Data Science
UNIVERSITY OF COLORADO **BOULDER**

Recommended Learner Journey: Computer Science

Follow this learner journey if you are skilled in computer science.

1. Complete the computer science pathway to earn admission to the degree.

Data Science Foundations: Data Structures & Algorithms
(3 credits)

DTSA 5501: Algorithms for Searching, Sorting & Indexing
DTSA 5502: Trees & Graphs: Basics
DTSA 5503: Dynamic Programming, Greedy Algorithms

2. Complete your vital skills for data scientists courses.

Vital Skills for Data Scientists
(4 credits)

DTSA 5301: Data Science as a Field
DTSA 5302: Cybersecurity for Data Science
DTSA 5303: Ethical Issues in Data Science
DTSA 5304: Visualization Fundamentals

3. Complete core & elective courses in any order.

Data Science Foundations: Statistical Inference
(3 credits)

DTSA 5001: Probability Theory: Applications for Data Science
DTSA 5002: Statistical Inference for Estimation in Data Science
DTSA 5003: Statistical Inference & Hypothesis Testing in Data Science Applications

Data Mining Foundations & Practice
(3 credits)

DTSA 5504: Data Mining Pipeline
DTSA 5505: Data Mining Methods
DTSA 5506: Data Mining Projects

Statistical Modeling for Data Science
(3 credits)

DTSA 5011: Modern Regression Analysis in R
DTSA 5012: ANOVA Experimental Design
DTSA 5013: Generalized Linear Models & Nonparametric Regression

Machine Learning
(3 credits)

DTSA 5509: Introduction to Machine Learning: Supervised Learning
DTSA 5510: Unsupervised Algorithms in Machine Learning
DTSA 5511: Introduction to Deep Learning

Databases
(2 credits)

DTSA 5733: Relational Database Design
DTSA 5734: The Structured Query Language (SQL)

Elective Courses
(9 credits)

See **Curriculum** page for details. More electives coming soon.