**DOCTOR OF PHILOSOPHY WITH A MAJOR IN HUMAN-CENTERED COMPUTING**

Human-Centered Computing (HCC) is the interdisciplinary science of designing computational artifacts that better support human endeavors. HCC students examine issues such as computer-supported collaborative work and learning, human-computer interaction, human-robot interaction, learning sciences and technology, and mobile and ubiquitous computing - that lie at the intersection of human concerns (such as anthropology, cognitive science, human factors, industrial design, media studies, psychology, and sociology) and computing studies (such as artificial intelligence, computational perception, databases, graphics, information security, networks, programming languages, and robotics).

Students must complete a core of the three courses described below. The required courses will help students develop the first two of the four competency areas that must be demonstrated; these competency areas are

- computing concepts and skills,
- evaluation of HCC systems,
- written research communication, and
- oral research communication.

In consultation with their advisors, students must also complete at least three elective courses, including at least one outside the area of HCC specialization. Areas of elective study may include, but are not restricted to,

- artificial intelligence,
- cognitive science,
- collaboration,
- human-computer interaction,
- information security,
- learning sciences and technology,
- software,
- software engineering, and
- visualization.

Students must also pass a written and oral qualifier (comprehensive examination) and submit and receive approval for a dissertation topic and committee. Students may then be admitted to candidacy.

For more information about the HCC program, visit [www.cc.gatech.edu](http://www.cc.gatech.edu).

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td></td>
<td><strong>Core Courses</strong></td>
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<td></td>
<td><strong>First Year</strong></td>
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<tr>
<td>CS 6451</td>
<td>Introduction to Human-Centered Computing</td>
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<td>Students who need to develop skills in programming</td>
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<td>take CS 4452.</td>
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<tr>
<td>CS 6452</td>
<td>Prototyping Interactive Systems</td>
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<td><strong>Second Year</strong></td>
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| CS 7455| Issues in Human-Centered Computing                  | 3            | 1

CS 7455 delves deeply into theoretical, methodological, conceptual, and technical issues.

Concurrently, each student develops a research portfolio under the supervision of a faculty advisor. The submission of a conference- or journal-quality paper, and a conference-style presentation, satisfies the competencies of written and oral research communications.