

# COMPUTING AND THE ARTS

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Computing and the Arts is an interdepartmental major designed for students who wish to integrate work in computing with work in one of five arts disciplines: architecture, art, history of art, music, or theater studies.

For students with a computing perspective, issues in these disciplines present interesting and substantive problems: how musicians use computers to compose; the limitations of current software tools used by artists; the types of analyses done by art historians; challenges in designing and using virtual sets in the theater; ways that virtual worlds might help to envision new forms of artistic expression; and lessons that can be learned from trying to create a robotic conductor or performer.

For students with an artistic perspective, computing methods offer a systematic approach to achieving their vision. A foundation in computer science allows artists to understand existing computing tools more comprehensively and to use them more effectively. Furthermore, it gives them insight into what fundamentally can and cannot be done with computers, so they can anticipate the future development of new tools for computing in their field.

## PREREQUISITES

The prerequisite for all students in the major is either CPSC 100 or CPSC 112, which should be taken during the first year. There are two additional prerequisites for the Art track, ART 111 and 114. There are two additional prerequisites for the Theater and Performance Studies track, THST 110 and 111. There are no additional prerequisites for the Architecture track, the History of Art track, or the Music track. There is no required favorable review of studio work for admission to the major in any track, but a sophomore review advising session is required for the Art track.

## REQUIREMENTS OF THE MAJOR

Twelve term courses are required beyond the prerequisites, not including the two-term senior project. Six of the courses must be in Computer Science, including CPSC 201, 202, and 223. Students are advised to complete CPSC 202 and 223 by the end of the sophomore year. MATH 244 may be substituted for CPSC 202. The six remaining courses are selected from one of the arts disciplines. Students choose a track in architecture, art, history of art, music, or theater and performance studies. All requirements for a single track must be satisfied, as specified below.

*The Architecture track* requires the following courses in addition to the Computer Science courses listed above: (1) ARCH 150 and 200; (2) two courses from ARCH 260, 312, 360, and 362; (3) two elective courses from either of the two concentrations: Design; or History, Theory, Criticism of Architecture, and Urbanism; (4) two courses from CPSC 376, 437, 446, 451, 475, 478, 479, or 484; and (5) one additional intermediate or advanced CPSC course (excluding CPSC 490).

*The Art track* requires the following courses in addition to the Computer Science courses listed above, as well as a sophomore review at the School of Art: (1) two 100-

level courses beyond ART 111 and 114, such as ART 132 and/or 184 or 185; (2) two courses in Art at the 200 or 300 level, such as ART 285 and/or 370; (3) ART 395; (4) one course in Art at the 400 level, such as ART 495; (5) two courses selected from CPSC 376, 437, 446, 451, 475, 478, 479, or 484; (6) one additional intermediate or advanced Computer Science course (excluding CPSC 490). Seniors following the art track will have access to a shared studio and many facilities in the School of Art.

*The History of Art track* requires the following courses in addition to the Computer Science courses listed above: (1) one introductory, 100-level, History of Art course; (2) two History of Art courses at the 200, 300, or 400 level (the courses must represent two different areas as defined in the History of Art program description); (3) one studio art course (students may need to take a prerequisite course in Art to prepare for the studio course); (4) HSAR 401; (5) one 400-level seminar in History of Art; (6) two courses selected from CPSC 376, 437, 451, 475, 478, or 479, one of which must be CPSC 478 or 479; (7) one additional intermediate or advanced Computer Science course (excluding CPSC 490).

*The Music track* requires the following courses in addition to the Computer Science courses listed above: (1) two courses from *Group I* (Music Theory); (2) three additional courses from *Group I* or *Group II* (Creative Practices); (3) one course from *Group III* (Western Art Music) or *Group IV* (World and Popular Music); (4) CPSC 431; (5) CPSC 432; (6) one additional intermediate or advanced Computer Science course (excluding CPSC 490).

*The Theater and Performance Studies track* requires the following courses in addition to the prerequisites and Computer Science courses listed above: (1) two courses in the Artistic Practice domain; (2) two courses in the Histories domain; (3) two courses in the Performance Theory domain; (4) CPSC 431 or 432; (5) CPSC 478, 479, or 484; (6) one additional intermediate or advanced Computer Science course (excluding CPSC 490).

