

MASTER OF COMPUTER SCIENCE (MCS) DEGREE, ONLINE PROGRAM

Program Learning Outcomes for the MCS Degree

Upon completing the MCS degree, students will be able to:

1. Solve advanced Computer Science problems. Students will acquire and apply a graduate-level understanding of material in sub-areas of Computer Science.
2. Design and implement complex software systems. Students will demonstrate skill in their design and implementation and function effectively in teams.
3. Communicate effectively to a client and user.

Requirements for the MCS Degree, Online Program

The MCS degree is a non-thesis master's degree. For general university requirements, please see [Non-Thesis Master's Degrees \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees/\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see [All Graduate Students \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the MCS degree must complete:

- A minimum of 30 credit hours to satisfy degree requirements.
- A minimum of 30 credit hours of graduate-level study (graduate semester credit hours, coursework at the 500-level or above).
- A minimum of 24 graduate semester credit hours must be taken at Rice University.
- A minimum of 24 graduate semester credit hours must be taken in standard or traditional courses (with a course type of lecture, seminar, laboratory, lecture/laboratory).
- The requirements for one area of specialization (see below for areas of specialization). The MCS degree program offers four areas of specialization:
 - [Data Science](#) (p. 2), **or**
 - [Engineering Leadership](#) (p. 2), **or**
 - [Machine Learning](#) (p. 2), **or**
 - [Systems](#) (p. 2).
- A maximum of 2 courses (6 graduate semester credit hours) from transfer credit. For additional departmental guidelines regarding transfer credit, see the [Policies](#) (p. 2) tab.
- A minimum overall GPA of 2.67 or higher in all Rice coursework.
- A minimum program GPA of 2.67 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree.

Students in the MCS degree program are expected to pay full tuition and all fees. No financial aid is available from the university or the department for MCS students. The MCS degree is a terminal degree for students intending to pursue a career in the computer industry.

The courses listed below satisfy the requirements for this degree program. In certain instances, courses not on this official list may be substituted upon approval of the program's academic advisor, or where applicable, the department or program's Director of Graduate Studies. Course substitutions must be formally applied and entered into Degree Works by the department or program's [Official Certifier \(https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/\)](https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/). Additionally, these must be approved by the Office of Graduate and Postdoctoral Studies. Students and their academic advisors should identify and clearly document the courses to be taken.

Summary

Code	Title	Credit Hours
Total Credit Hours Required for the MCS Degree, Online Program		30

Degree Requirements

Code	Title	Credit Hours
Core Requirements ¹		
COMP 610	SOFTWARE CONSTRUCTION	3
COMP 613	PROGRAMMING LANGUAGES AND DESIGN ²	3
COMP 614	COMPUTER PROGRAMMING FOR DATA SCIENCE	3
COMP 630	DATABASES ²	3
COMP 682	PRINCIPLES OF ALGORITHMS AND SOFTWARE AREA ²	3
Area of Specialization ¹		
Select 1 from the following Areas of Specialization (see Areas of Specialization below):		6
Data Science		
Engineering Leadership		
Machine Learning		
Systems		
Elective Requirements ¹		
Select 9 credit hours of electives from the following:		9
Any course (minimum of 3 credit hours) at the 500-level (or above) related to computer science from CMOR, COMP, ELEC, RCEL, or STAT course offerings		
Any course (minimum of 1.5 credit hours) at the 500-level (or above) from BUSI or MGMT course offerings		
Any course (minimum of 3 credit hours) at the 500-level (or above) from any Area of Specialization outside the student's chosen Area of Specialization (see Areas of Specialization below)		
Total Credit Hours		30

Footnotes and Additional Information

- ¹ Students admitted into either program (online or on-campus) will be allowed to take up to 9 credit hours in the other modality (on-campus or online) with permission from the program advisors.

² COMP 613 *Programming Languages and Design*, COMP 630 *Databases*, COMP 680 *Statistics for Computing and Data Science*, and COMP 682 *Principles of Algorithms and Software Area* are prerequisites to other required courses and must be taken first.

Areas of Specialization

Students must complete a minimum of 2 courses (minimum of 6 credit hours) from one Area of Specialization.

Area of Specialization: Data Science

Code	Title	Credit Hours
Select all of the following:		
COMP 643	BIG DATA	3
COMP 665	DATA VISUALIZATION	3
Total Credit Hours		6

Area of Specialization: Engineering Leadership

Code	Title	Credit Hours
Select all of the following:		
RCEL 501	ENGINEERING MANAGEMENT & LEADERSHIP THEORY AND APPLICATION	3
RCEL 502	ENGINEERING PROJECT MANAGEMENT	3
Total Credit Hours		6

Area of Specialization: Machine Learning

Code	Title	Credit Hours
Select all of the following:		
COMP 642	MACHINE LEARNING	3
COMP 680	STATISTICS FOR COMPUTING AND DATA SCIENCE ¹	3
Total Credit Hours		6

Area of Specialization: Systems

Code	Title	Credit Hours
Select all of the following:		
COMP 621	SYSTEMS SOFTWARE	3
COMP 628	CYBERSECURITY	3
Total Credit Hours		6

Footnotes and Additional Information

¹ COMP 613 *Programming Languages and Design*, COMP 630 *Databases*, COMP 680 *Statistics for Computing and Data Science*, and COMP 682 *Principles of Algorithms and Software Area* are prerequisites to other required courses and must be taken first.

Policies for the MCS Degree, Online Program

Department of Computer Science Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Computer Science publishes a graduate program handbook, which

can be found here: https://gradhandbooks.rice.edu/2023_24/Computer_Science_Masters_Handbook.pdf

Admission

The GRE test is highly recommended for all applicants, however it may be waived, upon discretion of the department's Admission Committee, if an applicant has relevant industrial experience.

Financial Aid

No financial aid is available from Rice University or the Computer Science Department for students in the MCS degree program.

Transfer Credit

For Rice University's policy regarding transfer credit, see [Transfer Credit](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer) (<https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer>). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program's advisor when considering transfer credit possibilities.

Departmental Transfer Credit Guidelines

Students pursuing the MCS degree should be aware of the following departmental transfer credit guidelines:

- No more than 2 courses (6 credit hours) of credit from another U.S. or international universities of similar standing as Rice may apply towards the degree. Transferred courses must be comparable in content and depth to the corresponding course at Rice, and must not have counted toward another degree.
- Request for transfer credit will be considered by the Computer Science Graduate Committee Chair, and the instructor of the equivalent Rice course.

Additional Information

For additional information, please see the *Graduate Programs* website at <https://www.cs.rice.edu/academics/graduate-programs> (<https://www.cs.rice.edu/academics/graduate-programs/>) or contact the department at gradapp@rice.edu.

See the Computer Science website: <https://csweb.rice.edu/academics/graduate-programs/online-mcs> (<https://csweb.rice.edu/academics/graduate-programs/online-mcs/>) for additional information relevant to the MCS Degree, Online Program.

Opportunities for the MCS Degree, Online Program

Additional Information

For additional information, please see the *Graduate Programs* website at <https://www.cs.rice.edu/academics/graduate-programs> (<https://www.cs.rice.edu/academics/graduate-programs/>) or contact the department at gradapp@rice.edu.

See the Computer Science website: <https://csweb.rice.edu/academics/graduate-programs/online-mcs> (<https://csweb.rice.edu/academics/graduate-programs/online-mcs/>) for additional information relevant to the MCS Degree, Online Program.