Sequence of CS Core Courses and Concentrations
(UTSA 2018-2020 Catalog)

Assumed Precollege

- MAT 1073 Algebra for Scis. & Engs.
- MAT 1093 Precalculus
- MAT 1214 Calculus I
- MAT 1224 Calculus II

CS 2233 Discrete Math
- CS 3333 Math. Foundations
- CS 3443 App. Programming
- CS 3723 Prog. Languages
- CS 3743 Analysis of Alg.
- CS 3743 Database Systems

CS 2123/1 Data Structures
- CS 3423/1 Syst. Programming
- CS 3423/1 Comp. Org.
- CS 3733 Operating Systems
- CS 3843/1 Comp. Architecture

CS 1083 Programming I
- CS 1713/1 Programming II
- CS 2123/1 Data Structures
- CS 3723/1 Comp. Org.

Concentration in Cyber Security
- CS 2433 Principles of Cyber Security
- Select three of:
  - CS 3433 Computer & Information Security
  - CS 4353 Unix & Network Security
  - CS 4363 Cryptography
  - CS 4643 Cellular & Mobile Technologies
  - CS 4653 Software & Malware Reverse Engineering
  - CS 4663 Distributed & Cloud Systems Security
  - CS 4673 Cyber Operations
  - CS 4683 Secure Software Development & Analysis

Concentration in Cloud & Systems
- CS 4843 Cloud Computing
- Select two of:
  - CS 3873 Computer Networks
  - CS 4243 Large-Scale Data Management
  - CS 4633 Simulation Techniques
  - CS 4663 Distributed & Cloud Syst. Sec.
  - CS 4713 Compiler Construction
  - CS 4823 Parallel Programming
  - CS 4833 Embedded Systems
  - CS 4853 Advanced Syst. Programming
  - CS 4863 Dist. Computing & Systems
  - CS 4963 Advanced Topics in Systems & Cloud

Concentration in Software Engineering
- CS 3773 Software Engineering
- Select two of:
  - CS 4393 User Interfaces
  - CS 4683 Secure Software Dev. & Analysis
  - CS 4723 Software Valid. & Qual. Assurance
  - CS 4743 Enterprise Software Engineering
  - CS 4773 Object-Oriented Systems
  - CS 4783 Advanced Software Engineering

Concentration in Data Science
- CS 3753 Data Science
- Select two of:
  - CS 3793 Artificial Intelligence
  - CS 4223 Bioinformatics & Big Data
  - CS 4233 Comp. Biology & Bioinformatics
  - CS 4243 Large-Scale Data Management
  - CS 4373 Data Mining
  - CS 4973 Advanced Topics in Data Science

Degree Hours:
- 42 hours core curriculum
- 48 hours required CS courses
- 24 hours upper division CS electives
- 6 hours free electives
- 120 hours total

Gateway Courses
Students pursuing the B.S. degree in Computer Science must successfully complete each of the Gateway Courses with a grade of “C-” or better in no more than two attempts.

All courses in concentrations are elective courses. See catalog for more details about prerequisites.