

Syllabus

ECO798: Special Topics: Economic Data Analytics Practicum

Spring 2024

Meeting Time: Thursdays 5:45pm-9:00pm

Room: DPC8208

Instructor: Professor Anthony T. Lo Sasso

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Office hours: 4:30-5:30pm Thursday: I'll be in my office in the Economics Department in DePaul Center (room 6208) before class. Alternatively, you should feel free to contact me to schedule a time to chat whenever it's convenient for you.

Overview

This course provides a comprehensive exploration into the multifaceted world of economic analysis tailored for consulting, industry, and government. Leveraging a robust dataset, students will immerse themselves in real-world challenges spanning demand forecasting, data management, competitive market analysis, market entry strategies, and more. Through a balanced blend of theoretical knowledge and hands-on experience, students will gain valuable insights into the pivotal role economic analysis plays in consulting (and other industries), honing their skills to craft actionable strategies and data-driven recommendations for diverse business scenarios.

Learning Objectives:

- **Data Mastery:** Develop proficiency in managing, cleaning, and extracting actionable insights from large datasets relevant to economic scenarios.
- **Demand Forecasting:** Understand and apply various techniques to predict market demand, interpreting the implications of these forecasts for business decision-making.
- **Competitive Analysis:** Gain the skills to use data to assess market structures, identify key players, and conduct in-depth competitive market analyses to guide business strategies.
- **Market Entry and Expansion:** Evaluate market potential, barriers to entry, and strategize for effective market entry or expansion, incorporating economic and local factors.
- **Effective Communication:** Hone the ability to present data-driven insights through compelling visualizations and narratives, ensuring recommendations are clear and actionable for clients.

Data: among the datasets that will inform the course is the 2006-2014 Automated Reports and Consolidated Ordering System (ARCOS), a data collection system in which manufacturers and distributors report their controlled substances transactions to the Drug Enforcement Administration (DEA). ARCOS provides an acquisition/distribution transactional record of applicable activities to the DEA involving certain controlled substances. It will be provided by the instructor. Other data sets will be provided for specific purposes. You may use whatever data analysis tools that you are most comfortable with (e.g., Python, R, Stata).

For the culminating capstone project, you are tasked with simulating a comprehensive consulting engagement using the ARCOS dataset. Drawing upon acquired skills and knowledge, you will identify a complex economic challenge faced by a mock client. This challenge may span issues such as market entry

barriers, demand fluctuations, competitive threats, or macroeconomic impacts. You will perform a deep data analysis, apply relevant economic models, and craft a strategic recommendation, which you will then present in a compelling, consultant-style presentation. This project will not only test your analytical prowess but also your ability to communicate intricate economic insights in a client-friendly manner, mirroring the real-world demands of an economic consultant.

Prerequisites

Previous or concurrent enrollment in Econ 510: Data Analysis III

Grading

- Assignments:
 - 4 roughly biweekly assignments, 15% each
 - 1 final project, 30%
 - Participation, 10%
- Grading rubric:
A = 93-100, A- = 90-92, B+ = 87-89, B = 83-86, B- = 80-82, C+ = 77-79, C = 73-76, C- = 70-72, D+ = 67-69, D = 60-66, F = <60

Academic dishonesty will under no circumstances be tolerated.

Course Outline

Most weeks will feature a special guest from industry—several DePaul alums! All will share their experience and expertise on the use of data and analytics in industry.

Introduction to Economic Analysis for Consulting

- Overview of the consulting industry
- Introduction to economic modeling and its relevance to consulting
- Getting familiar with the dataset: structure, variables, and context

Assignment: Get setup in the DePaul Virtual Computer Lab

Basics of Data Management and Cleaning

- Principles of data integrity and reliability
- Tools and techniques for data cleaning and management
- Transforming raw data into actionable insights

Assignment: Clean a subset of the dataset and provide initial insights/observations

Competitive Market Analysis

- Identifying and analyzing market structures
- Techniques for competitive analysis

Assignment: Benchmarking project

Demand Analysis and Forecasting

- Basics of demand analysis
- Forecasting techniques: time series, regression models, etc.

Assignment: Airline no-show prediction

Pricing Analysis

- Economic principles of pricing
- Pricing strategies: cost-plus, value-based, and more

Assignment: Yogurt sales with price/promotion

Market Entry and Expansion Analysis

- Factors to consider in market entry: barriers, competitors, local regulations, consumer preferences
- Analyzing potential markets using economic indicators
- Strategies for market expansion and overcoming challenges

Data Visualization and Presentation for Consultants

- Importance of effective data visualization
- Tools and techniques for impactful presentations
- Crafting a story and driving decision-making through insights

Capstone Project Presentation

- presentation of student analyses, recommendations, and insights to the class

Final Assignment: Submit the capstone project report and presentation.