

# QUANTITATIVE PERSPECTIVES

The well-educated person knows how to be a critical thinker, and a critical thinker asks good questions. To take a quantitative perspective on the world means that the questions we form can be best answered with some analytical thinking about real data or theoretical models. When discussing a current issue like the large number of people without adequate health care, the quantitative thinker might ask, "How many people have this problem? How do we know? Is lack of health care highly associated with level of education? How much does the problem vary between highly industrialized nations and lesser-developed ones? How much does this problem vary between countries of similar development?" A quantitative perspective on the world provides a useful, and often beautifully enlightening way to engage meaningful questions.

The Liberal Studies Major in Quantitative Perspectives (LSM-QP) is different than a traditional Math major or minor in that it does not focus on a large set of skills and techniques, but instead considers how to make connections between quantitative analysis and other disciplines.

The LSM consists of eight courses and a culminating project (LSM 450). Students can apply no more than two business courses and no more than two non-Bentley courses to the major. Up to two AP or IB courses can be applied to the major. Not all LSM concentrations can be paired with all business majors. See the major/minor exclusions ([catalog.bentley.edu/undergraduate/degree-requirements/major-minor-exclusions/](http://catalog.bentley.edu/undergraduate/degree-requirements/major-minor-exclusions/)) list for more information.

## Requirements

Course	Title	Credits
Select one course from the Deterministic Perspective (according to math placement)		3
MA 126	Applied Calculus for Business II	
MA 139	Calculus II	
Select one course from the Probability and Statistics Perspective (p. 1)		3
Select one course from the Interdisciplinary Perspective (p. 1)		3
Select one course from the Student Interest Perspective (p. 1)		3
Select four courses from the Applied Quantitative Perspective (p. 2)		12 to 13
LSM 450	LSM - Culminating Experience	

## Probability and Statistics Perspective

Course	Title	Credits
Select one of the following courses:		3
MA 225	Probability Models for Business Decision-Making	
MA 243	Discrete Probability	
MA 252	Regression Analysis <sup>1</sup>	
MA 263	Continuous Probability for Risk Management	

MA 343	The Mathematics of Discrete Options Pricing
MA 347	Data Mining

## Interdisciplinary Perspective

Course	Title	Credits
Select one of the following courses:		3
MA 205	Chaos, Fractals and Dynamics	
MA 215	Mathematics of Sports	
MA 223	Linear Models for Business Decision-Making	
MA 225	Probability Models for Business Decision-Making	
MA 227	Mathematical Modeling in Environmental Management	
MA 263	Continuous Probability for Risk Management	
MA/PH 305	Mathematical Logic	
MA 307	The Mathematics of Computer Graphics	
MA 309	Game Theory	
MA 310	Actuarial Topics in Probability and Risk Management	

## Student Interest Perspective

Course	Title	Credits
All students must, in consultation with the LSM advisor, take one other MA course numbered 200 or higher:		3
MA 205	Chaos, Fractals and Dynamics	
MA 207	Matrix Algebra with Applications	
MA 223	Linear Models for Business Decision-Making	
MA 225	Probability Models for Business Decision-Making	
MA 227	Mathematical Modeling in Environmental Management	
MA 233	Calculus III	
MA 235	Differential Equations	
MA 239	Linear Algebra	
MA 243	Discrete Probability	
MA 252	Regression Analysis <sup>1</sup>	
MA 255	Design of Experiments	
MA 261	Numerical Methods	
MA 263	Continuous Probability for Risk Management	
MA 267	Discrete Mathematics	
MA/PH 305	Mathematical Logic	
MA 307	The Mathematics of Computer Graphics	
MA 309	Game Theory	
MA 335	Financial Calculus and Derivative Pricing	
MA 343	The Mathematics of Discrete Options Pricing	
MA 346	Data Science	
MA 347	Data Mining	

## Applied Quantitative Perspective

Course	Title	Credits
Select four courses (12 credits or 13 credits if NASC 100/101 is selected)		
The student will take, in consultation with the LSM advisor, four additional electives outside of the mathematical sciences. For each course, the student will connect the course to the LSM by looking at the course content with a quantitative perspective. This will typically be accomplished with a paper within the course or a paper written in consultation with the LSM advisor.		
GLS 248	Media and Politics	
HI 314	History of the World Economy	
HI 346	Economic History of the United States	
HI 353	20th Century U.S. Economic History	
NASC 100	Astronomy: Solar System	
NASC 101	Astronomy: Stars and Universe	
NASC 140	Energy and The Environment	
NASE 303	Life in the Universe	
NASE 309	The Science and Business of Biotechnology	
NASE 315	Human Health and Disease in Today's World	
NASE 319	Human Inheritance	
NASE 336	Water and the Environment	
NASE 337	Global Climate Change	
NASE 339	Weather and Climate	
NASE 342	Light and Color	
NASE 344	Energy Alternatives	
NASE 364	Science of Sustainability	
Business Departments: (LSMs may use no more than two Business Department courses)		
CS 240	Business Processing and Communications Infrastructure	
EC 224	Intermediate Price Theory	
EC 225	Intermediate Macroeconomics	
EC 282	Introduction to Econometrics	
FI 305	Principles of Accounting and Finance	
FI 306	Financial Markets and Investment	
IPM 320	Decision Support and Business Intelligence	
IPM 450	Enterprise Systems Configuration for Business	
MK 322	Marketing Research	

<sup>1</sup> Title of MA 252 is now Regression Analysis.