Harvard Business School Online

Business Analytics

In today's business world, the ability to make data-driven decisions is critical to success. Harvard Business School Online's Business Analytics will teach you basic analytical skills to collect, analyze, and interpret data. This course is not based on rote memorization of equations or facts, but focuses on honing your understanding of key concepts, your managerial judgment, and your ability to apply course concepts to real business problems.

Business Analytics begins with basic descriptive statistics and progresses to regression analysis. You'll learn course concepts in the context of A/B testing for a website, checking the accuracy of inventory, forecasting sales, and planning staffing levels. Throughout the course, you will receive clear guidance on how to implement analytical techniques in Excel. No matter your job function or career aspirations, this course will demystify data analysis and equip you with concrete skills to apply to your work or further studies. This course will allow you to:

- **Recognize** trends, detect outliers, and summarize data sets concisely
- **Analyze** relationships between variables
- **Develop** and test hypotheses to inform managerial decisions
- **Craft** sound survey questions and draw conclusions from samples of a larger population
- **Estimate** the accuracy of statistics by calculating confidence intervals
- **Perform** single and multiple variable regression analysis using Excel and interpret the output

Quick Facts

- **An interactive, immersive, and highly experiential online program**
- **Develop a data mindset**
- **Gain the analytical skills to interpret and communicate data**
- **5 modules of study over 8 weeks**
- **Approximately 40 hours of total learning time**
- **Certificate of Completion from Harvard Business School Online**

Who is this course for?

Business Analytics is designed for individuals who are looking to master quantitative methods used to analyze data and make better management decisions.

About the Harvard Business School Faculty

Janice H. Hammond

Jesse Philips Professor of Manufacturing

Professor Hammond is a Professor in the Technology and Operations Management (TOM) Unit and Senior Associate Dean for Culture and Community at HBS. Her research focuses on speed and flexibility in manufacturing and logistics systems to respond to changing customer demand.

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Syllabus

Modules		Lessons	Learning Objectives	
Module 1	**Describing and Summarizing Data**	• Visualizing Data • Descriptive Statistics • Relationships Between Two Variables	• Create visual representations of data that allow you to recognize trends and detect outliers • Define and calculate descriptive statistics to summarize data sets concisely • Analyze relationships between two variables by creating scatter plots and calculating the correlation coefficient	Quiz
Module 2	**Sampling and Estimation**	• Creating Representative and Unbiased Samples • The Normal Distribution • Confidence Intervals • Amazon's Inventory Sampling	• Determine an adequate sample size, explain the importance of random sampling, and craft sound survey questions to create representative samples • Draw conclusions about the larger population by calculating sample statistics and applying the properties of the normal distribution • Estimate the accuracy of statistics by calculating confidence intervals	Quiz
Module 3	**Hypothesis Testing**	• Designing and Performing Hypothesis Tests • Improving the Customer Experience	• Develop and test hypotheses to assess the impact of changes on an entire population or estimate differences between populations • Quantify the evidence in favor of or against your hypothesis in order to make managerial decisions	Quiz
Module 4	**Single Variable Linear Regression**	• The Regression Line • Forecasting • Interpreting the Regression Output • Performing Regression Analysis • Forecasting Home Video Units	• Identify the best fit line for a data set and interpret its equation • Analyze the relationship between two variables and develop forecasts for values outside the data set • Perform a regression analysis using Excel and interpret the output	Quiz
Module 5	**Multiple Regression**	• The Multiple Regression Equation • Adapting Concepts from Single Regression • Performing Multiple Regression Analysis • New Concepts in Multiple Regression • The Caesars Staffing Problem	• Estimate the relative predictive power of different combinations of variables by performing and interpreting a multiple variable regression analysis using Excel • Expand the range of your analysis by using dummy and lagged variables	Quiz