# Data Science B.S. with Geospatial Data Analytics Concentration

## Data Science B.S. with Geospatial Data Analytics Concentration Eight-Semester Program

| First Year | Fall | Spring |
|---|---|---|
| MATH 24004 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)[1] | 4 | |
| ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 | |
| DASC 10003 Introduction to Data Science | 3 | |
| DASC 11004 Programming Languages for Data Science | 4 | |
| MATH 25004 Calculus II | | 4 |
| ECON 21403 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) | | 3 |
| ENGL 10303 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) | | 3 |
| DASC 12004 Introduction to Object Oriented Programming for Data Science | | 4 |
| DASC 12203 Role of Data Science in Today's World | | 3 |
| Year Total: | 14 | 17 |

| Second Year | Fall | Spring |
|---|---|---|
| DASC 25904 Multivariable Math for Data Scientists | 4 | |
| STAT 30133 Introduction to Probability[4] or INEG 23203 Probability and Stochastic Processes for Industrial Engineers | 3 | |
| DASC 22103 Data Visualization and Communication | 3 | |
| DASC 21103 Principles and Techniques of Data Science | 3 | |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2)[2] | 3 | |
| SEVI 20503 Business Foundations (Data Science Majors-only section) | | 3 |
| STAT 30043 Statistical Methods[4] or INEG 23104 Statistics for Industrial Engineers I | | 3-4 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)[2] | | 4 |
| DASC 22003 Data Management and Data Base | | 3 |
| GEOS 35403 Geospatial Applications and Information Science | | 3 |
| Year Total: | 16 | 16 |

| Third Year | Fall | Spring |
|---|---|---|
| DASC 21303 Data Privacy & Ethics (Satisfies General Education Outcome 5.1) | 3 | |
| DASC 31003 Big Data Analytics with Cloud Computing | 3 | |
| GEOS 35503 Spatial Analysis Using ArcGIS | 3 | |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3)2[2] | 3 | |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)[2] | 4 | |
| DASC 32003 Optimization Methods in Data Science | | 3 |
| DASC 32103 Statistical Learning | | 3 |
| GEOS 35903 Introduction to Geodatabases | | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1)[2] | | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1)[2] | | 3 |
| Year Total: | 16 | 15 |

| Fourth Year | Fall | Spring |
|---|---|---|
| DASC 48902 Data Science Practicum I | 2 | |
| DASC 41103 Machine Learning | 3 | |
| DASC 41203 Social Problems in Data Science and Analytics | 3 | |
| GEOS 35603 Geospatial Data Mining | 3 | |
| GEOS 42603 Geospatial Data Science - Sources and Characteristics | 3 | |
| DASC 49903 Data Science Practicum II (Satisfies General Education Outcome 6.1) | | 3 |
| GEOS 46503 GIS Analysis and Modeling | | 3 |
| Geospatial Data Analytics Concentration Elective | | 3 |
| General Elective[3] | | 2-3 |
| Year Total: | 14 | 12 |

| | |
|---|---|
| **Total Units in Sequence:** | **120** |

[1] Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 24004.

[2] Students must complete the State Minimum Core requirements (http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (http://catalog.uark.edu/undergraduatecatalog/gened/generaleducation/), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

[3] Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.

[4] Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 30133/STAT 30043 to meet the prerequisites required in the concentration.