The following table displays our minimum commitment, based on availability of instructor and sufficient course enrollment:

<table>
<thead>
<tr>
<th>Semester of MSCS</th>
<th>Number of graduate CS courses available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester (Fall)</td>
<td>2 core courses, 1 elective, thesis supervision</td>
</tr>
<tr>
<td>2nd Semester (Spring)</td>
<td>1 core course, 2 electives, thesis supervision</td>
</tr>
<tr>
<td>3rd Semester (Fall)</td>
<td>2 core courses, 1 elective, thesis supervision</td>
</tr>
<tr>
<td>4th Semester (Spring)</td>
<td>1 core course, 2 electives, thesis supervision</td>
</tr>
</tbody>
</table>

The core courses are:
- CS 04.530 Advanced Database Systems: Theory and Programming (3 s.h.)
- CS 04.548 Programming Languages: Theory, Implementation and Application (3 s.h.)
- CS 04.560 Design and Implementation of Operating Systems (3 s.h.)
- CS 04.564 Compiler Design Theory (3 s.h.)
- CS 06.510 Computer Networks (3 s.h.)
- CS 06.520 Topics in Computer Architecture (3 s.h.)
- CS 07.522 Advanced Theory of Computing (3 s.h.)
- CS 07.523 Advanced Software Engineering (3 s.h.)
- CS 07.540 Advanced Design and Analysis of Algorithms (3 s.h.)
- CS 07.551 Advanced Cyber Security: Principles and Applications (3 s.h.)
- CS 07.552 Advanced Cryptography (3 s.h.)

The electives are:
- CS 04.505 Advanced Web Programming (3 s.h.)
- CS 04.565 System Programming (3 s.h.)
- CS 04.570 Advanced Object Oriented Design (3 s.h.)
- CS 06.505 Wireless Networks and Systems (3 s.h.)
- CS.06.512 Network Security (3 s.h.)
- CS 06.515 Embedded Systems Programming (3 s.h.)
- CS.07.545 Advanced Robotics (3 s.h.)
- CS 07.550 Concepts in Artificial Intelligence (3 s.h.)
- CS 07.555 Natural Language Processing (3 s.h.)
- CS 07.556 Machine Learning (3 s.h.)
- CS 07.560 Computer Graphics (3 s.h.)
- CS 07.565 Computer Vision (3 s.h.)
- CS 07.570 Information Visualization (3 s.h.)
- CS 07.575 Advanced TCP/IP and Internet Protocols and Technologies (3 s.h.)
- CS 07.580 Computer Animation (3 s.h.)
- CS 07.595 Advanced Topics in Computer Science (3 s.h.)
- CS 07.590 Game Design and Development (3 s.h.)

Other courses may be added.
Any core course can be taken as an elective.

Students are allowed to take at most two non-CS courses (6 credits) from closely related areas. Approved closely related areas are Electrical and Computer Engineering, Mathematics, and Management Information Systems. If a student wishes to take two non-CS courses, one of them must be from Electrical and Computer Engineering or Mathematics. Any graduate course taken outside of Rowan-CS must be approved prior to registration by the CS Graduate Program Committee. Such an approval is on an individual basis. The interested student must submit in writing to the CS Graduate Coordinator an explanation as to why (s)he is interested in the course and how the course addresses one or more of the goals of the MS in CS program. The student can expect a response from the Graduate Committee within 10 business days.

The MS in CS program goals are:

**Program Goal 1:** MS Computer Science graduates understand core areas of Computer Science and apply this knowledge to solving computing problems.

**Program Goal 2:** MS Computer Science graduates are able to design, analyze, implement and evaluate computer systems and applications.

**Program Goal 3:** MS Computer Science graduates communicate effectively.

**Program Goal 4:** MS Computer Science graduates are prepared to engage in continuing professional development and research.

Students choosing the thesis track must complete:

CS 07.530  Computer Science Thesis I (3 s.h.)
CS 07.531  Computer Science Thesis II (3 s.h.)
CS 07.532  Computer Science Thesis III (3 s.h.)

OR (only after the approval of the Graduate Coordinator)

CS 07.530  Computer Science Thesis I (3 s.h.)
CS 07.531  Computer Science Thesis II (3 s.h.)
CS 07.532  Computer Science Thesis III (3 s.h.)

