MATHEMATICS - DATA SCIENCE OPTION, BS

Introduction
Please click here to see Mathematical and Statistical Sciences department information.

These degree requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery
• This is an on-campus program.

Declaring This Major
• Click here to go to information about declaring a major.

General Requirements
To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

• CU Denver General Graduation Requirements
• CU Denver Core Curriculum
• College of Liberal Arts & Sciences Graduation Requirements
• Complete two MATH elective courses (at least six credit hours) above the 3000 level, excluding MATH 3041, MATH 3195, MATH 3511, MATH 3800, MATH 4015, and MATH 4830.
• Complete all of the following required Mathematics courses:
  - MATH 1401
  - MATH 2411
  - MATH 2421
  - MATH 3000
  - MATH 3041
  - MATH 3195
  - MATH 3251
  - MATH 3376
  - MATH 3382
  - MATH 3511
  - MATH 3800

Program Requirements
1. Students must not use any of the following MATH courses to count toward major requirements:
   - MATH 3041 Fundamental Mathematics: Algebra, Probability and Data Analysis
   - MATH 3195 Linear Algebra and Differential Equations
   - MATH 3511 Mathematics of Chemistry
   - MATH 3800 Probability and Statistics for Engineers
   - MATH 4830 Applied Statistics

Complete the following program requirements:
   - MATH 1376 Programming for Data Science
   - CSCI 1410 Fundamentals of Computing & CSCI 1411 and Fundamentals of Computing Laboratory
   - MATH 1401 Calculus I
   - MATH 2411 Calculus II
   - MATH 2421 Calculus III
   - MATH 3000 Introduction to Abstract Mathematics
   - MATH 3191 Applied Linear Algebra
   - MATH 3376 Data Wrangling & Visualization
   - MATH 3382 Statistical Theory
   - MATH 4310 Introduction to Real Analysis I
   - MATH 4387 Applied Regression Analysis
   - MATH 4779 Math Clinic

Complete the following Machine Learning courses:
   - MATH 4337 Intro to Statistical and Machine Learning
   - MATH 4388 Machine Learning Methods

Complete 9 additional credit hours (typically 3 courses), countable towards a major in one of the following subjects, at any level:
   - Business (p. 1)
   - Biology (p. 2)
   - Chemistry (p. 2)
   - Computer Science (p. 2)
   - Economics (p. 2)
   - Geography and Environmental Science (p. 2)
   - Health and Behavioral Science (p. 2)
   - Physics (p. 2)
   - Sociology (p. 2)

Business
   - Accounting, BS in Business Administration
   - Entrepreneurship, BS in Business Administration

Program Restrictions, Allowances and Recommendations

1. Students must complete a minimum of 15 upper-division level MATH credit hours with CU Denver faculty.
• Computer Science, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/computer-science-bs/)

**Economics**

• Economics, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/economics/economics-ba/)

**Geography and Environmental Science**

• Geography - Environment, Society and Sustainability Option, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/geography-environment-society-sustainability-option-ba/)

• Geography - Environmental Science Option, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/geography-environmental-science-option-ba/)

• Geography - Urban Studies and Planning, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/geography-urban-studies-planning-ba/)

• Geography, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/geography-ba/)

**Health and Behavioral Science**

• Public Health, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/health-behavioral-sciences/public-health-ba/)

• Public Health, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/health-behavioral-sciences/public-health-bs/)

**Physics**

• Physics - Pure and Applied Physics Option, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/physics/physics-pure-applied-physics-option-bs/)

**Sociology**

• Sociology - Gender and Society Concentration, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/sociology/sociology-gender-society-concentration-ba/)

• Sociology, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/sociology/sociology-ba/)

Other areas allowable on a case-by-case basis.
To learn more about the Student Learning Outcomes for this program, please visit our website (https://clas.ucdenver.edu/mathematical-and-statistical-sciences/undergraduate-goals-and-objectives/).

To review the Degree Map for this program, please visit our website (https://www.ucdenver.edu/student/advising/undergraduate/degree-maps/clas/).