

Quantitative Perspectives

The liberally 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 the third world? How much does it vary between countries of similar development?" A quantitative perspective on the world provides a useful, and often beautifully enlightening, way to engage questions.

The proposed 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 rather on considering how to make the connections between quantitative analysis and other disciplines. A total of 8 courses (24/25 credits) must be completed.

Course requirements:

Deterministic Perspective

Complete one of the following according to math placement (3 credits)

- MA 126 Applied Calculus for Business II
- MA 139 Calculus II
- MA 249 Case Studies in Mathematics

Probability and Statistics Perspective

Choose one course from the following list (3 credits):

- MA 225 Probability Models for Business Decision-Making
- MA 243 Discrete Probability
- MA 252 Mathematical Statistics
- MA 263 Continuous Probability For Risk Management
- MA 343 The Mathematics of Discrete Options Pricing
- ST 242 Applied Business Statistics

Interdisciplinary Perspective

Choose one course from the following list (3 credits):

- MA 205 Chaos, Fractals and Dynamics
- MA 223 Linear Models for Business Decision-Making
- MA 227 Math Modeling in Environmental Mgmt
- MA 263 Continuous Probability for Risk Management
- MA 307 The Mathematics of Computer Graphics
- MA 310 Actuarial Topics in Probability and Risk Management
- MA 215 Mathematics of Sports
- MA 225 Probability Models for Business Decision-Making
- MA 249 Case Studies in Mathematics
- MA/PH 305 Introduction to Mathematical Logic
- MA 309 Game Theory

Student Interest Perspective

All students must, in consultation with the LSM advisor, take one other MA course numbered 200 or higher (3 credits).

- 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 Mgmt
- MA 233 Calculus III
- MA 235 Differential Equations
- MA 239 Linear Algebra
- MA 243 Discrete Probability
- MA 252 Mathematical Statistics
- MA 261 Numerical Models
- MA 263 Continuous Probability for Risk Management
- MA 267 Discrete Mathematics
- MA/PH 305 Introduction to 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

Applied Quantitative Perspectives (Choose 4 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.

- NASC 100 Intro to the Solar System
- NASC 101 Stars and the Universe
- NASE 303 Life in the Universe
- GLS 225 Politics and Urban Economy in the US (GO 252)
- GLS 248 Business and Politics of the News Media (GO 218)
- PS 325 Cyber Psychology
- PS 328 Financial Psychology
- HI 314 Hist of the World Economy
- HI 326 Age of Enlightenment
- HI 346 Econ History of the US
- HI 353 The American Economy of the 20th Century
- ID 433 Research Methods
- INT 320 Case Studies in Transforming Economies Of Europe
- NASC 140 Basic Physics
- NASE 309 The Science and Business of Biotechnology
- NASE 319 Human Inheritance: From Genes to Behavior
- NASE 339 The Atmosphere
- NASE 336 Water and the Environment

- NASE 341 Physics of Sports
- NASE 342 Light and Color
- NASE 344 Energy Alternatives
- NASE 345 How Things Work
- NASE 309 The Science and Business of Biotechnology
- NASE 364 Science of Sustainability
- PH 111 Introduction to Logic

Business Departments: (LSMs may use no more than two business department courses)

- CS 240 Business Process and Communication Infrastructure
- EC 224 Intermediate Price Theory
- EC 225 Intermediate Macroeconomics
- EC 245 Business Forecasting
- EC 275 The Economics of Sport
- EC 361 Econometrics
- EC 371 Mathematical Tools in Economics
- FI 305 Principles of Accounting and Finance

Business Departments: continued

FI 306 Financial Markets and Investments
FI 327 Insurance & Risk Mgmt
IPM 320 Decision Support and Business Intelligence
IPM 450 Enterprise Sys Configuration for Business
MK 322 Marketing Research

Please note: LSMs may use no more than two business department courses, and no more than 4 courses may be taken in any one discipline.

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