Bachelor of Science: Major in GIS + CS  
2023-2024 Catalog Year

**University Core Requirements**

- 120 total semester hours
- 42 advanced hours
  - 24 advanced hours must be completed at UNT, including 12 advanced hours in your major
- Minimum of 30 hours must be completed at UNT
- Grades of C or better in all major coursework

**English:** 6 hours (Grades of C or better)

ENGL 1310 or TECM 1700  
ENGL 1320 or TECM 2700  

**Math:** 3 hours (Grades of C or better for major)

MATH 1650 (Requires MATH 1100)  

**Life & Physical Sciences:** 6 hours

See approved list (GEOL 1610 & GEOG 1710 recommended)  

**Creative Arts:** 3 hours

See approved list  

**Language, Philosophy & Culture:** 3 hours

See approved list  

**American History:** 6 hours

HIST 2610  
HIST 2620  

**Government/ Political Science:** 6 hours

PSCI 2305  
PSCI 2306  

**Social & Behavioral Sciences:** 3 hours

See approved list (GEOG 1200 recommended)  

**Component Area Option Course:** 6 hours

See approved list  

**Required Courses (46 hours)**

**GIS Core (18 hours):**

- GEOG 3500: Introduction to GIS
- GEOG 4550: Advanced GIS
- GEOG 4560: Introduction to Python Programming
- GEOG 4570: Special Topics in GIS (Various Options)
- GEOG 4590: Advanced GIS Programming

Choose one elective from the four options below:

- GEOG 4195: Geospatial Data Analytics and Visualization
- GEOG 4230: Location Intelligence: Business GIS Concepts and Apps.
- GEOG 4530: Digital Image Analysis
- GEOG 4580: GIS in Health

**Computer Science Core (13 hours):**

- CSCE 1030: Computer Science I
- CSCE 1040: Computer Science II
- or
- CSCE 1035: Computer Programming I
- CSCE 1045: Computer Programming II

CSCE 2100: Foundations of Computing
CSCE 2110: Foundations of Data Structures

**Tracks within the major (select one track below):**

**Computer Science Track (3 hours required & 12 hours electives):**

- CSCE 3110: Data Structures and Algorithms (Required)
- CSCE 3850: Introduction to Computational Life Science (Elective)
- CSCE 4110: Algorithms (Elective)
- CSCE 4201: Introduction to Artificial Intelligence (Elective)
- CSCE 4205: Introduction to Machine Learning (Elective)
- CSCE 4230: Introduction to Computer Graphics (Elective)
- CSCE 4350: Fundamentals of Database Systems (Elective)
- CSCE 4380: Data Mining (Elective)
- CSCE 4810: Biocomputing (Elective)
- CSCE 4820: Computational Epidemiology (Elective)

**Information Technology Track (6 hours required & 9 hours electives):**

- CSCE 3055: IT Project Management (Required)
- CSCE 3615: Enterprise Systems Architecture and Design (Required)
- CSCE 3220: Human Computer Interfaces (Elective)
- CSCE 3420: Internet Programming (Elective)
- CSCE 3530: Introduction to Computer Networks (Elective)
- CSCE 3550: Foundations of Cybersecurity (Elective)
- CSCE 3600: Principles of Systems Programming (Elective)
- CSCE 3850: Introduction to Computational Life Science (Elective)
- CSCE 4350: Fundamentals of Database Systems (Elective)
- CSCE 4810: Biocomputing (Elective)
- CSCE 4820: Computational Epidemiology (Elective)

*15 hours are required in one of the tracks listed above. Blending courses from tracks requires faculty advisor approval beforehand. See Academic Advisor to discuss track selection, course prerequisites, and course sequencing.

**Additional Information**

Some courses may require Department Consent for non-CSCE majors using override request: https://computerscience.engineering.unt.edu/