**Project Intensive Designation**

The course instructor may choose to designate a course as “project intensive.” Project intensive courses contain a significant project that contributes to the students’ final grade. Students choosing the non-thesis option must take at least two project intensive electives.

**The Project Intensive courses are:**

CS 04.530  Advanced Database Systems: Theory and Programming (3 s.h.)
CS 04.560  Design and Implementation of Operating Systems (3 s.h.)
CS 04.564  Compiler Design Theory (3 s.h.)
CS 06.510  Computer Networks (3 s.h.)
CS 07.523  Advanced Software Engineering (3 s.h.)
CS 04.505  Advanced Web Programming (3 s.h.)
CS 04.570  Advanced Object Oriented Design (3 s.h.)
CS 06.505  Wireless Networks and Systems (3 s.h.)
CS 06.512  Network Security (3 s.h.)
CS 07.545  Advanced Robotics (3 s.h.)
CS 07.550  Concepts in Artificial Intelligence (3 s.h.)
CS 07.560 Computer Graphics (3 s.h.)
CS 07.565 Computer Vision (3 s.h.)
CS 07.570 Information Visualization (3 s.h.)
CS 07.575 Advanced TCP/IP and Internet Protocols and Technologies (3 s.h.)
CS 07.580 Computer Animation (3 s.h.)

Other Project Intensive courses may be added.
Long-term Schedule (Courses are offered based on the availability of an instructor. Although we would like to offer all the courses listed we can commit to offer only the number of courses indicated in the chart above)

Fall of Even years:
- CS 06.510 Computer Networks (3 s.h.)
- CS 04.560 Design and Implementation of Operating Systems (3 s.h.)
- CS.07.545 Advanced Robotics (3 s.h.)
- CS 07.560 Computer Graphics (3 s.h.) alternating with
- CS 07.580 Computer Animation (3 s.h)
- CS 07.555 Natural Language Processing (3 s.h.)
- CS 07.552 Advanced Cryptography (3 s.h.)
- CS 07.530 Computer Science Thesis I (3 s.h.)
- CS 07.531 Computer Science Thesis II (3 s.h.)
- CS 07.532 Computer Science Thesis III (3 s.h.)

Spring of Odd years:
- CS 04.530 Advanced Database Systems: Theory and Programming (3 s.h.)
- CS 04.548 Programming Languages: Theory, Implementation and Application (3 s.h.)
- CS 07.575 Advanced TCP/IP and Internet Protocols and Technologies (3 s.h.)
- CS 07.550 Concepts in Artificial Intelligence (3 s.h.)
- CS 07.556 Machine Learning (3 s.h.)
- CS 07.590 Game Design and Development (3 s.h)
- CS 07.530 Computer Science Thesis I (3 s.h.)
- CS 07.531 Computer Science Thesis II (3 s.h.)
- CS 07.532 Computer Science Thesis III (3 s.h.)

Fall of Odd years:
- CS 07.540 Advanced Design and Analysis of Algorithms (3 s.h.)
- CS 07.551 Advanced Cyber Security: Principles and Applications (3 s.h.)
- CS 07.522 Advanced Theory of Computing (3 s.h.)
- CS 04.570 Advanced Object Oriented Design (3 s.h.)
- CS 07.565 Computer Vision (3 s.h.)
- CS 07.570 Information Visualization (3 s.h)
- CS 07.530 Computer Science Thesis I (3 s.h.)
- CS 07.531 Computer Science Thesis II (3 s.h.)
- CS 07.532 Computer Science Thesis III (3 s.h.)

Spring of Even years:
- CS 06.512 Network Security (3 s.h.)
- CS 07.523 Advanced Software Engineering (3 s.h.)
- CS 06.520 Topics in Computer Architecture (3 s.h.)
- CS 06.505 Wireless Networks and Systems (3 s.h.)
- CS 04.564 Compiler Design Theory (3 s.h.)
- CS 06.515 Embedded Systems Programming (3 s.h.)
- CS 04.565 System Programming (3 s.h.)
- CS 07.530 Computer Science Thesis I (3 s.h.)
- CS 07.531 Computer Science Thesis II (3 s.h.)
- CS 07.532 Computer Science Thesis III (3 s.h.)