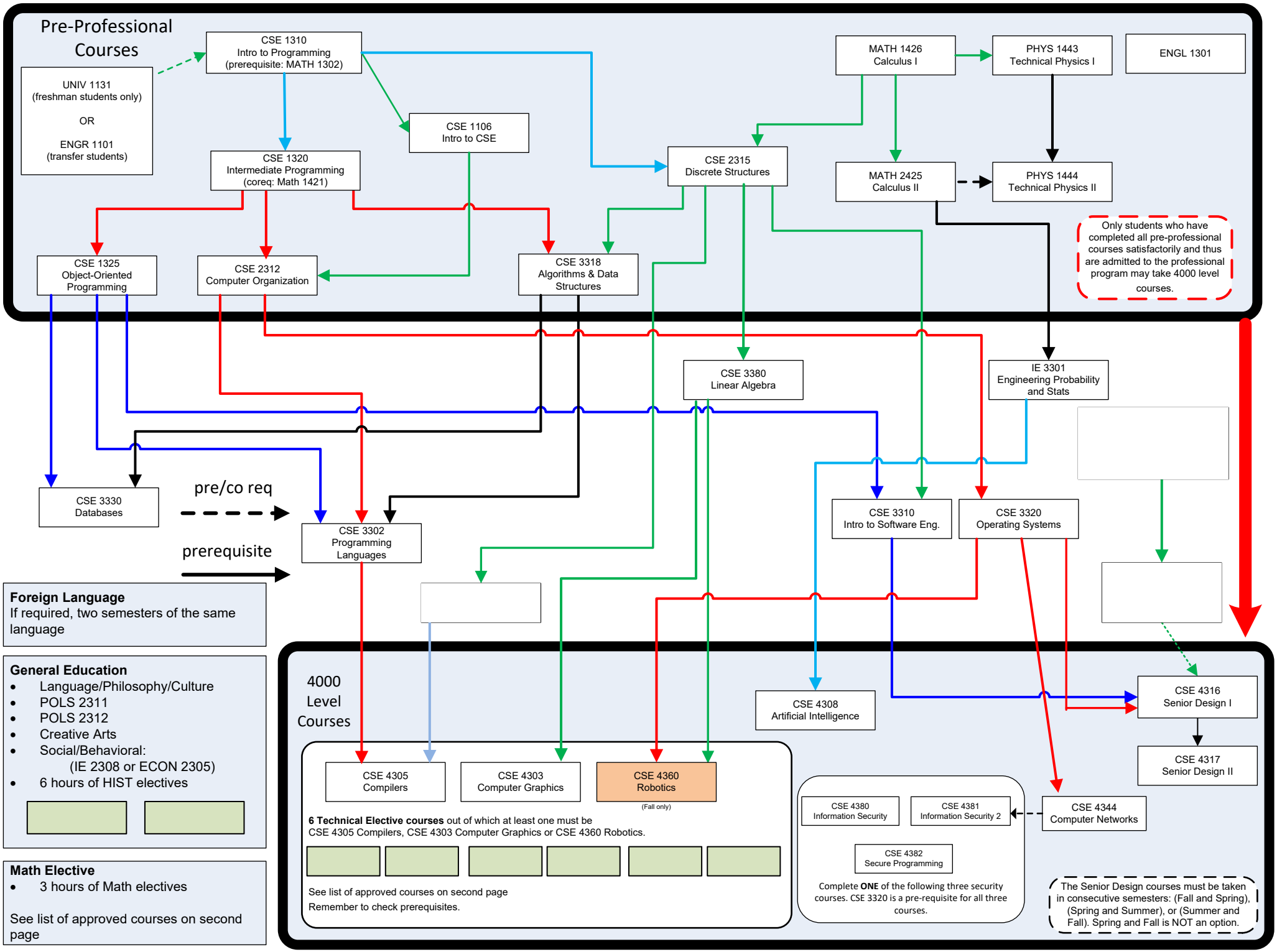
BS in Computer Science (BSCS), 2021-2022 Catalog



Bachelor of Science in Computer Science

Degree Plan Requirements **Fall 2021/Spring 2022 Catalog**

UNIVERSITY OF TEXAS ARLINGTON | COLLEGE OF ENGINEERING

Student Name: _____ UTA ID#: _____

General Education/Core Curriculum

	Course	Hours Earned	Hours
	US History*		3
	US History*		3
	POLS 2311		3
	POLS 2312		3
	ECON 2305 or IE 2308		3
	Creative Arts*		3
	Language, Philosophy, and Culture*		3
	ENGL 1301		3
	COMS 2302		3
	TOTAL General Education/Core		27

