Business Analytics

HBX

HBX is the digital learning initiative from Harvard Business School. HBX programs are designed to deliver a social, active, and case-based learning experience in a highly engaging digital learning environment. Business Analytics introduces quantitative methods used to analyze data and make better management decisions. 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.

SYLLABUS

MODULES	CASE STUDIES	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	• Amazon	• 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	• Amazon	• 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	• Walt Disney Studios	• 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	• Caesars Entertainment	• 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