Department of Computer Science Course and Major Changes

Effective Fall 2019

1) Changes to Majors and Minors

The Department of Computer Science is updating the requirements for the following majors:

- Bachelor of Science in Computer Science (page 3)
- Bachelor of Arts in Computer Science (page 4)
- Bachelor of Science in Mathematics and Computer Science (page 5)

as well as the following minors:

- Minor in Computer Science (page 6)
- Minor in Computer Informatics (page 6)

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Students who have declared a major before 9/4/2019 can elect to complete the current major requirements or to complete the new requirements. If a student chooses to complete the current requirements, the advisor will refer to the date of the first declaration of one of the majors/minors listed above in order to evaluate eligibility upon signing off on the student's course completion review form in the College's Degree Application Packet.

2) Course Number or Title Changes

In addition to major requirement changes, the following courses will have a change in their number and/or title:

Current Listing	New Listing (Effective Fall 2019)
CS 224 Discrete Structures	CS 224 Foundations of Computer Science
CS 255 Comp Org/Assembly Prog.	CS 255 Comp. Arch. and Machine Level Prog.
CS 323 Data Structures and Algorithms	CS 253 Data Structures and Algorithms
CS 355 Computer Architecture	CS 355 Advanced Computer Organization
CS 378 Data Mining	CS 470 Data Mining
CS 425 Artificial Intelligence	CS 325 Artificial Intelligence
CS 450 Systems Programming	CS 350 Systems Programming

For the purposes of completing the older requirements, the new course listings will satisfy the corresponding requirements. For example, CS 253 will satisfy the CS 323 requirement. Students who have completed a course **may not** take its new listing for additional credit toward a major or minor.

3) New Courses

Beginning in the 2019-2020 academic year, the Department will offer two new courses:

CS 326: Analysis of Algorithms:

Course Description: This course explores the formal underpinnings of computational complexity, and studies how to mathematically characterize the efficiency and running times of different computer algorithms. **Prerequisites**: CS 224 and CS 253

CS 334: Machine Learning:

Course Description: This course will cover the underpinnings, algorithms, and practices that enable a computer to learn. Emphasis will be on fundamental theory and algorithms in statistical machine learning, as well as approaches to applying machine learning in a variety of domains. **Prerequisites**: CS 224, CS 253 and Math 221

4) Prerequisite Changes

The Department is revising the following prerequisites:

Course Number	Previous Prerequisites	Prereqs. Effective Fall 2019
CS 224	CS 170 and Math 112	CS 170 and Math 111
CS 253 (323)	CS 171 and CS 224	CS 171
CS 325 (425)	CS 323	CS 253
CS 350 (450)	CS 255	CS 253 and CS 255
CS 355	CS 255	CS 253 and CS 255
CS 370	CS 171	CS 253
CS 377	CS 171	CS 253
CS 424	CS 323	CS 326
CS 428	Any 300+ Level CS course	CS 224 and CS 253
CS 452	CS 450	CS 350
CS 453	CS 450	CS 350
CS 455	CS 450	CS 350
CS 456	CS 424	CS 326
CS 470 (378)	CS 323	CS 224 and CS 253

For the Fall 2019 semester, students who have completed the old prerequisites for a course prior to Fall 2019 may enroll into the course. However, students must complete the new prerequisites for any course that they have not already completed the old prerequisites for prior to Fall 2019. For example, if a student has completed CS 323 before Fall 2019, then they may enroll in CS 470. On the other hand, if the student did not complete CS 323 prior to Fall 2019, then they must complete the new prerequisites, CS 224 and CS 253, in order to enroll in CS 470. Starting in the Spring 2020 semester, students must complete the new prerequisites to enroll in a course.

Bachelor of Science in Computer Science Requirements

Starting Fall 2019
(Total 56 Credits)

Core Courses [26 Credits]
CS 170
CS 171
CS 224
CS 253
CS 255
Math 111
Math 112
Math 221

Foundational Courses [12 Credits]
CS 326
CS 350
CS 370
One of the following: • CS 325 • CS 329 • CS 334 • CS 377

Electives [18 Credits]
Three 400-level CS Courses
Three 300-level CS Courses
One 300-level course may be: • Math 315 • Math 346 • Math 347 • Math 351 • Math 361

Before Fall 2019

Requirements [55-56 Credits]
CS 170
CS 171
CS 224
CS 255
CS 323
Math 111
Math 112
Math 221
CS 424
CS 450
One of the following sequences: • Phys 141/142 • Phys 151/152
Phys 234
Four courses from the following: • Any 300+ level CS Course • Math 315 • Math 346 • Math 361

Bachelor of Arts in Computer Science Requirements

Starting Fall 2019
(Total 44 Credits)

Core Courses [26 Credits]
CS 170
CS 171
CS 224
CS 253
CS 255
Math 111
Math 112
Math 221

Foundational Courses [12 Credits]
CS 326
CS 350
CS 370
One of the following: • CS 325 • CS 329 • CS 334 • CS 377

Electives [6 Credits]
Two 300- or 400-level CS Courses

Before Fall 2019

Requirements [38-39 Credits]
CS 170
CS 171
CS 224
CS 255
CS 323
Math 111
Math 112
Math 221
Four courses from the following: • Any 300+ level CS Course • Math 315 • Math 346 • Math 361

Bachelor of Science in Mathematics and Computer Science Requirements

Starting Fall 2019
(Total 60 Credits)

Core Courses [26 Credits]
CS 170
CS 171
CS 224
CS 253
CS 255
Math 111
Math 112
Math 221

Foundational Courses [16 Credits]
Math 315
CS 326
CS 350
CS 370
One of the following: • CS 325 • CS 329 • CS 334 • CS 377

Electives [18 Credits]
Two 300-level CS Courses
Two 400-level CS Courses
Two Courses from: • Math 346 • Math 347 • Math 351 • Math 361 • Math 362

Before Fall 2019

Requirements [59-60 Credits]
CS 170
CS 171
CS 224
CS 255
CS 323
CS 424
CS 450
Math 111
Math 112
Math 221
Math 250
Math 315
One of the following sequences: • Phys 141/142 • Phys 151/152
Phys 234
Three courses from the following: • Any 300+ level CS Course • Math 346 • Math 361

Minor in Computer Science Requirements

Starting Fall 2019

Requirements [28 Credits]
Math 111
CS 170
CS 171
CS 224
CS 253
CS 255
Three 300+ CS Courses

Before Fall 2019

Requirements [19 Credits]
CS 170
CS 171
CS 255
Three 200+ level CS Courses

Minor in Computer Informatics Requirements

Starting Fall 2019

Requirements [28 Credits]
Math 111
CS 170
CS 171
CS 224
CS 253
Three 300+ CS Courses
One Course from: • **CS 325** • **CS 329** • **CS 334** • **CS 377**

Before Fall 2019

Requirements [19 Credits]
One course from: • **CS 153** • **CS 155**
CS 170
CS 171
Three courses from: • **CS 323** • **CS 325** • **CS 370** • **CS 377** • **CS 378**