Business Analytics

Syllabus

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.

Modules	Case Studies	Takeaways	Key Exercises
Module 1 — Describing and Summarizing Data	• N/A	• Recognize trends in data and detect outliers • Summarize data sets concisely • Analyze relationships between variables	• Create visual representations of data in Excel • Define and calculate descriptive statistics • Create scatter plots and calculate the correlation coefficient • Quiz
Module 2 — Sampling and Estimation	• Amazon	• Create representative samples and draw conclusions about the larger population • Craft sound survey questions	• Calculate sample statistics and apply the properties of the normal distribution • Calculate confidence intervals to estimate the accuracy of statistics • Quiz
Module 3 — Hypothesis Testing	• Amazon	• Quantify the evidence in favor of or against your hypothesis in order to make managerial decisions	• Develop and test hypotheses in Excel to assess the impact of changes on an entire population or estimate differences between populations • Interpret the results of a series of website A/B tests • Quiz
Module 4 — Single Variable Linear Regression	• Walt Disney Studios	• Analyze the relationship between two variables and develop forecasts for values outside the data set	• Identify the best fit line for a data set and interpret its equation through an analysis of housing data • Perform a regression analysis of box office and home video sales using Excel and interpret the output • Quiz
Module 5 — Multiple Regression	• Caesars Entertainment	• Identify relationships among three or more variables to improve understanding of data and provide better forecasts	• Estimate the relative predictive power of different combinations of variables by performing and interpreting a multiple variable regression analysis using Excel • Apply multiple regression analysis to a staffing challenge faced by a hotel • Expand the range of your analysis by using dummy and lagged variables • Quiz

Learning requirements: In order to earn a Certificate of Completion, participants must thoughtfully complete all 5 modules, including satisfactory completion of associated quizzes, by stated deadlines.