

Business Analytics II

Length: 2 Days

Summary: This course is designed to impact the way you think about transforming data into better decisions. Recent extraordinary improvements in data-collecting technologies have changed the way firms make informed and effective business decisions. The course on operations analytics focuses on how the data can be used to profitably match supply with demand in various business settings. In this course, you will learn how to model future demand uncertainties, how to predict the outcomes of competing policy choices and how to choose the best course of action in the face of risk. The course will introduce frameworks and ideas that provide insights into a spectrum of real-world business challenges, will teach you methods and software available for tackling these challenges quantitatively as well as the issues involved in gathering the relevant data.

This course is appropriate for beginners and business professionals with no prior analytics experience.

COURSE CONTENT

1: INTRODUCTION, DESCRIPTIVE AND PREDICTIVE ANALYTICS

In this module you'll be introduced to the Newsvendor problem, a fundamental problem of matching supply with demand in uncertain settings. You'll also cover the foundations of descriptive analytics for operations, learning how to use historical demand data to build forecasts for future demand. You'll be introduced to underlying analytic concepts, such as random variables, descriptive statistics, common forecasting tools, and measures for judging the quality of your forecasts.

- Course Introduction and Welcome
- The Newsvendor Problem
- Moving Averages
- Trends, Seasonality

2: PRESCRIPTIVE ANALYTICS, LOW UNCERTAINTY

In this module, you'll learn how to identify the best decisions in settings with low uncertainty by building optimization models and applying them to specific business challenges. You'll use algebraic formulations to concisely express optimization problems, look at how algebraic models should be converted into a spreadsheet format, and learn how to use spreadsheet Solvers as tools for identifying the best course of action.

- How to Build an Optimization Model
- Optimizing with Solver
- Network Optimization Example

3: PREDICTIVE ANALYTICS, RISK

How can you evaluate and compare decisions when their impact is uncertain? In this module you will learn how to build and interpret simulation models that can help you to evaluate complex business decisions in uncertain settings. You will be introduced to some common measures of risk and reward, you'll use simulation to estimate these quantities, and you'll learn how to interpret and visualize your simulation results.

- Comparing Decisions in Uncertain Settings
- Simulating Uncertain Outcomes in Excel
- Interpreting and Visualizing Simulation Output

4: PRESCRIPTIVE ANALYTICS, HIGH UNCERTAINTY

This module introduces decision trees, a useful tool for evaluating decisions made under uncertainty. Using a concrete example, you'll learn how optimization, simulation, and decision trees can be used together to solve more complex business problems with high degrees of uncertainty.

- Decision Trees
- Using Simulation with Decision Trees
- Using Optimization Together with Simulation