

DATA SCIENCES AND OPERATIONS

SPRING 2025

DSO 427 - Spreadsheet Modeling for Business Insights

Section – 16186R

Professor

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Email

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When

Tue/Thu; 12:00 AM – 1:50 PM

Office

BRI 401 O

Units

4.0



WHY TAKE THIS COURSE?

This course is designed to train students to become effective business modelers, capable of building sound models that lead to actionable insights. The curriculum emphasizes practical applications through real-world case studies and larger business datasets. Students will learn:

- How to structure and solve **managerial problems** using Excel spreadsheets.
- Techniques for extracting **meaningful insights** from models.
- Real-world implications of models, methodologies, and the conclusions they drive.

Whether you're preparing for a career in finance, operations, marketing, or any other business-related field, this course equips you with the essential tools to model uncertainty, optimize resources, and make data-driven decisions that impact your organization.

COURSE OBJECTIVES

By the end of the course, students will be able to:

- Build **effective Excel models** to solve real-world business problems.
- Apply advanced spreadsheet functions for **decision analysis** and **contingency planning**.
- Perform **risk analysis** using tools such as simulations and decision trees.
- Optimize resource planning using Excel's **solver and optimization tools**.
- Analyze financial models for better decision-making under uncertainty.

COURSE DESCRIPTION

- In a fast-paced business world, effective decision-making requires not only data but also sophisticated models to analyze that data. This course focuses on building Excel-based spreadsheet models to solve complex managerial problems across various industries. Students will learn to design models that provide insights for decision-making in areas such as finance, operations, and marketing. The course offers hands-on practice in several important methodologies, including:
 - **Monte Carlo Simulation** for handling uncertainty.
 - **Risk Analysis** using decision trees.
 - **Optimization Techniques** for resource planning and allocation.
 - **Financial Modeling** for business forecasting and budgeting.

In addition to technical skills, this course will focus on developing the communication skills necessary for conveying complex quantitative findings and driving organizational change.