BS – Data Science

(SC-BS/????)

2025 Catalog year: College of Science and Engineering

Freshman Fall semester	Freshman Spring semester	Sophomore Fall semester	Sophomore Spring semester	Junior Fall semester	Junior Spring semester	Senior Fall semester	Senior Spring semester

Grey boxes = Courses required for the major that also satisfy a CS minor

12 hours MATH/CS electives: see next page for options

3 hours of natural science (see advisor for options)

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MATH 2328 (F,S,Su) Elementary Statistics *TCCNS: MATH ???*

CS 4379G Data Science & Visualization w/ Python

MATH 2358 (F,S,Su) Discrete Math I *TCCN MATH 2305*

CS 1428 (F,S,Su) Foundations of Computer Science I *TCCN COSC 1437/1337*

CS 2308 (F,S,Su) Foundations of Computer Science II *TCCN COSC 2436/2336*

CS 3358 (F,S,Su) Data Structures

CS 3354 (F,S,Su) Intro to Object-Oriented Design

CS 4347 (??) Intro to Machine Learning

Or MATH 2328

MATH 2393 (F,S,Su) Calculus III *TCCNS: MATH 2415*

MATH 3305 (F,S,Su) Probability & Statistics

MATH 3324 (??) Applied Multivariate Stats

MATH 4305 (F,S) Advanced Prob & Stats

MATH 2471 (F,S,Su) Calculus I *TCCNS: MATH 2413*

MATH 2472 (F,S,Su) Calculus II *TCCNS: MATH 2414*

MATH 3380 (F,S) Analysis I

MATH 3376 (F,S) Applied Linear Algebra

MATH 3330 (F,S,Su) Intro to Advanced Math

MATH 3383 (F,S) Numerical Analysis I

MATH 4383 (S) Numerical Analysis II

This is not an official degree audit and it is subject to change. This chart is intended to be used by students who start out at Texas State. Please contact the College of Science and Engineering Undergraduate Advising Center for advising.

Note: In addition to major courses, students must also complete all core and minor requirements (if applicable) and any other requirements for graduation.

KEY:
Arrows indicate prerequisites.
Arrows with dotted lines indicate co-requisites.
Arrows with dash lines are recommended prerequisites.
Courses taught in specific semesters are indicated with the following codes:
F-Fall   Su-Summer Session I or II
S-Spring

Required WI courses:
Additional WI courses: MATH 4337A, MATH 4337C, CS 2315, ENG 2310-2360, ENG 3303 – *Discuss with advisor to complete WI requirement.*

Core courses must be completed:

Credits	TXST options
___ 6 credits Core 010	TXST options: ENG 1310, ENG 1320, ENG 1321, ENG 3303, COMM 1310
___ 3 credits Core 020	MATH required course: Satisfied in Major MATH 2471
___ 6 credits Core 030	TXST options: See catalog for options
___ 3 credits Core 040	TXST options: ENG 2310, 2320, 2330, 2340, 2359, 2360, 2371, PHIL 1305, 1320
___ 3 credits Core 050	TXST options: ART 2313, DAN 2313, MU 2313, TH 2313
___ 6 credits Core 060	TXST options:[HIST 1310/2327/2381] and [HIST 1320/2328/2382]
___ 6 credits Core 070	TXST options: POSI 2310 & POSI 2320
___ 3 credits Core 080	TXST options: ANTH 1312, ECO 2301, ECO 2314, GEO 1310, PSY 1300, SOCI 1310, CA 2351, PFW 1301
___ 6 credits Core 090, 091, 092, 093, and 094	MATH required course: Satisfied in Major MATH 2472 (092) See catalog for options: http://mycatalog.txstate.edu/undergraduate/general-education-core-curriculum/

US 1100 may be required for some students. Consult with an advisor regarding course choices.

Prescribed electives:

6-12 hours of electives from:

- MATH 3323 Differential Equations (F,S,Su)
- MATH 3348 Deterministic Operations Research (F)
- MATH 3398 Discrete Mathematics II (F,S,Su)
- MATH 4306 Fourier Series and Boundary Value Problems (S)
- MATH 4315 Analysis II (F,S)
- MATH 4330 General Topology (F)
- MATH 4336 Studies in Applied Mathematics
- MATH 4337A Topological Data Analysis
- MATH 4337C Numerical Methods for Ordinary Differential Equations (F)
- MATH 4337H Undergraduate Research in Topology & Artificial Neural Networks
- MATH 4350 Introduction to Combinatorics (S)

Check prerequisites

0-6 hours of electives from:

- CS 2315 Computer Ethics (F,S)
- CS 2318 Assembly Language (F,S,Su)
- CS 3339 Computer Architecture (F,S,Su)
- CS 3360 Computing Systems Fundamentals (F,S)
- CS 3398 Software Engineering (F,S,Su)
- CS 4315 Introduction to Data Mining and Information Retrieval (S)
- CS 4332 Introduction to Database Systems (F,S)
- CS 4337 Introduction to Computer Vision (F)
- CS 4346 Introduction to Artificial Intelligence (F,S)
- CS 4371 Computer System Security (F,S)
- CS 4379E Introduction to Network Science
- CS 4379F Distributed Data Processing
- CS 4379Q Introduction to Recommender Systems

Check prerequisites

Recommended General Electives:

- IE 3305 Introduction to Data Analysis
- IE 3340 Operations Research
- IE 4330 Reliability Engineering
- IE 4340 Non-linear optimization
- IE 4342 Advanced Linear and Integer Programming
- IE 4320 Integrated Production Systems
- IE 4350 Supply Chain Engineering
- IE 4370 Probabilistic Operations Research
- IE 4381 Introduction to Systems Engineering
- IE 4399D Heuristic Optimization
- MFGE 4396 Manufacturing Systems Design

Some students may need to take general electives to reach the 120 minimum hours required to meet graduation requirements. Not all students will need general electives depending on their minor, courses transferred to TXST, and/or AP or dual credit previously earned.

Check prerequisites