The Computer Science graduate program prepares students for research and professional practice in computer science and related technologies. The program includes both fundamentals and advanced work in the areas of artificial intelligence and databases, programming languages and software engineering, systems and networks, theoretical computer science, and visual computing. Graduate classes are divided into basic classes, which have no graduate course prerequisite, and advanced classes, which have a graduate class as a prerequisite. Graduate classes are generally offered in the late afternoon and evening. Financial aid in the form of graduate assistantships may be available for full-time degree-seeking students.

### Admissions & Policies

#### Admissions

In addition to fulfilling Mason’s admission requirements for graduate study, applicants must meet the following requirements:

- Hold a baccalaureate degree that includes:
  - Data Structures and Algorithms (CS 310 Data Structures)
  - Automata Theory and Formal Languages (CS 330 Formal Methods and Models)
  - Computer Architecture including Assembly Language (CS 367 Computer Systems and Programming)
  - Calculus I and II
  - A substantial course in discrete mathematics such as MATH 125 Discrete Mathematics I (Mason Core) (http://catalog.gmu.edu/mason-core/)

- Earned a cumulative GPA of 3.00 or higher for the last two years of undergraduate work, preferably with a major in a technical field such as computer science, mathematics, physical sciences, engineering, or information systems.

- Submit transcripts of all post secondary education, complete the online application, including a goals statement, resume, and two letters of recommendation.

- A valid GRE score is required for those who have not earned a Bachelor’s degree or higher from a US institution.

- English Proficiency Exam Score (https://www2.gmu.edu/admissions-aid/how-apply/graduate/standardized-test-information/), if applicable.

### Requirements

#### Degree Requirements

Total credits: 30

#### Required Courses and Plan of Study

In addition to general university requirements, completion of the MS in CS requires 30 credits of graduate courses.

To ensure that students have uniform preparation for the core courses, all students are required to take CS 530 Mathematical Foundations of Computer Science and CS 531 Computer Systems and Fundamentals of Systems Programming as their first two courses in the program. Students with a strong academic background in computer science may have CS 530 and CS 531 substituted for other elective courses at the discretion of the program director. Students enrolled in PhD CS or the Bachelor’s/Accelerated Master’s program cannot take these courses for credit.

Students also have the opportunity to indicate that they have the requisite knowledge corresponding to CS 530 and CS 531 by passing an exam. The exams are given before classes begin in January and August, and can only be taken once. Students failing either one of the exams must take the equivalent course in their first semester. Students who successfully test out of CS 530 or CS 531 will be required to fulfill the credit requirement with other coursework chosen under advisement.

Courses are grouped in the following five broad areas: Artificial Intelligence and Databases, Programming Languages and Software Engineering, Systems and Networks, Theoretical Computer Science, and Visual Computing. The list of pre-approved courses with their areas follows.

All the following requirements should be satisfied for the MS in CS degree:

- CS 583 Analysis of Algorithms (from the Theoretical Computer Science area) and two additional core courses from two other areas must be successfully completed with a grade of B- or higher. Students receiving lower than a B- must retake the course or face termination.

- At least four courses (12 credits) must be chosen from the advanced courses in the list of pre-approved courses from at least two different areas.

- At least six courses, including two advanced courses, must be designated CS.

- At least eight courses must be taken from the list of pre-approved courses. Up to two computer science-related courses that are not on the list of pre-approved courses may be taken with prior approval of the program director.

#### Plan of Study

Before the end of the first semester, students must have a plan of study approved by their academic advisor. This plan should be kept up to date by regular consultation with the academic advisor.

#### Core Courses by Area

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
</tbody>
</table>
**Preapproved Basic and Advanced MS CS Courses by Area**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
</tbody>
</table>

