QUANTITATIVE ANALYSIS CONCENTRATION

Emphasizes the skills needed to analyze market data in fast-paced industries such as manufacturing, financial services, and advertising, and provides the technical training required to engage in consulting. There is also a continued need for quantitative analysis by lawyers, accountants, engineers, health service administrators, urban planners, and local, national, and international government agencies. The concentration prepares students for jobs that entail forecasting, data analysis and quantitative economics, and provides a solid foundation for graduate study in economics and business.

ECON 440  Advanced Econometrics  4
STAT 331  Statistical Computing with R  4

Approved Electives:  

Select from the following courses:  20

Analytics

BUS 393  Database Systems in Business
BUS 421  Marketing Analytics and Business Intelligence
BUS 441  Computer Applications in Finance
BUS 491  Decision Support Systems
ECON 339  Econometrics  2
ECON 395  Programming for Economics and Analytics  3
or BUS 392  Business Application Development
or CSC 101  Fundamentals of Computer Science

Statistics and Decision Analysis

ECON 406  Applied Forecasting
ECON 409  Probability Models for Economic Decisions
IME 301  Operations Research I
IME 305  Operations Research II
STAT 323  Design and Analysis of Experiments I
STAT 324  Applied Regression Analysis
STAT 330  Statistical Computing with SAS
STAT 416  Statistical Analysis of Time Series
STAT 419  Applied Multivariate Statistics
STAT 425  Probability Theory
STAT 426  Estimation and Sampling Theory
STAT 427  Mathematical Statistics

Mathematical Foundations

ECON 408  Mathematical Economics
MATH 142  Calculus II
MATH 143  Calculus III
MATH 206  Linear Algebra I
MATH 241  Calculus IV
MATH 242  Differential Equations I
MATH 244  Linear Analysis I
MATH 248  Methods of Proof in Mathematics
MATH 304  Vector Analysis
MATH 306  Linear Algebra II
MATH 344  Linear Analysis II
MATH 406  Linear Algebra III
MATH 412  Introduction to Analysis I
MATH 413  Introduction to Analysis II
MATH 414  Introduction to Analysis III
MATH 416  Differential Equations II
MATH 418  Partial Differential Equations
MATH 437  Game Theory
MATH 451  Numerical Analysis I
MATH 452  Numerical Analysis II
MATH 453  Numerical Optimization

Total units  28

1 Consultation with an advisor is recommended prior to choosing approved electives. Courses in Analytics or in Statistics and Decision Analysis provide a focus in analytics. Courses in Statistics and Decision Analysis or in Mathematical Foundations are recommended for students pursuing post-baccalaureate studies.

2 Economics majors cannot count ECON 339 toward electives in the Quantitative concentration.

3 Economics majors cannot count ECON 395 or BUS 392 or CSC 101 toward electives in the Quantitative concentration.