

## CERTIFIED BUSINESS ANALYTICS PROFESSIONAL CBAP

Duration: 5 days; Instructor-led | Virtual Instructor-led

### OVERVIEW

Business Analytics is the scientific process of deriving insights from raw data to support decision making. Through this business analytics course you will learn:

- Fundamentals of Predictive Analytic techniques and How and Where to use them
- Learn the basics of statistical techniques and R language with hands-on to manage, manipulate and analyze data
- Solving business problems thru analytics via Case Studies
- Hands-on with Data sets to derive business insights from raw data

Business Analytics comprises of tools and methods that give the business users (i.e. decision makers) insight and understanding of not just what happened, but why it happened, with the purpose of using this insight to prescribe action.

### OBJECTIVES

- Understand the fundamentals of predictive analytics techniques and how and where to use them
- Learn the basics of statistical techniques and the R programming language through hands-on experience with data management and analysis
- Learn how to solve business problems through analytics using case studies
- Gain hands-on experience with data sets to derive business insights from raw data
- Understand the tools and methods of business analytics, and how they provide insight and understanding of not just what happened, but why it happened, with the purpose of using this insight to prescribe action
- Learn how to install and use R and R Studio for data management and statistical analysis
- Learn how to summarize, visualize, and prepare data for analysis using R
- Understand the concepts of hypothesis testing, ANOVA, and predictive analytics using R
- Learn about text mining, document and word classification, and sentiment analysis and how to apply these techniques in real-world applications.
- Understand how to apply all the concepts and skills learned in a case study to solve a real-world business problem.

### PREREQUISITES

- No prerequisites

### AUDIENCE

- Business professionals and analysts who want to learn the fundamentals of predictive analytics, statistical techniques, and the R programming language to be able to manage, manipulate, and analyze data to support decision making in their organization. It is also aimed at professionals who are interested in learning to solve business problems through analytics using case studies and hands-on experience with data sets. This training would also be beneficial for those who are interested in learning to use R, and in understanding text mining, document and word classification, and sentiment analysis and how to apply these techniques in real-world applications.

### CERTIFICATION

#### Cybertronium Certification Certified Business Analytics Professional

- Exam Platform: KALAM
- Exam Format: Multiple Choice Question (MCQ)
- Exam Questions: 25 Questions
- Exam Duration is: 90 Minutes
- Exam Pass Mark: 70%
- Exam Fees: Inclusive in the Course Fees
- Free Add-on: Free Membership access to KALAM Cybersecurity Collaboration & Community Skills Validation Platform

### COURSE CONTENTS

#### Module 1: Introduction to Business Analytics

This section provides an overview into the world of analytics. You will learn about various applications of analytics and analytics cycle.

- What is analytics and why is it so important?
- Applications of analytics
- Different kinds of analytics
- Various analytics tools
- Analytics project methodology
- Business Analytics vs. Business Analysis

#### Module 2: R Fundamentals

R is the most popular software/language for data management & statistical analysis of data. It is free and open source. This section covers on the first step of analytics on how to manage and manipulate data and datasets. Also learn how to start understanding the story your data is narrating by summarizing the data, checking its variability and shape.

- Installation of R & R Studio
- Basic and Advanced Data types in R

- Variable operators in R
- Working with R data frames
- Reading and writing data files to R
- R functions and loops
- Merging and sorting data
- Summarizing data, measures of central tendency
- Measures of data variability & distributions
- Using R language to summarize data

### Module 3: R Data visualization

Data visualization is extremely important to understand what the data is saying and gain insights in a snap. Visualization of data is a strong point of the R software.

- Need for data visualization
- Components of data visualization
- Utility and limitations
- Introduction to grammar of graphics
- Using the ggplot2 package in R to create visualizations

### Module 4: R Data preparation

Real world data is rarely Clean, It will always be dirty with missing data points, incorrect data, variables needing to be changed or created in order to analyze etc. A typical analytics project will have 60% of its time spent on preparing data for analysis. This is a crucial process as properly cleaned data will result in more accurate and stable analysis. This section teaches you all the data preparation techniques.

- Needs & methods of data preparation
- Handling missing values
- Outlier treatment
- Transforming variables
- Derived variables
- Binning data
- Modifying data with Base R

### Module 5: Hypothesis testing and ANOVA in R

With 93% confidence we can say that there is a 70% chance, people visiting this site thrice will buy this product. In this section, we cover on how to create a hypothesis, statistically test it and validate it through data and present it with clear and formal numbers to support decision making.

- Introducing statistical inference
- Estimators and confidence intervals
- Central Limit theorem
- Parametric and non-parametric statistical tests
- Analysis of variance (ANOVA)
- Case Study

### Module 6: R Predictive analytics

- Correlation and Linear regression
- Logistic regression
- Segmentation for marketing analytics
- Time series forecasting
- Decision Trees

### Module 7: Text Analytics, Document and Word Classification & Sentiment Analysis

- What is text mining?
- Tools for text mining
- Text mining packages in R
- Use cases of text analytics
- Text mining process
- What is document & word classification
- Steps for document & word classification
- Techniques for classification
- Case study on classifying news articles
- What is sentiment analysis
- Why is sentiment analysis done
- Real world applications of sentiment analysis
- Steps for sentiment analysis
- Sentiment scoring
- Dictionary creation
- Algorithms for sentiment scoring
- Case study - Analyzing sentiments in tweets for smartphone companies

**CASE STUDY:** Solving an actual business problem through analytics connecting all the concepts you had studied in this course.