

**LEHMAN COLLEGE  
OF THE  
CITY UNIVERSITY OF NEW YORK**

**DEPARTMENT OF SOCIOLOGY**

**CURRICULUM CHANGE**

1. **Type of change:** New Courses with Cross-listing

2.

Department(s)	Sociology
Career	<input checked="" type="checkbox"/> Undergraduate [ ] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	Data Science/Sociology
Course Prefix & Number	DAT 311/ SOC 356
Course Title	Reproducible Research
Description	Explores the theory and practice of reproducibility in science research, with a focus on the social and behavioral sciences.
Pre/ Co Requisites	One of: SOC 345, PSY 226, GEH 245, ECO 302, BBA 303, BIO 240, HSD 269, MAT 301, MAT 327, MAT 330.  NOTE: Any student who does not have one of the prerequisites may request permission to enroll from the department.
Credits	4
Hours	4
Liberal Arts	<input checked="" type="checkbox"/> Yes [ ] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science  <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input type="checkbox"/> Scientific World

**3. Rationale:**

Reproducible research refers to a set of methodologies for documenting scientific research (data and methods) so that results can be reproduced by other scientific researchers. Through efforts such as the Open Science Framework, most scientific and social scientific disciplines are developing standards for documenting and practicing reproducible research. This course will introduce students to the concept and to implementation of reproducible practices. DAT 311 and SOC 356 are being introduced as cross-listed courses to allow Sociology students to take the course toward the major and to help to ensure that there is enough student enrollment to run the classes.

**4. Learning Outcomes (By the end of the course students will be expected to):**

- Define reproducible research.
- Explain the challenges and benefits of reproducible research.
- Assess the reproducibility of existing published research studies.
- Develop a research design that will maximize reproducibility.

**5. Date of Departmental Approval:**

Data Science Steering Committee: February 9, 2023

Sociology Department: November 30, 2022

**LEHMAN COLLEGE  
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**DEPARTMENT OF SOCIOLOGY**

**CURRICULUM CHANGE**

1. **Type of change:** New Course with Cross-listing to existing course

2.

Department(s)	Sociology
Career	<input checked="" type="checkbox"/> Undergraduate [ ] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	Sociology
Course Prefix & Number	SOC 349/DAT 310
Course Title	Data Visualization
Description	Introduction to the theory and practice of data visualization.
Pre/ Co Requisites	
Credits	3
Hours	3
Liberal Arts	<input checked="" type="checkbox"/> Yes [ ] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science  <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input type="checkbox"/> Scientific World

3. **Rationale:**

This proposal adds a new Sociology course to be cross listed with DAT 310, which is an existing course in the Data Science minor. Sociology has been offering the class as a

special topics course in Sociology for the past several semesters, but we believe it should now be introduced as a permanent course.

**4. Learning Outcomes (By the end of the course students will be expected to):**

1. Explain the principles of effective data visualization
2. Interpret and evaluate data visualizations
3. Identify the most appropriate visualization technique(s) for a given data summary
4. Design and program exploratory and statistical visualizations of data

**5. Date of Departmental Approval:**

Sociology Department: November 30, 2022

Data Science Steering Committee: February 9, 2023

**LEHMAN COLLEGE  
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**DEPARTMENT OF SOCIOLOGY**

**CURRICULUM CHANGE**

1. **Type of change:** New course with cross listing with DAT 312

2.

Department(s)	Sociology
Career	<input checked="" type="checkbox"/> Undergraduate [ ] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	Data Science/Sociology
Course Prefix & Number	DAT 312/SOC 355
Course Title	Applied Intermediate Statistics
Description	Building on foundational statistical knowledge, explores intermediate topics focused on regression and its extensions and selected additional topics.
Pre/ Co Requisites	Any one of the following: SOC 345, PSY 226, GEH 245, ECO 302, BBA 303, BIO 240, HSD 269, MAT 301, MAT 327, MAT 330  NOTE: Any student who does not have one of the prerequisites may request permission to enroll from the department.
Credits	4
Hours	4
Liberal Arts	<input checked="" type="checkbox"/> Yes [ ] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science  <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society

	Scientific World
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**3. Rationale:**

Lehman College has lacked a “second” statistics course for students who have completed the required statistics course for their majors. This Data Science course will include more challenging material focused on ordinary least squares regression with multiple independent variables, generalized linear models, and advanced usage of statistical software or programming languages. There is no calculus prerequisite for this course which also makes it distinct from advanced courses offered by Math (although Math does not offer a regression course, so this will also potentially be useful for math students). It will introduce foundational math concepts (e.g. matrix multiplication) as needed. Sociology is introducing a course to be cross listed with the Data Science course so that Sociology majors can take an intermediate statistics course toward the major. Cross-listing the course in Sociology will also help to ensure that there will be enough students enrolled in the classes to run the classes.

**4. Learning Outcomes (By the end of the course students will be expected to):**

- Perform data analyses using regression analysis and related approaches.
- Interpret the results of such analyses.
- Apply parametric and simulation-based approaches to estimating confidence intervals for regression.
- Assess whether a given model meets the assumptions of regression analysis.
- Apply common approaches for addressing the violation of assumptions.

**5. Date of Departmental Approval:**

Sociology Department: November 30, 2022

Data Science Steering Committee: February 9, 2023