**Systems and Networks**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
</tbody>
</table>

**Theoretical Computer Science**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td></td>
</tr>
</tbody>
</table>

**Visual Computing**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td></td>
</tr>
</tbody>
</table>

Must be successfully completed with a grade of B- or better

**Artificial Intelligence and Databases**

**Basic Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td></td>
</tr>
<tr>
<td>INFS 623</td>
<td>Web Search Engines and Recommender Systems</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 595</td>
<td>Basic Topics in Computer Science</td>
<td></td>
</tr>
<tr>
<td>CS 650</td>
<td>Advanced Database Management</td>
<td></td>
</tr>
<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td></td>
</tr>
<tr>
<td>CS 667</td>
<td>Biometrics and Identity Management</td>
<td></td>
</tr>
<tr>
<td>CS 681</td>
<td>Instructable Cognitive Agents</td>
<td></td>
</tr>
<tr>
<td>CS 685</td>
<td>Autonomous Robotics</td>
<td></td>
</tr>
<tr>
<td>CS 687</td>
<td>Advanced Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 688</td>
<td>Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 689</td>
<td>Planning Motions of Robots and Molecules</td>
<td></td>
</tr>
<tr>
<td>CS 747</td>
<td>Deep Learning</td>
<td></td>
</tr>
<tr>
<td>CS 782</td>
<td>Advanced Machine Learning</td>
<td></td>
</tr>
<tr>
<td>CS 787</td>
<td>Decision Guidance Systems</td>
<td></td>
</tr>
<tr>
<td>INFS 740</td>
<td>Database Programming for the World Wide Web</td>
<td></td>
</tr>
<tr>
<td>INFS 760</td>
<td>Advanced Database Management</td>
<td></td>
</tr>
<tr>
<td>INFS 772</td>
<td>Intelligent Agents and the Semantic Web</td>
<td></td>
</tr>
<tr>
<td>INFS 774</td>
<td>Enterprise Architecture</td>
<td></td>
</tr>
</tbody>
</table>

**Programming Languages and Software Engineering**

**Basic Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>SWE 619</td>
<td>Object-Oriented Software Specification and Construction</td>
<td></td>
</tr>
<tr>
<td>SWE 620</td>
<td>Software Requirements Analysis and Specification</td>
<td></td>
</tr>
<tr>
<td>SWE 621</td>
<td>Software Design and Architecture</td>
<td></td>
</tr>
<tr>
<td>SWE 622</td>
<td>Distributed Software Engineering</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td></td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td></td>
</tr>
</tbody>
</table>

**Systems and Networks**

**Basic Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 531</td>
<td>Computer Systems and Fundamentals of Systems Programming</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 587</td>
<td>Introduction to Cryptography</td>
<td></td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>ISA 564</td>
<td>Security Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 635</td>
<td>Foundations of Parallel Computation</td>
<td></td>
</tr>
<tr>
<td>CS 655</td>
<td>Wireless and Mobile Computing</td>
<td></td>
</tr>
<tr>
<td>CS 658</td>
<td>Networked Virtual Environments</td>
<td></td>
</tr>
<tr>
<td>CS 672</td>
<td>Computer System Performance Evaluation</td>
<td></td>
</tr>
<tr>
<td>CS 673</td>
<td>Multimedia Computing and Systems</td>
<td></td>
</tr>
<tr>
<td>CS 675</td>
<td>Distributed Systems</td>
<td></td>
</tr>
<tr>
<td>CS 706</td>
<td>Concurrent Software Systems</td>
<td></td>
</tr>
<tr>
<td>CS 719</td>
<td>Scalable Internet Services</td>
<td></td>
</tr>
<tr>
<td>CS 756</td>
<td>Performance Analysis of Computer Networks</td>
<td></td>
</tr>
<tr>
<td>CS 773</td>
<td>Real-Time Systems Design and Development</td>
<td></td>
</tr>
<tr>
<td>CS 779</td>
<td>Topics in Resilient and Secure Computer Systems</td>
<td></td>
</tr>
<tr>
<td>CS 788</td>
<td>Autonomic Computing</td>
<td></td>
</tr>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td></td>
</tr>
<tr>
<td>ISA 673</td>
<td>Operating Systems Security</td>
<td></td>
</tr>
<tr>
<td>ISA 674</td>
<td>Intrusion Detection</td>
<td></td>
</tr>
<tr>
<td>ISA 697</td>
<td>Topics in Information Security</td>
<td></td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td></td>
</tr>
<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
<td></td>
</tr>
<tr>
<td>ISA 785</td>
<td>Research in Digital Forensics</td>
<td></td>
</tr>
</tbody>
</table>

**Theoretical Computer Science**

**Basic Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 530</td>
<td>Mathematical Foundations of Computer Science</td>
<td></td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td></td>
</tr>
</tbody>
</table>

