



Certificate in Data Analytics

This certificate in data analytics provides an overview of topics in statistics and their applications in various fields. This certificate will present the basics of quantitative analysis and its increasing use in today's professional landscape. Learners are exposed to quantitative decision-making tools and techniques, which tie into real-world case studies. Each course in this certificate utilizes games, videos, interactive exercises, quizzes, real-world case studies, and other engaging content to ensure rapid mastery of the content and direct application. Course videos and lessons focus on using both Microsoft Excel and OpenOffice.

Courses Included in this Certificate

- Statistical Process Control
- Data Analysis in the Real World
- Data Analysis for Improving Organizational Performance
- Tools of Data Analysis
- Statistics as a Managerial Tool
- Introduction to Data Analysis

Statistical Process Control

Statistical Process Control is all about boosting quality. Quality management can deliver value to customers and stakeholders and enable data-driven decision-making that helps organizations gain a competitive advantage in the marketplace. This intermediate-level course will introduce the basics of quality management, explain the difference between quality control and quality assurance, provide methods for analysis application, and show different applications of the Seven Basic Quality Tools. It all culminates in a brief case study, illustrating the concepts covered.

Learning Outcomes

- Describe principles that help guide quality management activities
- Use the Plan-Do-Check-Act cycle to coordinate work and implement change
- Explain the differences between quality control and quality assurance
- Create a SIPOC diagram to help visualize work as a process
- Explain the role that metrics and statistics play in measuring and controlling work processes
- Apply analysis and planning approaches to quality
- Explain how the Seven Basic Quality Tools are used to monitor and control quality processes
- Use the Seven Basic Quality Tools to process and sort non-numerical data
- Use the Seven Basic Quality Tools in combination to create powerful plans and solutions to quality problems
- Describe various quality management programs
- Employ quality management tools based on a brief case study

Data Analysis in the Real World

This course discusses data-driven decision making across a variety of sectors such as healthcare, education, and government. This course also offers recommendations for decision-making based on data analytics for each sector. The course will begin with an introduction of Big Data, then continue into a deeper dive on its implications within each sector.

Learning Outcomes

- Explain the management implications of the use of business intelligence and knowledge management systems
- Define Big Data and describe its current uses for analysis and future potential and its implications
- Explain common analytics for business and quality improvement
- Recommend manufacturing business decisions based on data analytics
- Explain common analytics used in health care
- Recommend health care decisions based on data analytics
- Explain common analytics used in education
- Recommend educational decisions based in data analytics
- Explain common analytics used in government
- Recommend governmental decisions based on data analytics

Data Analysis for Improving Organizational Performance

When using data analysis to improve organizational performance, it's vital to employ the tools that bring the data to life and keep people engaged in the process. Organizations in both the public and private sectors often use tools and frameworks to deliver the data, and the information the data might suggest, to its staff. This intermediate-level course will explain some of these measures and tools, describe some specific measurements, and explain the relationship between assessment and strategy. Summarizing the data with the correct tool can be the gating factor to reaching staff and effecting changes that spur performance improvement.

Learning Outcomes

- Explain how performance measures are used in different settings
- Differentiate among various organizational performance measurements
- Describe the advantages and disadvantages of KPIs
- Describe the advantages and disadvantages of the Balanced Scorecard
- Describe the advantages and disadvantages of a Net Promoter Score
- Explain the relationship between performance assessment and organizational tactics and strategy
- Assess the validity of performance measures for an organization based on a brief case study

Tools of Data Analysis

Organizations commonly use several statistical tools and techniques to inform decision-making. These tools span numerous business functions and support many different objectives. This intermediate-level course describes, evaluates, and analyzes different statistical techniques and their real-world limitations and benefits. The course features crossover analysis, break-even analysis, cluster analysis, decision tree analysis, and an introduction to regression.

Learning Outcomes

- Describe linear programming as finding the "best" solution to a problem
- Explain how crossover analysis is utilized in decision-making
- Explain the factors and assumptions involved in break-even analysis
- Apply the standard deviation rule to a particular case of normal distributions
- Interpret the results of an ANOVA test
- Describe the various forecasting techniques and the benefits and limitations
- Identify regression analysis applications for purposes of description and prediction
- Describe other statistical techniques (time series analysis, cluster analysis, decision trees) and their real-world application
- Explain the advantages and disadvantages of various statistical techniques
- Choose a statistical technique based on a brief case study

Statistics as a Managerial Tool

Managing today can require good instincts. However, instinct is not enough to manage the huge amounts of available data and the complex variables of the business world. Statistics can help managers and leaders make sense of these complexities, back up their assertions, and feel confident about when to take the risks and pump the breaks. This intermediate-level course examines statistics as a managerial tool. It also looks at common graphical representations of data and how they can effectively explain situations and support persuasive arguments for a course of action.

Learning Outcomes

- Describe how statistics are used in different settings
- Describe common problems with, and misuse of, statistics
- Identify criteria for evaluating statistics
- Explain the critical fundamentals of probability and their real-world application
- Identify the fundamental concepts of descriptive statistics (populations and samples, measures of central tendency, measures of variability, measures of distribution) and their real-world application
- Evaluate data from several different graphical displays of a distribution of a categorical variable (bar chart, pie chart) and of a quantitative variable (histogram, stem plot, box plot)
- Explain the fundamental concepts of inferential statistics and their real-world application
- Relate the probability of an event to the likelihood of the event occurring
- Apply fundamental statistics to a real-world situation
- Translate statistical data into a graphical presentation based on a brief case study

Introduction to Data Analysis

Professionals in all industries rely on data to make decisions. By including data in your decision-making process, you can remove some of the guesswork that comes from relying solely on instincts and experience. This course will introduce you to data analysis by exploring the Davenport-Kim three-stage model for quantitative analysis. You will learn about different analytical methods, data quality and management, and visual representations of data. You will also explore research standards, best practices, and challenges that may arise as you analyze data. This course will provide information you can use to understand data and its importance in business.

Learning Outcomes

- Explain the value of analytics for an organization and define key terms related to data analysis
- Explain the stages of the Davenport-Kim three-stage model for analysis
- Describe different data collection methods
- Differentiate between qualitative and quantitative data
- Explain standard analytical techniques
- Describe the characteristics of high-quality data
- Describe the elements of data management
- Identify possible biases and errors within a data set
- Describe different graphical displays for a data set
- Describe common challenges associated with data analysis

Credits

- ⚙ 3 IACET CEUs
- ⚙ 30 SHRM PDCs
- ⚙ 25 PMI PDUs:
 - 10 Ways of Working PDUs
 - 7 Power Skills PDUs
 - 8 Business Acumen PDUs
- ⚙ 30 HRCI Credits
- ⚙ 25 ATD CI Credits

Accreditations

