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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 440</td>
<td>Advanced Econometrics</td>
<td>4</td>
</tr>
<tr>
<td>STAT 331</td>
<td>Statistical Computing with R</td>
<td>4</td>
</tr>
</tbody>
</table>

Approved Electives: 1

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
- ECON 395  Programming for Economics and Analytics
  - 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.