



ACADEMIC CATALOG

Undergraduate Catalog | 2025-2026

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Computer Science, Data Science Concentration, B.S.



This concentration is designed to best prepare students to match the diverse requirements of employers. It also prepares students to pursue graduate studies in computing and other related areas.

The B.S. in Computer Science program requires a common set of computer science courses, a set of courses within the concentration, as well as a set of elective courses outside the non-computer science discipline, satisfied by a second major, or a minor. Graduates from the B.S. program are expected to have knowledge and skill in computer science plus elective coursework outside the discipline.

All program-level Admissions and Progression Requirements are in addition to the University of North Carolina at Charlotte Admission Requirements.

Admission Requirements

Freshmen

- See University Admission Requirements
- *Minimum GPA:* 2.5
- Admission is competitive for computer science programs and, if admissible, freshmen must present a minimum SAT-Math score of 530 or ACT-Math subscore of 22.

Transfers

- See University Admission Requirements
- *Minimum GPA:* 2.5
- *Pre-Major/Prerequisite Courses:* A grade of C or above is required in any previously attempted Computer Science course(s). Students must be able to transfer credits for the equivalent of College Algebra.
- *Transferable Credit Hours:* 24

Currently Enrolled Students

- *Minimum GPA:* 2.5
- Must have earned 12 or more hours at UNC Charlotte
- Must have earned a grade of C or higher in MATH 1241, or MATH 1120 (Note: Students coming in with MATH 1120 will still be required to take MATH 1241 for the Bachelor of Science program)
- Must have earned a grade of C or higher in ITSC 1212, or ITSC 1110, or DTSC 1302
- Participation in a Change of Major Workshop offered by the CCI Advising Center is required before becoming eligible to declare the Computer

Degree Requirements

General Education Courses (31-32 credit hours)

For details on required courses, refer to the [General Education Program](#). Total hours to satisfy General Education Requirements may vary as some general education requirements may be double-counted in the major with departmental approval. Please see your advisor for information. Students majoring in Computer Science should plan on taking the following courses that meet both general education and major requirements:

- [MATH 1241 - Calculus I](#) (3) *(fulfills Quantitative/Data requirement)*
- [MATH 1242 - Calculus II](#) (3) *(fulfills Quantitative/Data requirement)*

Major Courses (53 credit hours)

Core Courses (29 credit hours)

- [ITSC 1212 - Introduction to Computer Science I](#) (4)
- [ITSC 1213 - Introduction to Computer Science II](#) (4)
- [ITSC 1600 - Computing Professionals](#) (2)
- or [ITSC 2600 - Computer Science Program, Identity, Career](#) (2)
- [ITSC 2175 - Logic and Algorithms](#) (3)
- or [MATH 2165 - Introduction to Discrete Structures](#) (3)
- [ITSC 2181 - Introduction to Computer Systems](#) (4)
- [ITSC 2214 - Data Structures and Algorithms](#) (4)
- [ITSC 3146 - Introduction to Operating Systems and Networking](#) (3)
- [ITSC 3155 - Software Engineering](#) (3)

- ITSC 3688 - Computers and Their Impact on Society (3)

Mathematics and Statistics Courses (6 credit hours)

- MATH 2164 - Matrices and Linear Algebra (3)
- STAT 2122 - Introduction to Probability and Statistics (3)

Elective Courses in Other Disciplines (15 credit hours)

Select 15 elective credit hours. Courses that count towards this requirement must have a discipline prefix other than ITSC, ITCS, or ITIS. This requirement can be fulfilled by pursuing a/an:

- Minor
- Second major
- Honors program
- Undergraduate certificate
- Set of courses selected by the student that do not satisfy any other degree requirement

Capstone Course (3 credit hours)

Select one of the following:

- ITCS 4232 - Game Design and Development Studio (3)
- ITIS 4390 - Interaction Design Projects (3)
- ITIS 4246 - Competitive Cyber Defense (3)
- ITSC 4155 - Software Development Projects (3)
- ITSC 4681 - Senior Design I (3)
- ITSC 4682 - Senior Design II (3)
- ITSC 4850 - Senior Project I (3)
- ITSC 4851 - Senior Project II (3)
- ITSC 4990 - Undergraduate Research (3)
- ITSC 4991 - Undergraduate Thesis (3)

- ITSC 4750 - Honors Thesis (3)

Concentration Courses (21 credit hours)

Concentration Required Courses (6 credit hours)

- ITCS 3162 - Introduction to Data Mining (3)
- ITSC 3160 - Database Design and Implementation (3)

Concentration Elective Courses (9 credit hours)

Select any three courses from the list below:

- ITCS 3156 - Introduction to Machine Learning (3)
- ITCS 3190 - Introduction to Cloud Computing for Data Analysis (3)
- ITCS 3216 - Introduction to Cognitive Science (3)
- ITCS 4114 - Real World Algorithms (3)
- ITCS 4121 - Information Visualization (3)
- ITCS 4122 - Visual Analytics (3)
- ITCS 4152 - Introduction to Computer Vision (3)
- INFO 3236 - Business Analytics (3)
- ITIS 4310 - Web Mining (3)

Concentration Technical Elective Courses (6 credit hours)

Select two elective courses from the 3000- or 4000- levels of courses offered by the College of Computing and Informatics.

Unrestricted Elective Courses

As needed to complete the credit hours required for graduation.

Degree Total = 120 Credit Hours

Cooperative Education Program

By participating in the Cooperative Education program, students in a Computer Science degree program may pursue their education along with alternating semesters of full-time work experiences so that they may be better prepared to enter their chosen professional career. Interested students should contact the [University Career Center](#) for more information.

Experiential Learning and Service Opportunities

Students are encouraged to participate in professional work experiences in support of their academic and career development through the cooperative education, 49ership, internship, and service programs offered to them. The College of Computing and Informatics works with the University Career Center to expand experiential learning offerings to enable more students to graduate with career-related experience. For more information about experiential learning opportunities, please see the University Career Center section within the [Office of Undergraduate Education](#) in this Catalog.

Progression Requirements

The GPA requirement for all Computer Science undergraduate degree programs is 2.0 or above in all courses applied to the degree and all courses in the major.

Students have a limit of 3 attempts per course in the major. This applies to all courses listed under the Major Courses and Concentration Courses categories of B.S. and B.A. in Computer Science degree programs. The third attempt at a course can only be approved by petition. In addition, a Withdrawal

does not count as an attempt, as that effort is already restricted via the Withdrawal limit.

Students are required to achieve a grade of C or above in all Core Courses within the major, as listed above.

Honors Program

For details about the College of Computing and Informatics Honors Program, visit the [program page](#).



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