PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE

USC SCHOOL

Viterbi School of Engineering

ACADEMIC DEPARTMENT

Computer Science

GRADUATE PROGRAM

M.S. Computer Science

POSTCODE

674

TERM EFFECTIVE DATE

Fall 2021

PROGRAM DESCRIPTION

A brief description of the graduate program.

The Master of Science in Computer Science provides intensive preparation in the concepts and
techniques related to the design, programming, and application of computing systems. Students are
provided a deep understanding of both fundamentals and important current issues in computer
science and computer engineering so that they may either obtain productive employment or pursue
advanced degrees. The program is open to students with a significant undergraduate computer science
background.

COMMON BACHELOR’S DEGREE PROGRAM PATHWAYS

A list of joint bachelor’s degrees that undergraduate students pursue in advance of pursuing a progressive
degree option with this graduate program. Some programs are restricted to specific majors, while others
are open to all students.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Required or Recommended</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCI 102</td>
<td>Fundamentals of Computation</td>
<td>Required</td>
<td>2</td>
</tr>
<tr>
<td>CSCI 103</td>
<td>Introduction to Programming</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 104</td>
<td>Data Structures and Object Oriented Design</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 170</td>
<td>Discrete Methods in Computer Science</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 201</td>
<td>Principles of Software Development</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 270</td>
<td>Introduction to Algorithms and Theory of Computing</td>
<td>Required</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 356</td>
<td>Introduction to Computer Systems</td>
<td>Required for CSCI minors</td>
<td>4</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE 354</td>
<td>Introduction to Digital Circuits</td>
<td>Required for CECS</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 350</td>
<td>Introduction to Operating Systems</td>
<td>Required for CSCI minors</td>
<td>4</td>
</tr>
</tbody>
</table>

PREPARATORY UNDERGRADUATE COURSES

A list of courses at the undergraduate level that prepares students for the graduate program. Required
coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.
UNDERGRADUATE COURSES USED TO REDUCE GRADUATE-LEVEL UNITS
A list of undergraduate-level courses may be used to reduce the number of graduate-level units required for the graduate program. If there are none, that is specified instead.

<table>
<thead>
<tr>
<th>Dept. Prefix - Course #</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>graduate unit waiver is based on a substantial undergraduate background in computer science.</td>
<td></td>
</tr>
</tbody>
</table>

CORE GRADUATE PROGRAM REQUIREMENTS (# units required)
A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk (*), and the exception is explained in the “Department Notes” section at the end of this course plan template.

PRE-APPROVED ELECTIVE COURSEWORK
Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required for elective coursework.

| 24  | TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE |
| 16  | TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE |

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

| 28  | TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE |
| 8   | TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY) |
| 20  | MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE |
NOTES FROM THE DEPARTMENT
This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

*CSCI 570 may be applied in the CS undergraduate degrees as a replacement for CSCI 270 or as a Technical Elective. If this core M.S. course is used in the undergraduate degree, the student must replace it with a CSCI 500/600-level 4-unit elective. High achieving students also have the option to replace CSCI 570 with CSCI 670 Advanced Analysis of Algorithms in the M.S. degree.

Elective courses can come from any CSCI 500/600-level 4-unit course. Cross-listed courses are not eligible; these electives must be taught under the CSCI prefix. However, we will allow one (1) approved 500-level non-CSCI course from the approved list on our website (DSCI, EE, ISE, and MATH courses may be eligible). See the list at: https://www.cs.usc.edu/students/ms-students/approved-non-cs-courses/.

Research, colloquium, thesis, and internship units cannot be applied toward the required 20 units of coursework for the progressive M.S. They would be counted as additional units beyond the 20-unit minimum.

____________________________________________________________

Kelly Goulis
Authorizing Dean’s Name

October 5, 2021
Date Approved

Senior Associate Dean, Viterbi School of Engineering
Authorizing Dean’s Title

Last Revised 3/2/2021