

# GRADUATE CERTIFICATE IN DATA SCIENCE

The fully online Graduate Certificate in Data Science is designed to educate professionals or non-traditional students with a stackable set of core Data Science courses, which help students obtain industry-recognized, immediately valuable, and in-demand skills in the workplace.

**Additional Information:** Reference the Program Landing Page (<https://www.shsu.edu/programs/certificate/data-science/>) for additional information, such as cost, delivery format, contact information, or to schedule a visit.

Applicants seeking admission to the Graduate Certificate in Data Science program must submit the following directly to the Office of Graduate Admissions (<https://www.shsu.edu/dept/graduate-admissions/prospective-students.html>):

1. Graduate Application (<http://www.shsu.edu/admissions/apply-texas.html>)
2. Application fee (<http://www.shsu.edu/admissions/apply-texas.html>)
3. Official transcript from the baccalaureate degree granting institution
4. Bachelor's degree in Computer Science or a closely related field with a minimum GPA of 3.0
5. Up-to-date Resume

## Stem Requirement

At the minimum, students are expected to present a background comparable to that provided in the following courses as described in the Undergraduate Catalog of Sam Houston State University:

### Prerequisite courses

Code	Title	Hours
<b>Prerequisite Courses</b>		
COSC 1436	Programming Fundamentals I	4
COSC 1437	Programming Fundamentals II	4
COSC 3318	Data Base Management Systems	3
COSC 3319	Data Structures and Algorithms	3
COSC 4318	Advanced Language Concepts	3
COSC 4327	Computer Operating Systems	3
MATH 1420	Calculus I	4
STAT 3379	Statistical Methods in Practice	3

Students **who have not fulfilled** the prerequisites in formal coursework **are required** to take one or more of the graduate stem courses. These courses **do not apply** towards the degree plan.

### Graduate Stem Course Requirements

Code	Title	Hours
<b>Graduate Stem Course Requirements</b>		
COSC 5301	Quantitative Foundations of Computer Science	3
COSC 5302	Computer Science Core Topics	3

Code	Title	Hours
<b>Graduate Certificate in Data Science</b>		
<b>Required Courses</b>		
COSC 6321	Distributed Computing	3
COSC 6331	Data Visualization	3
COSC 6335	Big Data Analytics	3
COSC 6338	Data Science Capstone	3
<b>Prescribed Electives</b>		
Select one of the two prescribed electives:		
COSC 6332	Computer Vision	
COSC 6333	Deep Learning	
<b>Total Hours</b>		<b>15</b>

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**Graduate Stem Course Requirements**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
<b>Graduate Stem Course Requirements</b>		
COSC 5301	Quantitative Foundations of Computer Science	3
COSC 5302	Computer Science Core Topics	3

The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The Graduate Certificate in Data Science is designed to provide graduates with the following marketable skills:

- Statistical analysis and computing skills.
- Processing large data sets skills.
- Machine learning and deep learning skills.
- Data analysis and visualization skills.