Mathematics

	Course	Hours Earned	Hours
	MATH 1426 Calculus I		4
	MATH 2425 Calculus II		4
	IE 3301 or MATH 3313 Engr. Probability		3
	CSE 3380 or MATH 3330 Linear Algebra		3
	Math Elective **		3
	TOTAL Mathematics		17

Science

	Course	Hours Earned	Hours
	PHYS 1443 Technical Physics 1		4
	PHYS 1444 Technical Physics 2		4
	TOTAL Science		8

COE Foreign Language

__ Earned in High School,

__ Earned in College, or

__ Exempt (ESL)

Engineering Success

	Course	Hours Earned	Hours
	ENGR 1101 or UNIV 1131		1
	TOTAL Engineering Success		1

Major: Computer Science

	Course	Hours Earned	Hours
	CSE 1106 Introduction to CSE		1
	CSE 1310 Introduction to Programming		3
	CSE 1320 Intermediate Programming		3
	CSE 1325 Object-Oriented Programming		3
	CSE 2312 Computer Organization		3
	CSE 2315 Discrete Structures		3
	CSE 3318 Algorithms & Data Structures		3
	CSE 3302 Programming Languages		3
	CSE 3310 Intro to Software Engineering		3
	CSE 3314 Professional Practices		3
	CSE 3315 Theoretical Concepts		3
	CSE 3320 Operating Systems		3
	CSE 3330 Database Systems		3
	CSE 4303 or 4305 or 4360		3
	CSE 4308 Artificial Intelligence		3
	CSE 4316 Senior Design I		3
	CSE 4317 Senior Design II		3
	CSE 4344 Computer Networks		3
	CSE 4380 or 4381 or 4382		3
	Technical Elective**		3
	Technical Elective**		3
	Technical Elective**		3
	Technical Elective**		3
	Technical Elective**		3
	TOTAL Computer Science		70

Total Hours for CSE Degree Plan 2021: 123 Hours

* Refer to the UTA catalog for options (https://catalog.uta.edu/degreerequirements/generalcorerequirements/)

** Refer to flowcharts on website for options (https://www.uta.edu/academics/schools-colleges/engineering/academics/degree-plans)

BS in Computer Science Course Pre/Co-requisite Requirements 2021-2022

- This document lists all courses required for a BS degree in Computer Science along with any required pre-requisites and co-requisites.
- For Texas Common Course Number (TCCN), visit https://www.uta.edu/admissions/apply/transfer/transfer-guides. Scroll down the page to view "Current Transfer Guides." Prior to registering, confirm with your UTA advisor any courses you plan to take outside of UTA.
- This document lists three categories of course requirements: 1. General Education; 2. Pre-professional; and 3. Professional.
- To be eligible to enroll in College of Engineering (COE) pre-professional and/or professional level courses, must be in "good standing" with the College

1. General Education

U.S. History

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
Any U.S. History course from the UTA approved list	None	ENGL 1301 (HIST 1301/2)	None
Any U.S. History course from the UTA approved list	None	ENGL 1301 (HIST 1301/2)	None

Political Science

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
POLS 2311 – Government of the United States	None	None	None
POLS 2312 – State and Local Government	None	None	None

Social/Behavioral Science

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
IE 2308 – Economics for Engineers or ECON 2305 – Principles of Macroeconomics	MATH 1426 (for IE 2308)	None	None

Creative Arts

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
Any Creative Arts course from the UTA approved list	Varies	None	None

Language, Philosophy, Culture

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
Any Language, Philosophy, Culture course from the UTA approved list	Varies	None	None

Communication

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
ENGL 1301 – Rhetoric and Composition 1	None	None	None
COMS 2302 – Professional and Technical Communication	ENGL 1301 & 30 hrs. completed	None	None

Mathematics

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
MATH 1426 – Calculus 1	MATH 1421 or ALEKS scores	None	None
MATH 2425 – Calculus 2	MATH 1426	None	None
IE 3301 – Engineering Probability or MATH 3313 – Intro to Probability	For IE 3301 – MATH 2425 (or concurrent enrollment) For MATH 3313 – C or better in MATH 2326, or student group	None	None
CSE 3380 or MATH 3330 Linear Algebra	For CSE 3380- C or better in CSE 2315 For MATH 3330- C or better in MATH 2425	None	None
Math Elective	Varies	Varies	Varies

