DATA SCIENCE, ASSOCIATE OF SCIENCE (AS)

Overview

The Associate in Science in Data Science degree has two primary goals. First, it prepares students for an efficient transfer to a four-year institution for a bachelor's degree. Second, it teaches new and returning students skills that are immediately valuable in the marketplace. The program is designed to provide a combination of core computing and statistical inference skills using data sets from a variety of disciplines. The core sequence covers data science foundational concepts, core programming practices and mathematical principles used in data science careers. Students can choose to focus on specialized areas including data structures and algorithms, advanced mathematics, database systems, geographical information systems, and research methods.

Requirements

Associate Degree Graduation Requirements

Complete all of the following:

1. All Department Requirements listed below with a "C" or better or "P" in each course (at least 20% of the department requirements must be completed through SBCC).
2. One of the following three General Education options:
    a. OPTION 1: A minimum of 18 units of SBCC General Education Requirements (https://catalog.sbcc.edu/degrees-certificates-awards/#associatedegreestext) (Areas A-D) and Institutional Requirements (Area E) and Information Competency Requirement (Area F) OR
    b. OPTION 2: IGETC (https://catalog.sbcc.edu/transfer-curricula/#igetctext) Pattern OR
    c. OPTION 3: CSU GE Breadth (https://catalog.sbcc.edu/transfer-curricula/#csugebtext) Pattern
3. A total of 60 degree-applicable units (SBCC courses numbered 100 and higher).
4. Maintain a cumulative GPA of 2.0 or better in all units attempted at SBCC.
5. Maintain a cumulative GPA of 2.0 or better in all college units attempted.
6. A minimum of 12 units through SBCC.

Code	Title	Units
Department Requirements		
Core Courses		
CS 106	Theory and Practice II	3
or CS 114	Intermediate Python	
CS/MATH 118	Data Science for All	4
MATH 150	Calculus with Analytic Geometry I	5
MATH 160	Calculus with Analytic Geometry II	5
Complete 3 courses from the following (not used to satisfy the Core Courses above)		6.5-12
CIS 107	Introduction to Database Systems	
CIS 117	Introduction to SQL Programming	
COMM 288	Communication Research Methods	
CS 104	Introduction to Programming	
CS 105	Theory and Practice I	
CS 106	Theory and Practice II	
CS 108	Discrete Structures	
CS 114	Intermediate Python	
CS 133	Introduction to Programming for Engineers	
CS 134	Version Control with Git	
CS 137	C Programming	
CS 140	Object-Oriented Programming Using C ++	
ERTH/GEOG 171	Introduction To Geographic Information Systems And Maps	
MATH 117	Elementary Statistics	
or PSY 150	Statistics for the Behavioral Sciences	
or SOC 125	Introduction to Statistics in Sociology	
MATH 180	Transition to Advanced Mathematics	
MATH 200	Multivariable Calculus	
MATH 210	Linear Algebra	
MATH 220	Differential Equations	
PSY 200	Research Methods and Experimental Design in Psychology	
SOC 115	Introduction To Social Research	
Total Units		**23.50-29.00**

Learning Outcomes

1. Apply foundational data science concepts including computing summary statistics, creating data visualizations, simulating experiments and probability concepts.
2. Use foundational programming concepts to explore and analyze real-world datasets using problem decomposition, and code design strategies.
3. Write software that can organize data into data structures used in major commercial applications.
4. Use techniques of calculus and numerical methods to analyze curves and make error estimations.
5. Understand limitations and issues surrounding data analysis in terms of bias, ethics, establishing causality and privacy.

Recommended Sequence

Make an appointment with your SBCC academic counselor through Starfish to create a Student Education Plan that reflects a recommended course sequence for this program that is tailored to your individual needs.

How to schedule an Academic Counseling appointment (https://www.sbcc.edu/counselingcenter/counselingappointments.php).