Social Data Science Major (BSOS)

Program Directors: Brian Kim, PhD and Katie Shilton, PhD

Creating information products that capture aspects of human behavior requires an increasingly complex set of skills and knowledge. This program combines the expertise of faculty members from the College of Information Studies (iSchool) and the College of Behavioral and Social Sciences (BSOS) to prepare students to effectively, ethically and efficiently create high quality information products, such as datasets, visualizations, and models, about human activity and behavior. This critical suite of knowledge and skills is essential in many domains, including government, healthcare, sustainability, economics, entertainment, human rights, equity, and others. Students take a set of core courses housed primarily in the iSchool and BSOS's Joint Program in Survey Methodology (JPSM). They then select a track discipline, in which they train in relevant theory and methods, from among the following options: African-American Studies, Anthropology, Economics, Government and Politics/International Relations, Geography/Geospatial Information Science, Psychology, or Sociology.

Restriction: Students may not enroll in a double-major or double-degree with the Social Data Science major and the BSOS major of their track because of the significant overlap in coursework.

Program Learning Outcomes

1. Design, execute, document, and disseminate research that applies tools and methods from data science to address a social science research question
2. Develop expertise in specific contemporary social science theories and data science approaches to tackling research questions related to these theories
3. Apply findings from social data science research to analyze the policy and design of socio-technical systems
4. Identify and analyze social, legal, and ethical and equity issues in social data science work and in the profession

Requirements

Major course requirements consist of core courses and track area courses in one of the following tracks: African American Studies, Anthropology, Economics, Geographical Sciences, Government & Politics, Psychology, and Sociology. Students will not be permitted to add a double-major or a double-degree with Social Data Science and the BSOS major associated with their track area. Both core courses and track courses include benchmark courses. Failure of a student to complete both sets of benchmark courses within the timeline indicated may result in probation and/or dismissal from the major. Benchmark I courses must be completed with a C- or higher within the first two semesters of the program. Benchmark II courses must be completed within the first three semesters of the program.

Social Data Sciences Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INST126</td>
<td>Introduction to Programming for Information Science</td>
<td>3</td>
</tr>
<tr>
<td>or GEOG276</td>
<td>Principles of Python Programming and Geocomputing</td>
<td></td>
</tr>
</tbody>
</table>

African American Studies Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASP101</td>
<td>Public Policy and the Black Community</td>
<td>3</td>
</tr>
<tr>
<td>AASP210</td>
<td>Intro to Research Design and Analysis in African American Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

Track I Requirement:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AASP395</td>
<td>Fundamentals of Quantitative Research in Socio-Cultural Perspective</td>
<td>3</td>
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</table>

Track II Requirement:

Nine credits from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASP301</td>
<td>Applied Policy Analysis and the Black Community</td>
<td>3</td>
</tr>
<tr>
<td>AASP310</td>
<td>African Slave Trade</td>
<td>3</td>
</tr>
<tr>
<td>AASP313</td>
<td>Black Women in United States History</td>
<td>3</td>
</tr>
<tr>
<td>AASP314</td>
<td>The Civil Rights Movement</td>
<td>3</td>
</tr>
<tr>
<td>AASP400</td>
<td>Directed Readings in African American Studies</td>
<td>3</td>
</tr>
<tr>
<td>AASP402</td>
<td>Classic Readings in African American Studies</td>
<td>3</td>
</tr>
<tr>
<td>AASP411</td>
<td>Black Resistance Movements</td>
<td>3</td>
</tr>
<tr>
<td>AASP441</td>
<td>Science, Technology, and the Black Community</td>
<td>3</td>
</tr>
<tr>
<td>AASP443</td>
<td>Blacks and the Law</td>
<td>3</td>
</tr>
<tr>
<td>AASP499</td>
<td>Advanced Topics in Public Policy and the Black Community</td>
<td>3</td>
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</tbody>
</table>

Total Credits: 51-59
## Anthropology Track

Students in the Anthropology track choose one of three tracks: Health, Heritage, or Environment.

