Quantitative Social Analysis

MINOR PROGRAM IN QUANTITATIVE SOCIAL ANALYSIS

The minor in Quantitative Social Analysis explores social statistics and mathematics to describe, understand, and predict the behavior and experiences of individuals, groups, and organizations of groups. These statistical and mathematical methods focus on measurement, analysis, or both, using techniques and strategies that are widely useful, for example, in understanding thoughts and behaviors of individuals, as well as the cultures of societies, fluctuations of markets, actions of governments, spread of disease, dynamics of migration, causes of war, and the diffusion of knowledge. The minor in Quantitative Social Analysis develops strong statistical foundations for the purpose of learning how to draw valid inferences from quantifiable data and critically evaluate empirical evidence in the social and behavioral sciences.

A minor in Quantitative Social Analysis provides an excellent foundation for application to graduate study at all levels and in many disciplines, ranging from economics, psychology, political science, public policy, and sociology, as well as non–social science disciplines such as medical school, public health, education, social services, applied mathematics, and applied computer science. The minor in Quantitative Social Analysis aims to train students in ways that are more immediately attractive to employers in industry, government, the military, environmental studies, journalism, and public interest and advocacy groups, as well as to University of Chicago faculty seeking research assistance.

PROGRAM REQUIREMENTS

Course Work

Students take five (5) courses that cover three levels: Basic Skills (one course), Advanced Skills (two courses), and Quantitative Applications (two courses). Or, if the student has already completed a Basic Skills course for the major, then three Advanced Skills courses and two Quantitative Applications courses.

- Students who are taking Basic Skills courses should primarily focus on developing theoretical understanding of statistics and building up quantitative skills (rather than simply utilizing quantitative skills as part of the course).
- Students who are taking Advanced Skills courses will further develop their statistical skills with broad usefulness in social scientific research.
- Students who are prepared with more advanced statistical training are then able to more deeply understand the Quantitative Applications in courses throughout the social sciences and engage in research appropriate to those courses in solo activity or as part of research teams.

In order to ensure that the minor in Quantitative Social Analysis represents the diversity of training across the social sciences, no more than three courses may be taken in any one department, and the Quantitative Applications courses must be drawn from at least two departments. In all cases, students should be aware that some approved courses have explicit prerequisites which may not count toward the Quantitative Social Analysis minor.

SUMMARY OF REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
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<tbody>
<tr>
<td>One Basic Skills course</td>
<td>100</td>
</tr>
<tr>
<td>Two Advanced Skills courses</td>
<td>200</td>
</tr>
<tr>
<td>Two Quantitative Applications</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td><strong>500</strong></td>
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APPROVED COURSES

The following courses have been approved by the Committee on Quantitative Methods in Social, Behavioral, and Health Sciences as appropriate for the minor in Quantitative Social Analysis and are listed by the three levels stipulated above (Basic Skills, Advanced Skills, and Quantitative Applications).

Basic Skills

**One course; may not be satisfied with AP credit.**

Students who have already taken SOSC 13100-13200-13300 Social Science Inquiry I-II-III or previously completed any of the Basic Skills courses as part of their majors may substitute an additional Advanced Skills course in place of the Basic Skills course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>CHDV 20101</td>
<td>Applied Statistics in Human Development Research</td>
<td>100</td>
</tr>
<tr>
<td>ECON 21010</td>
<td>Statistical Methods in Economics</td>
<td>100</td>
</tr>
<tr>
<td>GEOG 28702</td>
<td>Introduction to GIS and Spatial Analysis</td>
<td>100</td>
</tr>
<tr>
<td>MACS 30500</td>
<td>Computing for the Social Sciences</td>
<td>100</td>
</tr>
<tr>
<td>PBHS 32100</td>
<td>Introduction to Biostatistics</td>
<td>100</td>
</tr>
</tbody>
</table>
PBPL 26400  Quantitative Methods in Public Policy  100
PSYC 20100  Psychological Statistics  100
PSYC 20200  Psychological Research Methods  100
SOCI 20004  Statistical Methods of Research  100
SOCI 20157  Mathematical Models  100
SOCI 30004  Statistical Methods of Research  100
SOSC 20111  Inferential Statistics  100
SOSC 26006  Foundations for Statistical Theory  100
SOSC 26009  Introductory Statistical Methods  100
STAT 22000  Statistical Methods and Applications  100
STAT 23400  Statistical Models and Methods  100

Advanced Skills

Two courses; or three courses if a Basic Skills course has already been completed for the student’s major.

CHDV 30102  Introduction to Causal Inference  100
CHDV 32411  Mediation, Moderation, and Spillover Effects  100
ECON 21020  Econometrics  100
ECON 21030  Econometrics - Honors  100
ECON 21300  Data Construction and Interpretation in Economic Applications  100
ECON 21410  Computational Methods in Economics  100
ECON 21800  Experimental Economics  100
PBHS 30910  Epidemiology and Population Health  100
PBHS 32400  Applied Regression Analysis  100
PBHS 32600  Analysis of Categorical Data  100
PBHS 32700  Biostatistical Methods  100
PBHS 32901  Introduction to Clinical Trials  100
PBHS 33300  Applied Longitudinal Data Analysis  100
PBPL 28550  Social Experiments: Design and Generalization  100
PBPL 28820  Machine Learning and Policy  100
PLSC 30700  Introduction to Linear Models  100
SOCI 20112  Applications of Hierarchical Linear Models  100
SOCI 20253  Introduction to Spatial Data Science  100
SOCI 30005  Statistical Methods of Research-II  100
SOSC 26007  Overview of Quantitative Methods in the Social and Behavioral Sciences  100
SOSC 36008  Principles and Methods of Measurement  100
STAT 22600  Analysis of Categorical Data  100
STAT 24400  Statistical Theory and Methods I  100
STAT 24500  Statistical Theory and Methods II  100
PBHS 33500  Statistical Applications  100

Quantitative Applications

Two courses

ECON 23410  Economic Growth  100
ECON 24000  Labor Economics  100
ECON 24450  Inequality and the Social Safety Net: Theory, Empirics, and Policies  100
ECON 24720  Inequality: Origins, Dimensions, and Policy  100
ECON 25000  Introduction To Finance  100
ECON 25100  Financial Economics; Speculative Markets  100
ECON 26010  Public Finance  100
ECON 26730  Global Energy & Climate Challenge: Economics, Science & Policy  100
ECON 26800  Energy and Energy Policy  100
ECON 27000  International Economics  100
ECON 27700  Health Economics and Public Policy  100
ECON 27720  Economics and Regulation of Health Care Markets: Theory and Empirics  100
ADVISING AND GRADING

Courses in the minor may not be double counted with the student's major(s), other minors, or general education requirements. Courses in the minor must be taken for quality grades, and more than half of the requirements for the minor must be met by registering for courses bearing University of Chicago course numbers.

College students majoring in any field may complete the minor in Quantitative Social Analysis. Students who elect the minor program in Quantitative Social Analysis must contact the program administrator before the end of Spring Quarter of their third year to declare their intention to complete the minor. The program administrator must submit approval on the Consent to Complete a Minor Program (https://humanities-web.s3.us-east-2.amazonaws.com/college-prod/s3fs-public/documents/Consent_Minor_Program.pdf) form provided by the College for the minor to the student's College adviser by the Spring Quarter of the student's third year.