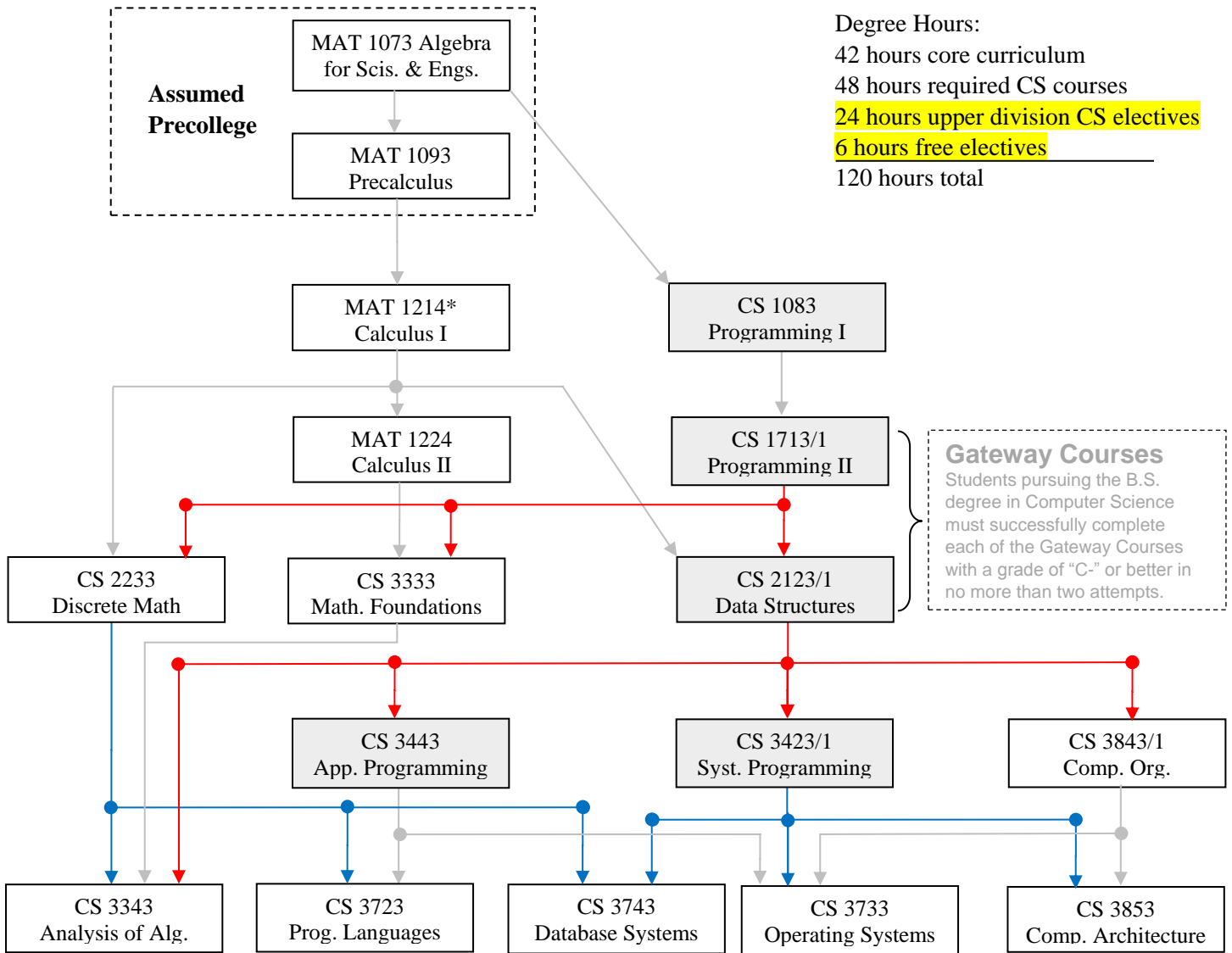


Sequence of CS Core Courses and Concentrations (UTSA 2018-2020 Catalog)



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.

- 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 three 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

All courses in concentrations are elective courses. See catalog for more details about prerequisites.
 *MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement

Computer Science Electives (UTSA 2018-2020 Catalog)

CS 1023	Cultural Implications of the Information Society
CS 1033	Microcomputer Applications
CS 1143	Web Design
CS 1153	Game Programming
CS 1173	Data Analysis and Visualization
CS 2073	Computer Programming with Engineering Applications
CS 2153	Game Design
CS 3113	Principles of Cyber Security
CS 3433	Computer and Information Security
CS 3753	Data Science
CS 3773	Software Engineering
CS 3793	Artificial Intelligence
CS 3873	Computer Networks
CS 4223	Bioinformatics and Big Data
CS 4233	Computational Biology and Bioinformatics
CS 4243	Large-Scale Data Management
CS 4313	Automata, Computability, and Formal Languages
CS 4353	Unix and Network Security
CS 4363	Cryptography
CS 4373	Data Mining
CS 4383	Computer Graphics
CS 4393	User Interfaces
CS 4413	Web Technologies
CS 4423	Game Development
CS 4593	Topics in Computer Science
CS 4633	Simulation Techniques
CS 4643	Cellular and Mobile Technologies
CS 4653	Software and Malware Reverse Engineering
CS 4663	Distributed and Cloud Systems Security
CS 4673	Cyber Operations
CS 4683	Secure Software Development and Analysis
CS 4713	Compiler Construction
CS 4723	Software Validation and Quality Assurance
CS 4743	Enterprise Software Engineering
CS 4773	Object-Oriented Systems
CS 4783	Advanced Software Engineering
CS 4823	Parallel Programming
CS 4833	Embedded Systems
CS 4843	Cloud Computing
CS 4853	Advanced Systems Programming
CS 4863	Distributed Computing and Systems
CS 4963	Advanced Topics in Systems and Cloud
CS 4973	Advanced Topics in Data Science
CS 4993	Honors Research