### Course Title Credits

**Anthropology-Health Track**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH210</td>
<td>Introduction to Medical Anthropology and Global Health</td>
<td>3</td>
</tr>
<tr>
<td>INST314</td>
<td>Statistics for Information Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Anthropology-Health Track I Requirement:**

- ANTH310 Method & Theory in Medical Anthropology and Global Health 3 credits

**Anthropology-Health Track II Requirement:**

- Nine credits from the following list:
  - ANTH411 Global Migration and Health
  - ANTH412 Hypermarginality and Urban Health
  - ANTH413 Health Disparities in the United States
  - ANTH415 Advanced Studies in Global Health
  - ANTH416 Anthropology of Global Violence

### Anthropology-Heritage Track

**Benchmark II Anthropology-Heritage Track Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH240</td>
<td>Introduction to Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>INST314</td>
<td>Statistics for Information Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Anthropology-Heritage Track I Requirement:**

- ANTH340 Method and Theory in Archaeology 3 credits

**Anthropology-Heritage Track II Requirement:**

- Nine credits from the following list:
  - ANTH341 Introduction to Zooarchaeology
  - ANTH440 Theory and Practice of Historical Archaeology
  - ANTH441 Archaeology of Diaspora
  - ANTH447 Material Culture Studies in Archaeology
  - ANTH448 Special Topics in Archaeology
  - ANTH451 Environmental Archaeology
  - ANTH464 Anthropology of Cultural Heritage
  - ANTH496 Field Methods in Archaeology

### Anthropology-Environment Track

**Benchmark II Anthropology-Environment Track Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH222</td>
<td>Introduction to Ecological and Evolutionary Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>INST314</td>
<td>Statistics for Information Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Anthropology-Environment Track I Requirement:**

- ANTH322 Method and Theory in Ecological Anthropology 3 credits

**Anthropology-Environment Track II Requirement:**

- Nine credits from the following list:
  - ANTH450 Theory and Practice of Environmental Anthropology
  - ANTH454 Political Ecology
  - ANTH456 Conservation and Indigenous People in South America
  - ANTH462 Amazon Through Film
  - ANTH467 Researching Environment and Culture

## Economics Track

### Course Title Credits

**Benchmark II Track Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON200</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON201</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON230</td>
<td>Applied Economic Statistics</td>
<td>3</td>
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</tbody>
</table>

**Track I Requirement:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON305</td>
<td>Intermediate Macroeconomic Theory and Policy</td>
<td>3</td>
</tr>
<tr>
<td>or ECON306</td>
<td>Intermediate Microeconomic Theory &amp; Policy</td>
<td></td>
</tr>
</tbody>
</table>

**Track II Requirement:**

- Six credits from the following list:
  - ECON305 Intermediate Macroeconomic Theory and Policy
  - ECON306 Intermediate Microeconomic Theory & Policy
  - ECON311 American Economic History Before the Civil War
  - ECON312 American Economic History After the Civil War
  - ECON315 Economic Development of Underdeveloped Areas
  - ECON317 Global Economic Policies
  - ECON330 Money and Banking
  - ECON340 International Economics

**Total Credits:** 18

1 The course taken for the Track I requirement may not also be used for the Track II requirement. No double-count for these two categories.

## Geographical Sciences Track

### Course Title Credits

**Benchmark II Track Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEOG202</td>
<td>Introduction to Human Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG306</td>
<td>Introduction to Quantitative Methods for the Geographical Environmental Sciences</td>
<td>3</td>
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</tbody>
</table>

**Track I Requirement:**

- GEOG373 Geographic Information Systems 3 credits

**Track II Requirement:**

- 9 credits from the following list (six must be at the 400-level):
  - GEOG330 As the World Turns: Society and Sustainability in a Time of Great Change
  - GEOG331 Introduction to Human Dimensions of Global Change
  - GEOG332 Economic Geography
  - GEOG333 The Social Geography of Metropolitan Areas in Global Perspective
  - GEOG335 Population Geography
  - GEOG415 Land Use, Climate Change, and Sustainability
  - GEOG416 Conceptualizing and Modeling Human-Environmental Interactions
  - GEOG421 Changing Geographies of China
  - GEOG422 Changing Geographies of Sub-Saharan Africa
  - GEOG432 Spatial Econometrics
  - GEOG470 Algorithms for Geospatial Computing
  - GEOG473 Geographic Information Systems and Spatial Analysis
  - GEOG475 Computer Cartography

