the MS degree in Computer Science must complete a total of 30 credits, selected in consultation with your advisor. A candidate must complete all degree requirements for the MS within six (6) calendar years after his or her acceptance into the program.
2. Students may elect for the thesis option, which requires the completion of 24 credits of courses and six (6) credits of thesis. Students who do not complete a thesis must complete the Program of Study Summary (POSS), a written report that provides a narrative, backed by evidence, that the student has fulfilled specific student learning outcomes in the program.
3. Students must complete at least 15 credits of 500-level courses, which can include six (6) hours of CSC 599 for students electing the thesis option. No more than five 400-level courses may be taken for graduate credit.
4. Students must complete at least one depth component in their program. (see above).

Program Plan Code: MS_CPSC

Effective Date: Spring 2022