DATA ANALYTICS AND SOCIETY

Contact Information

Eleanor Townsley, Nexus director
Valerie Barr, track chair

Overview and Contact Information

Data analytics and society offers an explicit focus on social and historical context, emphasizing critical literacies for data analysis and ethical decision-making. This Nexus focuses on acquiring concrete skills and data and visual literacies in hands-on research application. Students will link courses in data analysis across disciplines to engage with fundamental data literacies for citizenship, in particular visual, communicative and interpretive capabilities in social context. The Nexus in Data Analytics and Society can enhance a range of different majors by adding a concentration in social research and will help students represent their applied analytical skills in problem solving and data analysis.

See Also

- Data Science (http://catalog.mtholyoke.edu/areas-study/data-sci/)
- Sociology (http://catalog.mtholyoke.edu/areas-study/sociology/)

Faculty

This area of study is administered by the following Nexus track chairs:

Valerie Barr, Jean E. Sammet Professor of Computer Science, Teaching Spring Only

Eleanor Townsley, Andrew W. Mellon Professor of Sociology; Director of Nexus, Teaching Fall Only

Dylan Shepardson, Robert L. Rooke Associate Professor of Mathematics

Requirements for the Nexus

A minimum of 18 credits:

Code	Title	Credits
Four 4-credit courses, of which:		**16**
one must be in statistics at the 200 level or higher, from the list of courses approved for this Nexus		
one must be in computer science at the 200 level or higher, from the list of courses approved for this Nexus		
one must be in an application area (e.g., biology, economics, English, psychology, sociology) at the 200 level or higher, from the list of courses approved for this Nexus		
one is an elective course that demonstrates an interest in data science and that may be taken at the 100 level and must be taken before the internship		
Note: at least one of these four courses must be an approved 300-level capstone course that goes into depth in statistics, computer science, or a data science application area. Appropriate courses include: COMSC-335, ECON-320, SOCI-316NT, STAT-340 or STAT-344		
Completion of the UAF application stages 1 and 2		
A substantive internship		
COLL-211	Reflecting Back: Connecting Internship and Research to Your Liberal Arts Education	2
A presentation at LEAP Symposium		

Additional Specifications

- In one of the four courses for this Nexus, students must work intimately with data to explore, visualize, contextualize, and present conclusions.
- COLL-211 is taken after the internship or research project and culminates in a presentation at LEAP Symposium.

Courses Counting toward the Nexus

Courses other than those listed below may count toward the Nexus. Students should consult the Nexus track chair for consideration of courses not on the list.

Code	Title	Credits
Astronomy		
ASTR-226	Cosmology	4
ASTR-228	Astrophysics I: Stars and Galaxies	4
Biological Sciences		
BIOL-223	Ecology	4
BIOL-234	Biostatistics	4
Computer Science		
COMSC-100	Computing and the Digital World	4
COMSC-106	Fundamentals of Applied Computing	4
COMSC-151DS	Introduction to Computational Problem Solving: 'Big Data'	4
COMSC-201	Advanced Problem-Solving and Elementary Data Structures	4
COMSC-205	Data Structures	4
COMSC-211	Advanced Data Structures	4
COMSC-243EM	Topic: 'Embodied Interaction'	4
COMSC-311	Theory of Computation	4
COMSC-312	Algorithms	4
COMSC-334	Artificial Intelligence	4
COMSC-335	Machine Learning	4
COMSC-341NL	Topics: 'Natural Language Processing'	4
COMSC-343	Programming Language Design and Implementation	4
Economics		
ECON-220	Introduction to Econometrics	4
ECON-320	Econometrics	4
Environmental Studies		
ENVST-200	Environmental Science	4
Geography		
GEOG-205	Mapping and Spatial Analysis	4
GEOG-210	GIS for the Social Sciences and Humanities	4
GEOG-320	Research with Geospatial Technologies	4
Geology		
GEOL-131	Introduction to Hydrology: A Data Perspective	4
International Relations		
IR-200	Research Methods	4
Mathematics		

MATH-211	Linear Algebra	4
MATH-301	Real Analysis	4
MATH-339PT	Topics in Applied Mathematics: 'Optimization'	4
MATH-342	Probability	4
Philosophy		
PHIL-180DE	Topics in Applied Philosophy: 'Data Ethics'	4
Psychology		
PSYCH-201	Statistics	4
PSYCH-204	Research Methods in Psychology	4
PSYCH-310AP	Laboratory in Social Psychology: 'Community-Based Participatory Action Research'	4
PSYCH-310QR	Laboratory in Social Psychology: 'Qualitative Research in Psychology'	4
PSYCH-326BH	Laboratory in Personality and Abnormal Psychology: 'Behavioral Methods for Social and Intergroup Psychology'	4
PSYCH-330RD	Lab in Developmental Psychology: 'Laboratory in Romantic Development: Observational Coding Methodology'	4
Sociology		
SOCI-225	Social Science Research and Data Analysis	4
Statistics		
STAT-240	Elementary Data Analysis and Experimental Design	4
STAT-241	Methods in Data Science	4
STAT-242	Intermediate Statistics	4
STAT-340	Applied Regression Methods	4
STAT-343	Mathematical Statistics	4
STAT-344SM	Seminar in Statistics and Scientific Research: 'Survey Sampling'	4