**Total Credits:** 9
### Social Data Science Major (BSOS)

**GEOG477**  
Mobile GIS Development  
Total Credits 18

### Government and Politics Track

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>GVPT170</td>
<td>American Government</td>
<td>3</td>
</tr>
<tr>
<td>GVPT200</td>
<td>International Political Relations</td>
<td>3</td>
</tr>
<tr>
<td>GVPT201</td>
<td>Scope and Methods for Political Science Research</td>
<td>3</td>
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</table>

**Track I Requirement:**
- GVPT320  
  Advanced Empirical Research  
  Credits 3

**Track II Requirement:**
- Any six credits of GVPT coursework at the 300- or 400-levels  
  Credits 6

Total Credits 18

### Psychology Track

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>PSYC100</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC200</td>
<td>Statistical Methods in Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Track I Requirement:**
- PSYC300  
  Research Methods in Psychology Laboratory  
  Credits 4

**Track II Requirement:**
- Nine credits from the following list:  
  Credits 9
  - PSYC330  
    Child Psychopathology
  - PSYC332  
    Psychology of Human Sexuality
  - PSYC334  
    Psychology of Interpersonal Relationships
  - PSYC336  
    Psychology of Women
  - PSYC341  
    Introduction to Memory and Cognition
  - PSYC344  
    Health Psychology
  - PSYC353  
    Adult Psychopathology
  - PSYC354  
    Multicultural Psychology in the U.S.
  - PSYC355  
    Developmental Psychology
  - PSYC356  
    Psychology of Adolescence
  - PSYC361  
    Survey of Industrial and Organizational Psychology
  - PSYC362  
    Introduction to Negotiation
  - PSYC416  
    Development of Attachment in Infancy and Childhood: Theory, Research, Methods, and Clinical Implications
  - PSYC417  
    Data Science for Psychology and Neuroscience Majors
  - PSYC420  
    Experimental Psychology: Social Psychology Laboratory
  - PSYC424  
    Communication and Persuasion
  - PSYC425  
    Psychology and Law
  - PSYC432  
    Counseling Psychology: Theories, Research, and Practice
  - PSYC435  
    Temperament, Personality, and Psychopathology
  - PSYC436  
    Introduction to Clinical Psychology: From Science to Practice
  - PSYC437  
    The Assessment and Treatment of Addictive Behaviors

Total Credits 18

### Sociology Track

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SOCY100</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCY201</td>
<td>Introductory Statistics for Sociology</td>
<td>4</td>
</tr>
</tbody>
</table>

**Track I Requirement:**
- SOCY202  
  Introduction to Research Methods in Sociology  
  Credits 4

**Track II Requirement:**
- Nine credits from the following list:  
  Credits 9
  - SOCY325  
    The Sociology of Gender
  - SOCY335  
    Sociology of Health and Illness
  - SOCY401  
    Intermediate Statistics for Sociologists
  - SOCY405  
    Scarcity and Modern Society
  - SOCY406  
    Explaining Social Change: Historical and Comparative Methods
  - SOCY410  
    Social Demography
  - SOCY411  
    Demographic Techniques
  - SOCY412  
    Family Demography
  - SOCY413  
    Sociology of Aging
  - SOCY415  
    Environmental Sociology
  - SOCY420  
    Qualitative Research Methods in Sociology
  - SOCY430  
    Principles of Organizations
  - SOCY432  
    Social Movements
  - SOCY441  
    Social Stratification and Inequality
  - SOCY442  
    The Black Middle Class
  - SOCY444  
    Sex and Love in Modern Society
  - SOCY457  
    Sociology of Law
  - SOCY464  
    Military Sociology
  - SOCY465  
    The Sociology of War
  - SOCY467  
    Sociology of Education
  - SOCY480  
    Researching the Middle East
  - SOCY490  
    Experimental Research Practicum
  - SOCY491  
    Experimental Research Design

Total Credits 20