



**BECOME YOUR  
ORGANIZATION'S  
DATA SUPERHERO**

## GRADUATE DATA ANALYTICS

With a unique blend of theory and application, CBA's graduate level data analytics program prepares the analyst to solve real business problems using cutting-edge tools. Students are trained in lab-based courses to extract, clean, and analyze data using parametric, non-parametric, and machine learning methods. Further, classes are structured to replicate the real world as much as possible. Students will interact with large, messy datasets housed in SQL databases, combine them with other sources such as flat files, and write algorithmic cleaning procedures. The data analytics program trains the analyst not just in today's methods but gives them the foundation to learn new procedures in the future.

### SKILLS TIMELINE AND LEARNING OBJECTIVES

SEMESTER	SKILLS	LEARNING OBJECTIVES
Fall I -ECON 8306	Quantitative Skills	
Spring I -ECON 8300 -ECON 8320	Introductory Programming Data Management Regression Modeling Web Scraping Web APIs	<ol style="list-style-type: none"> <li>1) Demonstrate an ability to programmatically clean, merge, extract, and manage data from raw files and databases</li> <li>2) Appropriately apply parametric regression analysis</li> <li>3) Visualize data and communicate with others</li> </ol>
Fall II -ECON 8310 -ECON 8330	Predictive Analytics Forecasting Elementary Machine Learning Non-parametrics Non-parametric/ML based Visualization Time-series models	<ol style="list-style-type: none"> <li>4) Apply advanced regression and non-parametric technique, including time-series models, kernels, re-sampling methods, and rank-based tests</li> <li>5) Apply machine learning techniques, including ensemble methods and support vector machines</li> </ol>
Spring II	Electives/Applied experience	

**Increase your  
professional power  
with a graduate  
business degree.**

Through learning experiences that emphasize the application of sound and innovative business techniques, you'll learn to contribute significantly to organizational performance.

### RETURN ON INVESTMENT

UNO offers the most affordable graduate school tuition rates in the Omaha area and provides many funding sources to help students finance their education: graduate assistantships, scholarships, tuition waivers, and tuition-reducing programs with neighboring states.



### TO LEARN MORE CONTACT

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# GRADUATE DATA ANALYTICS

## CURRICULUM

Students must enter this concentration in the fall semester. Please see your advisor for details about the sequencing of courses.

### ECON 8306 Quantitative Applications in Economics and Business (3 credits)

The study and application of modern quantitative techniques to problem-solving in economics and business. Prepares the student mathematically for later courses.

### ECON 8300 Econometrics (3 credits)

The study of the underlying assumptions, techniques and applications of single and multiple equation regression analysis.

### ECON 8320 Tools for Data Analysis (3 credits)

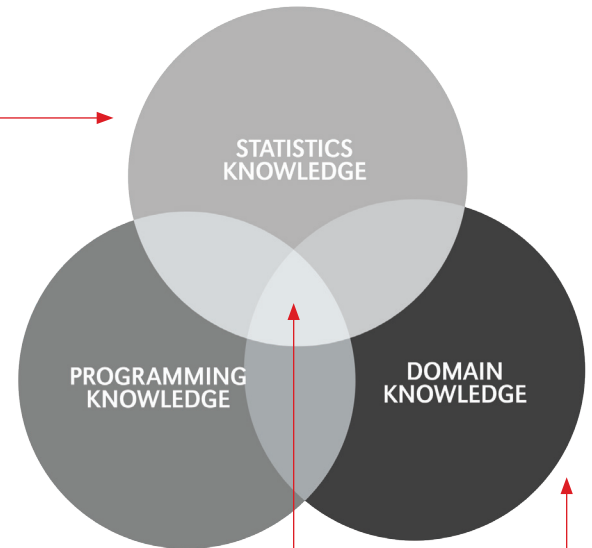
Covers basic principles of programming languages, as well as libraries useful in collecting, cleaning and analyzing data to answer research questions. While the course uses Python, the student should be able to move to other languages frequently used in data analysis using the principles taught in this course.

### ECON 8310 Business Forecasting (3 credits)

The course will cover forecasting tools and applications applied to business settings using Python. Traditional Econometric forecasting methods as well as predictive analytics and machine learning approaches are covered in the course.

### ECON 8330 Data Analysis from Scratch (3 credits)

This class trains the student to build all estimators from scratch. Additionally, it introduces numerous non-parametric, machine learning, and simulation techniques. This approach to econometrics results in a stronger understanding of statistical assumptions and methods, a better understanding of when a method is appropriate, and stronger programming abilities.



### MA/MS Economics

An applied masters program allowing the combining of a specialty (e.g. international, business) with core economics knowledge. Total credits to graduate: 36

### Master of Business Administration

A general business degree exposing the student to all areas of business. Total credits to graduate: 35

## MASTER OF BUSINESS ADMINISTRATION

The Master of Business Administration (MBA) program has been helping professionals advance their careers through a rigorous and rewarding curriculum that produces principled leaders, strategic thinkers, and ethical decision-makers.

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## MASTER OF SCIENCE IN ECONOMICS

Providing a solid background in theory, quantitative methods, and applied skills addressing the needs of economists involved in the analysis of domestic and international business and economic conditions, financial analysis, policy analysis, forecasting, simulation and related work.

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