Computation + Crop Sciences, BS

for the degree of Bachelor of Science Major in Computer Science & Crop Sciences

crop sciences department website: https://cropsciences.illinois.edu/
computer science degree information: https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs#requirements
overview of college admissions & requirements: Agricultural, Consumer & Environmental Sciences (http://catalog.illinois.edu/schools/aces/academic-units/#text)
college websites: https://aces.illinois.edu/ and https://engineering.illinois.edu
computer science contact: undergrad@cs.illinois.edu (academic@cs.illinois.edu)
crop sciences contact: sbartlet@illinois.edu

Computer Science + Crop Sciences (CS+CPSC) is a first-of-its-kind partnership between The Grainger College of Engineering’s Department of Computer Science and the Department of Crop Sciences in the College of Agricultural, Consumer and Environmental Sciences.

Our growing population and changing climate demand out-of-the-box, multidisciplinary thinkers who can handle increasingly rich data sets. CS+CPSC students fill this crucial gap in the agriculture sector, combining a strong technical background with crop sciences expertise powerful enough to change the world.

Students will be among the first to analyze robotics-enabled soil and field measurements, predict weather and climate impacts on food supplies, and accelerate plant improvement through the simultaneous analysis of genetics, environment, and management.

Please see the Computer Science advisor in 1210 Siebel Center, as well as the Crop Sciences advisor in AE-116 Turner Hall.

To graduate from the Computer Science and Crop Sciences curriculum, a student must complete the following courses, all of which must be taken for a traditional letter grade.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>Composition I and Speech</strong></td>
<td></td>
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<tr>
<td>RHET 105 &amp; CMN 101</td>
<td>Writing and Research and Public Speaking</td>
<td>6-7</td>
</tr>
<tr>
<td>OR</td>
<td>CMN 111 &amp; CMN 112</td>
<td>Oral &amp; Written Comm I and Oral &amp; Written Comm II</td>
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<tr>
<td>Advanced Composition</td>
<td>Select from campus-approved list.</td>
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<tr>
<td>Cultural Studies</td>
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Select one course from Western culture, one from non-Western culture, and one from U.S. minority culture from campus approved lists.

Foreign Language
Coursework at or above the third level is required for graduation.

Quantitative Reasoning I
See Mathematical Foundations for specific requirement.

Quantitative Reasoning II
See Mathematical Foundations for specific requirement.

Natural Sciences and Technology
Select from campus-approved list.

Humanities and the Arts
Select from campus-approved list.

Social and Behavioral Sciences
Select from campus-approved list.

ACES Required
ACES 101 Contemporary Issues in ACES 2

Computer Science Core 22
CS 100 Freshman Orientation (recommended) 1
CS 124 Introduction to Computer Science I 3
CS 128 Introduction to Computer Science II 3
CS 173 Discrete Structures 3
CS 222 Software Design Lab 1
CS 225 Data Structures 4
CS 374 Introduction to Algorithms & Models of Computation 4
CS 421 Programming Languages & Compilers 3

Computer Science Technical Track 8-11
Choose from the following options:
CS 233 & CS 241 Computer Architecture and System Programming
OR
CS 240 Introduction to Computer Systems
& Two CS 4XX Any two (2) 400-level CS courses except CS 491

Mathematical Foundations (fulfills Quantitative Reasoning I and II) 12-15
CS 361 Probability & Statistics for Computer Science 3
MATH 220 or MATH 221 Calculus I 4-5
MATH 225 Introductory Matrix Theory 2-4
or MATH 257 Linear Algebra with Computational Applications
or MATH 415 Applied Linear Algebra
or MATH 416 Abstract Linear Algebra
MATH 231 Calculus II 3

Crop Sciences Core 14
CPSC 102 Foundational Skills in Crop Sciences 2
CPSC 112 Introduction to Crop Sciences 4
CPSC 212 Introduction to Plant Protection 4
CPSC 393 Crop Sciences Internship 3
or CPSC 395 Undergrad Research or Thesis

Information listed in this catalog is current as of 08/2021
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CPSC 498</td>
<td>Crop Sci Professional Develpmt</td>
<td>1</td>
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<tr>
<td></td>
<td><strong>Foundational Data Analytics</strong></td>
<td><strong>6-8</strong></td>
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<tr>
<td>CPSC 440</td>
<td>Applied Statistical Methods I</td>
<td>4</td>
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<td>And select one of the following:</td>
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<tr>
<td>CPSC 441</td>
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<tr>
<td>CPSC 444</td>
<td>Introduction to Spatial Analytics</td>
<td></td>
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<tr>
<td></td>
<td><strong>Crop Sciences Electives</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>CPSC/HORT/PLPA 4XX</td>
<td>At least one (1) 400-level CPSC/HORT/PLPA course</td>
<td></td>
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<tr>
<td>CPSC/HORT/PLPA XXX</td>
<td>Any CPSC/HORT/PLPA course except CPSC 241</td>
<td></td>
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<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>126</strong></td>
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