Data Science B.S. with Bioinformatics Concentration

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Eight-Semester Program

First Year	Fall	Spring
MATH 24004 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)[1]	4	
DASC 10003 Introduction to Data Science	3	
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
DASC 11004 Programming Languages for Data Science	4	
MATH 25004 Calculus II		4
Satisfies General Education Outcome 3.4:		
BIOL 10103 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 10101 Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)		4
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	18

Second Year	Fall	Spring
DASC 25904 Multivariable Math for Data Scientists	4	
Satisfies General Education Outcome 3.4:		
CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & CHEM 14101 University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)	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	
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
DASC 22003 Data Management and Data Base		3
BIOL 23373 General Genetics		3
Year Total:	17	12

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	
ECON 21403 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)	3	
BIOL 25473 Cell Biology	3	
State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2)[2]	3	
DASC 32003 Optimization Methods in Data Science		3
DASC 32103 Statistical Learning		3
State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1)		3
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3)[2]		3
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1)[2]		3
Year Total:	15	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	
BIOL 30473 Evolutionary Biology or BIOL 38773 General Ecology	3	
Bioinformatics Elective	3	
DASC 49903 Data Science Practicum II (Satisfies General Education Outcome 6.1)		3
Bioinformatics Elective		3
Bioinformatics Elective		3
Bioinformatics Elective		3
General Education Elective[3]		2-3
Year Total:	14	15

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.