**Advanced Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 640</td>
<td>Advanced Compilers</td>
<td></td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>SWE 631</td>
<td>Software Design Patterns</td>
<td></td>
</tr>
<tr>
<td>SWE 632</td>
<td>User Interface Design and Development</td>
<td></td>
</tr>
<tr>
<td>SWE 637</td>
<td>Software Testing</td>
<td></td>
</tr>
<tr>
<td>SWE 642</td>
<td>Software Engineering for the World Wide Web</td>
<td></td>
</tr>
<tr>
<td>SWE 645</td>
<td>Component-Based Software Development</td>
<td></td>
</tr>
<tr>
<td>SWE 721</td>
<td>Reusable Software Architectures</td>
<td></td>
</tr>
<tr>
<td>SWE 737</td>
<td>Advanced Software Testing</td>
<td></td>
</tr>
<tr>
<td>SWE 760</td>
<td>Software Analysis and Design of Real-Time Systems</td>
<td></td>
</tr>
</tbody>
</table>
CS 600  Theory of Computation
CS 611  Computational Methods for Genomics
CS 630  Advanced Algorithms
CS 633  Computational Geometry
CS 683  Parallel Algorithms
CS 684  Graph Algorithms

Visual Computing
Basic Courses:
CS 551  Computer Graphics

Advanced Courses:
CS 662  Computer Graphics Game Technologies
CS 667  Biometrics and Identity Management
CS 682  Computer Vision
CS 686  Image Processing and Applications
CS 752  Interactive Graphics Software
CS 774  Computational Vision
CS 777  Human-Computer Intelligent Interaction

Project or Thesis
Three to six credit hours of the advanced classes may be replaced by a project or thesis with consent of a faculty sponsor and faculty advisor. The project or thesis must be guided and approved by a committee of three appropriate faculty members and presented at an appropriate forum. The thesis must meet relevant university requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 798</td>
<td>Project Seminar (3 credits)</td>
<td></td>
</tr>
<tr>
<td>CS 799</td>
<td>Thesis (6 credits)</td>
<td></td>
</tr>
</tbody>
</table>

Additional Pre-approved CS Courses
These courses are not classified by area. Note that CS 695 Topics in Computer Science/CS 795 Advanced Topics in CS can be used to satisfy the breadth requirement if the area is listed in the syllabus for the course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 595</td>
<td>Basic Topics in Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 695</td>
<td>Topics in Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CS 697</td>
<td>Independent Reading and Research</td>
<td>1-3</td>
</tr>
<tr>
<td>CS 795</td>
<td>Advanced Topics in CS</td>
<td>3</td>
</tr>
<tr>
<td>CS 798</td>
<td>Project Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CS 799</td>
<td>Thesis</td>
<td>1-6</td>
</tr>
<tr>
<td>CS 895</td>
<td>Research Topics in CS</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration in Cyber Security (CYSC)
In addition to the existing program requirements, MS CS degree students must satisfy the following requirements.

Students must take 5 courses from the following categories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 656</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ISA 562</td>
<td>Information Security Theory and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose 2-3 elective courses: 6-9

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 657</td>
<td>Mining Massive Datasets with MapReduce</td>
<td></td>
</tr>
<tr>
<td>CS 681</td>
<td>Instructable Cognitive Agents</td>
<td></td>
</tr>
<tr>
<td>CS 747</td>
<td>Deep Learning</td>
<td></td>
</tr>
<tr>
<td>CS 782</td>
<td>Advanced Machine Learning</td>
<td></td>
</tr>
</tbody>
</table>

Choose 0-1 related course: 0-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 687</td>
<td>Advanced Artificial Intelligence</td>
<td></td>
</tr>
<tr>
<td>CS 685</td>
<td>Autonomous Robotics</td>
<td></td>
</tr>
<tr>
<td>CS 682</td>
<td>Computer Vision</td>
<td></td>
</tr>
</tbody>
</table>

Thesis (optional):
Students, with the consent of a faculty sponsor and faculty advisor, may also elect a 6-credit thesis (CS 799 Thesis). The thesis must be guided and approved by a committee of three appropriate faculty members and presented at an appropriate forum. If the faculty advisor and the program director agree that the thesis is appropriate for the concentration the student will need to complete the two courses from the category 1 and one course from the category 2 in addition to the thesis to complete the concentration requirements.

Concentration in Machine Learning (ML)
In addition to the existing program requirements, MS CS degree students must satisfy the following requirements.

