

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

LEHMAN SCHOLARS PROGRAM

CURRICULUM CHANGE

1. **Type of change:** New Course

2.

Department(s)	LSP
Career	<input checked="" type="checkbox"/> Undergraduate [] Graduate
Academic Level	<input checked="" type="checkbox"/> Regular [] Compensatory [] Developmental [] Remedial
Subject Area	Lehman Scholars Program (Interdisciplinary Seminar)
Course Prefix & Number	LSP 359
Course Title	The Scientific Revolution: From Copernicus to Newton and the Enlightenment
Description	Survey of the rise of modern science from Copernicus to Newton, the period of intellectual ferment in the 16th and 17th centuries generally referred to as the Scientific Revolution.
Pre/ Co Requisites	Enrollment in Lehman Scholars Program or Macaulay Honors College, or by special permission
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 checked="" type="checkbox"/> Scientific World

3. **Rationale:** The primary objective of this course is to acquaint students with the events and people—some famous, some not so well known—who have contributed to the Scientific Revolution, roughly covering the period 1450–1700. During this period, the understanding of nature and the universe underwent a series of dramatic changes that had social as well as intellectual consequences across virtually all of modern Europe.

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

Analyze the original scientific classics, along with diaries and letters where they survive, in order to evaluate as much as possible from primary sources the most important factors that motivated and inspired the creators of modern science.

Gain a basic understanding of the major issues, historiographic approaches to, and most current thinking about the causes, results, and long-term consequences of the development of scientific thinking throughout history.

Develop a variety of teaching and research skills, including seminar presentations, the writing of short reviews, critical evaluations of crucial problems in the history of science, and longer, analytical essays on assigned topics that incorporate evidence to sustain the student's argument.

Arrive at a deeper understanding of the ways in which scientific developments have increased the human ability to analyze scientific and technological problems, and identify possible solutions.

Assess the evolving use of empirical evidence, including its reliability and validity, in the history of science.

Examine the major issues, historiographic approaches to, and most current thinking about the causes, results, and long-term consequences of the Scientific Revolution, and will assess the impact of the Scientific Revolution on contemporary issues such as ethical responsibility and personal privacy.

5. **Date of Departmental Approval:** March 1, 2016

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Subject Area	Lehman Scholars Program (Interdisciplinary Seminar)
Course Prefix & Number	LSP 358
Course Title	Honors Seminar in Mathematical Reasoning: Understanding Mathematics
Description	In-depth understanding of mathematics. Topics to include the axiomatic method, ancient history of mathematics, and the philosophical foundations of mathematics.
Pre/ Co Requisites	MAT 104 or equivalent, or instructor's permission. Enrollment in Lehman Scholars Program or Macaulay Honors College, or by instructor's permission
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

	_____ Individual and Society _____ Scientific World
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3. **Rationale:** While the practical value of solving mathematical problems by hand arguably may be limited in of itself for non-STEM majors, understanding the principles and logic of mathematics is a vital career and life skill, regardless of occupational trajectory. This course hones students' grasp of mathematical knowledge and language, and develops problem-solving skills that can be utilized in various contexts.

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

Interpret and draw appropriate inferences from quantitative representations in problem sets and in assigned course readings.

Tackle mathematical problems using a multifaceted approach that includes algebraic, numerical, graphical, or statistical methods.

Become familiar with the language of mathematics, so that they are able to translate freely into and out of this language.

Describe solutions to mathematical problems in written assignments and in class presentations.

Understand interactions between mathematics and biology, physics, literature, and the social sciences.

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Subject Area	Lehman Scholars Program (Interdisciplinary Seminar)
Course Prefix & Number	LSP 357
Course Title	Honors Seminar in Mathematical Reasoning: The Shape of Space
Description	Use of evidence in mathematical reasoning, and the history and philosophical foundations of mathematics. Emphasis will be on the mathematics of two-dimensional space.
Pre/ Co Requisites	MAT 104 or equivalent, or instructor's permission. Enrollment in Lehman Scholars Program or Macaulay Honors College, or by instructor's permission
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

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3. Rationale:

By exploring the mathematics of two-dimensional space, students will gain insights into studying spaces of higher dimensions. We will introduce and discuss a number of mathematical topics in the process, including: graph theory, classification of surfaces, platonic solids, hyperbolic geometry, tessellations, the Tower of Hanoi, 4–dimensional geometry, and many others.

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

Digest a variety of quantitative representations of information, and develop a facility for working with such representations, including formulae, graphs, and tables.

Utilize methods enabling them to launch a multifaceted attack on new mathematical problems they encounter, via algebraic, numerical, graphical, or statistical methods.

Understand the language of mathematics, so that they are able to translate freely into and out of this language.

Communicate their mathematical ideas effectively to others.

5. Date of Departmental Approval: March 1, 2016