**Credit/D/Fail** Courses taken Credit/D/Fail may not be counted toward the major.

#### SENIOR REQUIREMENT

The senior project requires two terms: one term of CPSC 490, and one term of ARCH 491, ART 496, HSAR 499, one from MUSI 496–499, or THST 471 or 491, depending on the track chosen. The project must be approved by the DUS and be acceptable to both departments. Students must submit a written report, including an electronic abstract and webpage(s).

#### ADVISING AND APPROVAL OF PROGRAM

The entire program of each student majoring in Computing and the Arts must be approved by the DUS.

#### SUMMARY OF MAJOR REQUIREMENTS

**Prerequisites** *All tracks*—CPSC 100 or CPSC 112; *Art track*—ART 111, 114, and sophomore review; *Theater and Performance Studies track*—THST 110, 111

**Number of courses** 12 term courses beyond prereqs (not incl senior project)

**Specific courses required** *All tracks*—CPSC 201, 202, 223; *Architecture track*—ARCH 150, 200; 2 courses from ARCH 260, 312, 360, 362; *Art track*—ART 395;

*History of Art track* – HSAR 401; *Music track* – CPSC 431, 432; *Theater and Performance Studies track* – CPSC 431 or 432; CPSC 478, 479, or 484

**Distribution of courses** *All tracks* – 3 addtl courses in Comp Sci as specified for each track, to incl 1 intermediate or advanced course (excluding CPSC 490); *Architecture track* – 2 courses from the concentrations, as specified; *Art track* – 2 courses in Art at 100 level (excluding prereqs), 2 courses at 200 or 300 level, and 1 at 400 level as specified; *History of Art track* – 1 intro, 100-level course; 2 courses in different areas of History of Art at 200, 300, or 400 level; 1 sem at 400-level in History of Art; 1 studio art course; *Music track* – 2 courses from *Group I* (Music Theory); 3 courses from *Group I* or *Group II* (Creative Practices); (3) one course from *Group III* (Western Art Music) or *Group IV* (World and Popular Music); *Theater and Performance Studies track* – 2 courses in each of three domains as specified

**Substitution permitted** MATH 244 for CPSC 202

**Senior requirement** *All tracks* – Two-term senior project including CPSC 490, approved by DUS; *Architecture track* – ARCH 491; *Art track* – ART 496; *History of Art track* – HSAR 499; *Music track* – one from MUSI 496–499; *Theater and Performance Studies track* – THST 471 or 491

Computing and the Arts is an interdepartmental major for students who wish to integrate computing with work in architecture, art, history of art, music, or theater studies. Majors explore topics from these arts disciplines in the context of mathematics, computer science, and information technology. For students with a computing perspective, issues in these disciplines present interesting and substantive problems. For students with an artistic perspective, computing methods offer a systematic approach to achieving their vision.

In addition to prerequisites, the major requires six term courses in Computer Science, six in the arts, and a two-term senior project. Students choose a track in one of the arts disciplines and satisfy the corresponding requirements. The capstone of the program is a two-term senior project advised by faculty from Computer Science and from the chosen art.

During the first year, prospective majors with little or no programming experience should take CPSC 100 or CPSC 112, either of which is a prerequisite for all tracks. Students with sufficient programming experience may instead enroll in CPSC 201, which is a requirement of the major for all tracks.

Students considering the music track should take the music theory placement test during orientation. Those whose placement requires them to take MUSI 110 should complete this course by the end of the first year.

Prospective majors should also consider the following courses during the first year, depending on their track of interest:

- ARCH 260, History of Architecture to 1750
- ARCH 262, Modern Architecture from the Enlightenment to the Millenium
- ART 111, Visual Thinking
- ART 114, Basic Drawing
- HSAR 112, Introduction to the History of Art: Prehistory to the Renaissance

- HSAR 115, Introduction to the History of Art: Renaissance to the Present
- MUSI 210, Counterpoint, Harmony, and Form: 1500–1800
- THST 110, Collaboration
- THST 111, Modes of Performance

Students interested in the major are encouraged to discuss their programs with the director of undergraduate studies (DUS) as early as possible.

[View Courses](#)