DATA ANALYTICS MINOR ELECTIVES

Approved Electives

For the most current lists of approved courses in these categories, please consult the Data Scholarship Program.

Introductory Statistics

Code	Title	Credit Hours
ANTH 4713	Statistical Concepts in Anthropology	3
BIOL 2913	Intro to Quantitative Biology	3
BIOL 4913	Quantitative Biology	3
COMM 2513	Introduction to Statistics	3
ECON 2843	Elements of Statistics	3
GEOG 3923	Quantitative Methods	3
MATH 4743	Introduction to Mathematical Statistics	3
METR 4313	Statistical Meteorology	3
PHCH 3313	Health Data and Statistics	3
P SC 2013	Introduction to Political Analysis	3
PSY 2003	Understanding Statistics	3
SOC/P SC 3123	Social Statistics	3
S WK 2223	Statistics for Social Work	3

Programming for Data Analytics

Code	Title	Credit Hours
ASTR 3190	Topics in Astronomy (topic: Introduction to Research)	3
BIOL 4783	Introduction to Python Programming for Data Analytics	3
C S 1213	Programming for Non-Majors with Python	3
C S 1313	Programming for Non-Majors with C	3
C S 1321	Java for Programmers	1
C S 1323	Introduction to Computer Programming for Programmers	3
C S 1324	Introduction to Computer Programming for Non-Programmers	4
GIS 4453	Advanced GIS and Spatial Analysis	3
HSTM/LIS 2033	Introduction to Digital Humanities	3
LIS 4613	Dynamic Web Development	3
LIS 4643	Introduction to Data Analytics	3
LIS 4970	Special Topics/Seminar (topic: Introduction to Mobile App Development)	1-3
LIS 4633	Web Design and Implementation	3
PSY 2503	Computing for Behavioral Sciences	3
PHYS 2222	Computational Physics	2

Data-Oriented Electives

Code	Title	Credit Hours
Qualitative Data-related Skills		
BIOL 3673	Practical Bioinformatics	3
ENGL 3163	Rhetoric and the Digital Humanities	3
GEOG 3513	Political Geography *	3
LIS 3063	Essentials of IT & Informatics	3
LIS 4453	Digital Collections	3
LIS 4613	Dynamic Web Development	3
LIS 4673	Introduction to Information Visualization	3
LIS 4683	Database Design for Information Organizations	3
LIS 4693	Information Retrieval and Text Mining	3
LIS 4970	Special Topics/Seminar (topic: Data Stewardship)	3
LIS/WGS/LTRS/ HIST/HSTM 4970	Special Topics/Seminar (topic: Cultural Heritage Data and Social Engagement)	3
LIS 4970	Special Topics/Seminar (topic: Introduction to Mobile App Development)	1-3
NAS 4153	Indigenous Mapping: Issues in Data Sovereignty and Security	3
Applied Computing		
ASTR 3190	Topics in Astronomy (topic: Introduction to Research)	3
BIOL 4783	Introduction to Python Programming for Data Analytics	3
C S 4033	Machine Learning Fundamentals	3
GIS 4233	Digital Image Processing	3
GIS 4453	Advanced GIS and Spatial Analysis	3
ENGL 3163	Rhetoric and the Digital Humanities	3
LIS 4623	Advanced Data Analytics	3
LIS 4643	Introduction to Data Analytics	3
LIS/WGS/LTRS/ HIST/HSTM 4970	Special Topics/Seminar (topic: Cultural Heritage Data and Social Engagement)	3
METR 1313	Introduction to Programming for Meteorology *	3
PHYS 2222	Computational Physics	2
PSY 2503	Computing for Behavioral Sciences	3
Mathematics and Computing Skills		
C S 1213	Programming for Non-Majors with Python	3
C S 1313	Programming for Non-Majors with C	3
C S 1321	Java for Programmers	1
C S 1323	Introduction to Computer Programming for Programmers	3
C S 1324	Introduction to Computer Programming for Non-Programmers	4
MATH 3333	Linear Algebra I	3
MATH 4373	Abstract Linear Algebra	3
MATH 4803	Topics in Mathematics	3
Intermediate Statistics & Experimental Design		
BIOL 4913	Quantitative Biology	3
ECON 4223	Econometric Analysis	3
ECON 4773	Economic Game Theory	3
GIS 4923	Spatial Statistics	3
MATH 4743	Introduction to Mathematical Statistics	3
MATH 4753	Applied Statistical Methods	3
MATH 4773	Applied Regression Analysis	3

PSY 3114	Research Methods: Applications and Experimental Design	4
SOC 3133	Methods of Social Research	3
S WK 4083	Undergraduate Social Work Research Methods I *	3
S WK 4093	Undergraduate Social Work Research Methods II	3

* Designates introduction/gateway courses that would be good to take prior to others in the minor.

Project/Applied Data Analytics Experience

Most of the advanced electives require instructor permission and many disciplinary-specific prerequisites that should be met or specifically discussed with the instructor prior to enrollment. Upon or before enrollment, students will need to identify a faculty member affiliated with the Data Scholarship Program who can supervise their internship, independent study, or research experience.

To fulfill this requirement, the course must include a data-related project with a written report. Students will submit a DSP Project Experience Course Approval Form for approval before the end of the free add/drop period. Alternatively, an additional course can be taken from among listed courses in the previous categories AND that includes a substantial project that includes data analysis, visualization, and interpretation and a discussion of any ethical considerations with respect to the topic and data. In this case, students will submit a DSP Project Experience Course Approval Form to describe the project in the course.

Code	Title	Credit Hours
CAS 4630	CAS Internship	3
DSP 4983	Data Analytics and Applied Statistics Research Experience	3
CAS 4990	Independent Study (with a DSP faculty affiliate or with an approved, applied data analytics component)	3
An additional course can be taken from among listed courses in the previous categories AND that includes a substantial project that includes data analysis, visualization, and interpretation and a discussion of any ethical considerations with respect to the topic and data. In this case, the project report must be submitted to the Data Scholarship Program for final approval.		