COMPUTER SCIENCE, MS

Introduction
Graduate School Policies and Procedures (http://catalog.ucdenver.edu/cu-denver/graduate/graduate-school-policies-procedures/) apply to this program.

The Department of Computer Science and Engineering requires master’s degree candidates to complete a program of study consisting of at least 30 semester hours of graduate level computer science courses while maintaining a grade point average of at least 3.0. According to the Graduate School Rules, graduate courses with grades below B- cannot be applied toward the completion of the graduate degree. With prior approval by the Graduate Committee, a student may substitute up to nine semester hours with graduate mathematics or other engineering courses.

Students in the CSE department are required to have a personal laptop with the following specifications:

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 10 1809+</td>
<td>Windows 10 1809+</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Core i5 dual core 1.6 GHz or Intel Core i5 quad core 1.4 GHz</td>
<td>Intel Core i5/i7 2.2 GHz or faster</td>
</tr>
<tr>
<td>RAM</td>
<td>8GB (upgradable to 16GB)</td>
<td>12 to 16GB</td>
</tr>
<tr>
<td>Disk Space</td>
<td>256GB hard disk drive with 100GB free</td>
<td>512GB Solid state drive with 100GB freeupgradable to 512 solid state drive</td>
</tr>
<tr>
<td>Hard Disk Space</td>
<td>Install Windows and application on a solid state drive</td>
<td></td>
</tr>
<tr>
<td>Graphic Card</td>
<td>integrated graphics card</td>
<td>dedicated graphics card</td>
</tr>
<tr>
<td>Display</td>
<td>1280 x 720 resolution</td>
<td>1920 x 1024 resolution</td>
</tr>
<tr>
<td>Network Connectivity</td>
<td>Ethernet + WiFi</td>
<td>Ethernet + WiFi</td>
</tr>
</tbody>
</table>

Data Science in Biomedicine Track
The Data Science in Biomedicine Track is offered under the Computer Science Master of Science degree program for students who choose Plan I - Thesis.

With this new track, students will adopt biomedical applications of data science (as a sample data science application domain) to learn data science methodologies and technologies. Upon successful graduation from the Computer Science MS program under the Data Science in Biomedicine track, students will have an official designation of data science training within their degree, which will help with employment and other opportunities.

The Data Science in Biomedicine Track requires master’s degree candidates to complete a program of study consisting of at least 36 semester hours of graduate level computer science courses while maintaining a grade point average of at least 3.0. According to the Graduate School Rules, graduate courses with grades below B- cannot be applied toward the completion of the graduate degree. In this plan students will take will take three “category A” courses, a minimum of four “category B” courses, six hours of MS thesis and an additional 3 courses of electives from a list of courses related to Biomedical Computing and Informatics, Bioinformatics, Health Informatics, etc.

Adequate Progress Toward MS in Computer Science Degree
Students are expected to finish the MS degree program within five years. Candidates for the MS degree may not get credit for a course taken longer than five years before the date on which the degree is to be granted.

Students who do not enroll for any course work relevant to computer science in a given semester (summer semesters excluded) must supply the Department of Computer Science and Engineering with a written statement describing the reason for the inactivity. Students who are inactive for three consecutive semesters (summer semesters excluded) will be removed from the program, and must re-apply for admission.

Program Requirements
Students need to submit an approved Plan of Study to the department during the first semester of their admission. An academic advisor will consult with students to develop a Plan of Study. Students may choose Plan I (Thesis), Plan II (MS Project), or Plan III (Course Only). Both Plans I and II require successful defense of thesis or project in student’s graduating semester.

- **Plan I-Thesis**: Students take 24 hours of graduate course work, and additionally write and defend a thesis, which counts for 6 hours of graduate work. In this plan students will take a minimum of three “category A” courses, a minimum of four “category B” courses, and six hours of MS thesis.
- **Plan II-MS Project**: Students take 27 hours of graduate course work, and additionally write and defend a MS project report, which counts for 3 hours of graduate MS project work. In this plan, students will take four “category A” courses, a minimum of four “category B” courses, and three hours of MS project.
- **Plan III-Course Only**: Students must take 30 hours of graduate course work and, additionally, complete the final assessment during the student’s graduating semester. In this plan, students will take four “category A” courses and a minimum of four “category B” courses. One of the “category B” courses must be from a designated list of courses that will satisfy a final MS course project.

Students are allowed a maximum of 3 credit hours of CS Independent Study (except in Plan III, course-only option).

Students may only take graduate engineering or graduate mathematics courses that are offered toward an MS degree in a degree-granting department, while at least 21 hours must be CS. Students must receive prior approval from the CSE graduate committee before taking any such courses. For example, courses offered through Continuing Education are not counted toward an MS degree in Computer Science.

The only exception for a student to take a graduate course from any other department is when the course satisfies all of the following conditions:

1. It appears in a graduate program.
2. It is taken instead of 3 hours of CS Independent Study.
3. It is approved by the CSE Graduate Committee.

No more than 6 credit hours may be in the form of online courses.