

**UGBA 137.1 (3 Units)**  
**Data Science Applications for Finance and Accounting**  
*Technology, Data & Analytics*

Lectures: MW 12:30-2pm

Instructor: [Donatella Taurasi, PhD](#)

### Overview

The vast proliferation of data, combined with increasing technological advances and massive changes in regulation, is transforming the competitive landscape of various industries. In this course we will discuss how these forces are driving changes in finance and accounting, and how to make sense of their future implications. Students will be exposed to the exciting intersection of technology with finance and accounting, while emphasizing the role of data and data analytics. In each of these areas we will start by analyzing the sector and its traditional incumbents. We will then examine use cases and strategies for incoming technology-based players, with an emphasis on the role that data analytics and data can play. For each of these use cases, we will start by identifying critical business problems that need to be solved, and then work backwards to see how finance and accounting analytics can help. The course's goal is to arm students with an in-depth understanding of today's competitive business environment where forward-looking predictive insights are shaping tomorrow's business strategy and improving day-to-day decision making in real time. The course won't be training students as Data Scientists, but will enable students to learn through practice how to leverage technology, data, and analytical tools in order to gain the types of insights that can create value and provide a meaningful competitive advantage. Students will have the opportunity to learn Python programming and expand their knowledge of analytical methods and applications and conduct original research to inform complex decisions. During step-by-step sessions, students will apply basic data science tools, including data management and visualization, modeling, and machine learning using Python and libraries such as Pandas. No previous knowledge or experience in Python is required.

The aim of this course is to:

- Build an understanding of **how data and analytics are being used to drive decisions in a variety of contexts.**
- Appreciate the **manager's role** in hypothesis formation, model design, interpretation of results, and formulation of actionable recommendations.
- Provide practical experience in applying data science and analytics using open source software **Python** to analyze managerial problems.

The main deliverable of the course is a group project. This project will bring together all the new skills and insights you have learned throughout the course. You and your team are required to choose a topic in finance or accounting that you'd like to analyze or learn more about and that you can get some data from. Once you have picked the industry/company and gathered data, you are required to develop a business case (question), a hypothesis about the data, and implement a model. You will need to present the findings and recommendations of your analysis through a written report and an interactive presentation. Other deliverables include individual reading and analyzing approximately 4 cases (5-15 pages in length each) for the entire course and short quiz per week.

## About the Instructor:



Donatella is the Data Science Officer and Partner at Lumen Global Compass. Donatella has been a member of the Professional Finance Faculty at the Haas School of Business since 2013 and a Faculty member at the Fung Institute for Engineering Leadership since 2015. Donatella teaches primarily in the area of Finance, Data Analytics, and Data Science. Donatella is a board member of several startups and organizations.

Donatella has also served as the Faculty Director for the UC Berkeley & Galvanize Data Science Program at Berkeley Executive Education. At Galvanize, Donatella was in charge of designing Applied Business curriculums tailored to Data Scientists. As an educator, Donatella has had the pleasure to train business leaders to become data-driven decision makers in all business verticals.

Donatella earned her PhD in Finance, Financial Markets, and Financial Institutions at the Department of Business and Economics at the University of Bologna, Italy. During her graduate studies, Donatella worked as a Visiting Scholar at the Westminster Business School in London, Stern School of Business at New York University, and the Haas School of Business at the University of California at Berkeley.

Donatella's research interests are in the fields of Behavioral Finance, Asset Pricing, Psychology and Economics, and Sustainability.