Students must take 5 courses from the following categories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA 564</td>
<td>Security Laboratory</td>
<td></td>
</tr>
<tr>
<td>ISA 673</td>
<td>Operating Systems Security</td>
<td></td>
</tr>
<tr>
<td>ISA 674</td>
<td>Intrusion Detection</td>
<td></td>
</tr>
<tr>
<td>ISA 681</td>
<td>Secure Software Design and Programming</td>
<td></td>
</tr>
<tr>
<td>ISA 763</td>
<td>Security Protocol Analysis</td>
<td></td>
</tr>
<tr>
<td>ISA 764</td>
<td>Security Experimentation</td>
<td></td>
</tr>
</tbody>
</table>

Choose 0-1 related course: 0-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td></td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td></td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CS 600</td>
<td>Theory of Computation</td>
<td></td>
</tr>
<tr>
<td>CS 655</td>
<td>Wireless and Mobile Computing</td>
<td></td>
</tr>
</tbody>
</table>

The thesis must be guided and approved by a committee of three appropriate faculty members and presented to the committee. If the faculty advisor and the program director agree that the thesis is appropriate for the concentration the student will need to complete the two courses from category 1 and one course from category 2 in addition to the thesis to complete the concentration requirements.
Accelerated Master's

Applied Computer Science, BS/Computer Science, Accelerated MS

Overview
Highly-qualified students in the Applied Computer Science, BS (http://catalog.gmu.edu/colleges-schools/engineering/computer-science/applied-computer-science-bs/) have the option of obtaining an accelerated Computer Science, MS.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (http://catalog.gmu.edu/policies/academic/graduate-policies/).

Admission Requirements
Students in the Applied Computer Science, BS (http://catalog.gmu.edu/colleges-schools/engineering/computer-science/applied-computer-science-bs/) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 310</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 330</td>
<td>Formal Methods and Models</td>
<td>3</td>
</tr>
<tr>
<td>CS 367</td>
<td>Computer Systems and Programming</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

Accelerated Option Requirements

Students have the opportunity to earn 3-6 credits in graduate coursework that count towards both the BS and MS degrees.

Students may register for 3-6 credits of the following CS 500-level courses in place of the corresponding CS 400-level courses required for the BS degree. Note: Students in the Applied Computer Science BS are required to take CS 583 Analysis of Algorithms as an advanced standing course.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
</tr>
<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 584</td>
<td>Theory and Applications of Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>

Note:
Students also have the option to take up to 6 additional credits of graduate coursework, which serves as reserve graduate credit to be counted towards the MS degree only.

Degree Conferral

Students must apply the semester before they expect to complete the BS requirements to have the BS degree conferred. In addition, at the beginning of the student’s final undergraduate semester, students must complete a Bachelor’s/Accelerated Master’s Transition form that is submitted to the Office of the University Registrar and the VSE Graduate Admissions Office. At the completion of MS requirements, a master’s degree is conferred.

Computer Science, BS/Computer Science, Accelerated MS

Overview
Highly-qualified students in the Computer Science, BS (http://catalog.gmu.edu/colleges-schools/engineering/computer-science/computer-science-bs/) have the option of obtaining an accelerated Computer Science, MS.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees (http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7). For policies governing all graduate degrees, see AP6 Graduate Policies (http://catalog.gmu.edu/policies/academic/graduate-policies/).

Admission Requirements
Students in the Computer Science, BS (http://catalog.gmu.edu/colleges-schools/engineering/computer-science/computer-science-bs/) program may apply to this option if they have earned 90 undergraduate credits with an overall GPA of at least 3.30. Students must have successfully completed CS 310 Data Structures, CS 330 Formal Methods and Models and CS 367 Computer Systems and Programming.

Accelerated Option Requirements

Students have the opportunity to earn 3-6 credits in graduate coursework that count towards both the BS and MS degrees.

Students may register for 3-6 credits of the following CS 500-level courses in place of the corresponding CS 400-level courses required for the BS degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 540</td>
<td>Language Processors</td>
<td>3</td>
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<tr>
<td>CS 550</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 551</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CS 555</td>
<td>Computer Communications and Networking</td>
<td>3</td>
</tr>
<tr>
<td>CS 571</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 580</td>
<td>Introduction to Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CS 583</td>
<td>Analysis of Algorithms</td>
<td>3</td>
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Admissions Office. At the completion of MS requirements, a master’s degree is conferred.