

Program: <b>Data Science</b>	Dept: Mathematics & Statistics and Computer Science
Major: <b>Data Science</b>	College: Mathematics and Science
Degree: Bachelor of Science (B.S.)	Major Code: 6190

**University Core (Total Listed 42-44)**

For a full list of courses see [University Core](#).

• Courses from the major may apply to the areas marked in the University Core.

**Written and Oral Communication ..... 9**

**Quantitative Reasoning/Scientific Method ..... 10-11**

- Math..... 3
- Life Science ..... 4
- Physical Science..... 3-4

**Critical Inquiry and Aesthetic Analysis ..... 6**

- Aesthetic Analysis ..... 3
- Critical Inquiry..... 3

**American Historical and Political Analysis ..... 6**

- American National Government ..... 3
- American History ..... 3

**Cultural and Language Analysis ..... 3-4**

- Second Language ..... 4
- OR
- Cultural Analysis..... 3

**• Social and Behavioral Analysis..... 3**

**Life Skills ..... 5**

- Required Health Course..... 2
- Elective Life Skills..... 3

**Minimum  
Required Hours**

**Minimum  
Required Hours**

**Support Courses**

**Support Courses.....0-9**

Students majoring in the Data Science program are encouraged to complete the following courses in high school.

Advanced Placement High School Programming Course **OR**

CMSC 1513 Beginning Programming

\*MATH 1533 Precalculus-Algebra **OR**

MATH 1513 College Algebra **OR** Placement Score **AND**

\*MATH 1593 Plane Trigonometry **OR** Placement Score

\*A grade of ‘C’ or better is required for either MATH 1513 or MATH 1533 and MATH 1593 to take MATH 2313.

Upon completion of the above courses, corresponding university core requirements will be satisfied. (These courses are required for this major regardless of previous degrees conferred.)

**Major Requirements**

**Data Science.....69**

**Required Courses..... 51**

- CMSC 1613 Programming in C++
- CMSC 1621 Laboratory for Programming in C++
- ^ CMSC 2613 Fundamental Data Structures
- ^ CMSC 2621 Laboratory for Fundamental Data Structure
- CMSC 2123 Discrete Structures
- ^ CMSC 3613 Algorithms and Advanced Data Structures
- ^ CMSC 3621 Lab for Algorithms and Advanced Data Structures
- CMSC 4003 Applications of Database Management Systems
- CMSC 4143 Algorithms for Machine Learning
- MATH 2313 Calculus 1
- MATH 2323 Calculus 2
- MATH 2333 Calculus 3
- MATH 3143 Linear Algebra
- STAT 2113 Statistical Methods
- STAT 3213 Fundamentals of Data Science
- STAT 4413 Data Visualization and Exploration
- STAT 4213 Applied Regression Analysis

**Upper Division Electives..... 18**

Computer Science or Software Engineering..... 6  
Any combination of 3000-4000 level CMSC or SE courses except CMSC 4513 or SE 4513

Statistics ..... 6

Any combination of 3000-4000 level STAT courses

Computer Science, Software Engineering, Mathematics, or Statistics ..... 6

Any combination of 3000-4000 level courses from either CMSC, SE, MATH, or STAT except CMSC 4513 or SE 4513

**Electives to bring total to..... 124**

**Minimum Grade Requirements**

1. Average in (a) all college course work, and (b) course work at UCO ..... 2.50
2. A minimum grade of “C” must be earned in all courses in the major to count toward meeting degree requirements.

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- CONTINUED FROM PREVIOUS PAGE -

**Accelerated BS/PSM**

UCO's PSM (Professional Science Master's) in Computational Science has partnered with the B.S. in Data Science so that approved students may take up to nine credit hours of 5000-level CMSC, MATH, or STAT courses during their senior year of the B.S. program. These courses will count toward both the B.S. and P.S.M. degrees. A formal application to the P.S.M. Computational Science program and an approval from the Department of Mathematics and Statistics (for students pursuing the P.S.M. Computational Science - Computational Mathematics) or the Department of Computer Science (for students pursuing the Computational Science - Computer Science) are required. Requirements are located in the UCO Graduate Catalog under Computational Science - Computer Science, P.S.M. and Computational Science - Computational Mathematics, P.S.M.

Up to nine credit hours of the following courses can be used to satisfy both the B.S. Data Science and the P.S.M. Computational Science - Computational Mathematics:

CMSC	5043	Applications Database Systems
CMSC	5143	Algorithms for Machine Learning
STAT	5213	Applied Regression Analysis
STAT	5533	Data Mining and Statistical Learning
STAT	5413	Data Visualization and Exploration

Up to nine credit hours of the following courses can be used to satisfy both the B.S. Data Science and the P.S.M. Computational Science - Computer Science:

CMSC	5043	Applications Database Systems
CMSC	5143	Algorithms for Machine Learning
STAT	5213	Applied Regression Analysis
STAT	5533	Data Mining and Statistical Learning