Science

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
PHYS 1443 – Physics 2 with Lab	MATH 1426	None	None
PHYS 1444 – Physics 2 with Lab	PHYS 1443	MATH 2425	None

Engineering

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
Transfer Students: ENGR 1101 – Entrance to Engineering or Freshmen: UNIV 1131 – Student Success	None	None	None

2. Computer Science Pre-Professional Engineering Courses

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
CSE 1106 – Introduction to Computer Science and Engineering	CSE 1310	None	None
CSE 1310 – Introduction to Computers and Programming	C or better in MATH 1302 or C or better in (or concurrent enrollment in) a subsequent mathematics course (MATH 1421, MATH 1426, MATH 2425, MATH 2326, MATH 3330, HONR-SC 1426 or HONR-SC 2425) and C or better in UNIV 1131 (or concurrent enrollment) or ENGR 1101 (or concurrent enrollment)	ENGR 1101 or UNIV 1131	None
CSE 1320 – Intermediate Programming	C or better in CSE 1310 or C or better in CSE 1312, and C or better in (or concurrent enrollment) (MATH 1421, MATH 1426, MATH 2425, MATH 2326, MATH 3330, HONR-SC 1426, or HONR-SC 2425) and C or better in UNIV 1131 (or concurrent enrollment) or ENGR 1101 (or concurrent enrollment)	ENGR 1101 or UNIV 1131	None
CSE 1325 – Object-Oriented Programming	CSE 1320	None	None
CSE 2312 – Computer Organization and Assembly Language Programming	C or better in CSE 1320 and a C or better in CSE 1106	None	None
CSE 2315 – Discrete Structures	C or better in CSE 1310 and MATH 1426 (or C or better in or concurrent enrollment in MATH 2425)	None	None
CSE 3318 – Algorithms and Data Structures	CSE 1320 and CSE 2315	None	None

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
CSE 3302 – Programming Languages	C or better in each of the following: CSE 1325, CSE 2312, and CSE 3318	None	None
CSE 3310 – Fundamentals of Software Engineering	C or better in each of the following: CSE 1320, CSE 1325 and CSE 2315	None	None
CSE 3314 – Professional Practices	COMS 2302 & CSE 3318	None	None
CSE 3315 – Theoretical Concepts in Computer Science and Engineering	C or better in CSE 2315	None	None
CSE 3320 – Operating Systems	C or better in CSE 2312	None	None
CSE 3330 – Database Systems and File Structures	C or better in each of the following: CSE 1325 and CSE 3318	None	None

3. Computer Science Professional Courses: MUST BE ADMITTED INTO A CSE PROFESSIONAL PROGRAM

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
CSE 4303 – Computer Graphics or CSE 4305 – Compilers for Algorithmic Languages or CSE 4360 – Autonomous Robot Design and Programming	CSE 4303: C or better in each of the following: CSE 3318, and either CSE 3380 or MATH 3330 CSE 4305: C or better in CSE 3302 and CSE 3315 CSE 4360: C or better in CSE 3318, CSE 3320 and CSE 3380 (or MATH 3330)	None	None
CSE 4308 – Artificial Intelligence	C or better in each of the following: CSE 3318 and (IE 3301 and MATH 3313)	None	None
CSE 4316 – Computer System Design Project I	For academic plan CS_CS or SE_SE, C or better in CSE 3310 and CSE 3320, and C or better in CSE 3314 (or concurrently). For academic plan CSE_CP, C or better in CSE 3320 and CSE 3442, and C or better in CSE 3314 (or concurrently)	CSE 3314	None
CSE 4317 – Computer System Design Project II	C or better in CSE 4316 and continuation with the same team	None	None
CSE 4344 – Computer Network Organization	C or better in CSE 3320	None	None
CSE 4380 – Information Security or CSE 4381 – Information Security II or CSE 4382 – Secure Programming	CSE 4380: C or better in CSE 3320 CSE 4381: C or better in CSE 3320 and C or better in CSE 4344 CSE 4382: C or better in CSE 3320	CSE 4381: CSE 4344	None

Course Required	Prerequisites	Corequisites*	UTA Alternative Course Options
Technical Elective 1	Varies	Varies	Varies
Technical Elective 2	Varies	Varies	Varies
Technical Elective 3	Varies	Varies	Varies
Technical Elective 4	Varies	Varies	Varies
Technical Elective 5	Varies	Varies	Varies

*In order for a course to be considered a co-requisite, both courses must be registered for at UTA.