Certified Business Analytics Specialist (CBAS)

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DURATION

4 Days

COURSE OBJECTIVES

Today, organizations are operating in a vibrant business environment, and thus face dynamic changes in customer demands. The companies want to deep dive into, not only the current information related to their customers, products, services and business process, but they also want to draw insights from the historical data related to their past performances and learn about previous trends and pattern. Thus, there has been a substantial adoption of business analytics market software and solutions among various industries for analysing such trends and unfold new business opportunities and formulate strategies based on new insights. Further, growing demand for analytics is increasing due to the increase in the big data trend in the organizations. It is no longer easier for the organizations to sustain in an intense competitive environment without business analytics and gathering the knowledge of what has happened in the past is also not easy without analytics. The software helps the organizations to provide answers related to any of the business queries that
"what has happened?" and helps them to understand "why it happened?" and predict "what should happen?" Hence, analytics plays a crucial role in augmenting organizational productivity and optimization of resources.

With regard to this, the companies invest significantly for automation and optimization of processes to better address the customer demands, and reducing its operational cost. In addition, various factors such as supply chain management, inventory management, and proper information related to the customers employees and every individual helps the analytics to provide the profitable insight in a cost-efficient manner. Thus, organizations are fortified to adopt business analytics market solutions, to detect and reduce the risks and errors related to the operation which may further result in reduction of the profitability of the organizations. Companies leverage these solutions to optimize the business process and operations cost efficiently – through real-time access to critical data and constantly updated information such as schedules and dispatch, job views, and customer queries to perform work with agility.

In this training, participants will actively step through the industry standard process for data mining and realize why an advanced degree in statistics, mathematics or computer science is no longer needed to implement predictive analytics. Live working sessions reveal real-world obstacles and breakthroughs from which to interpret, learn and apply.

As part of the course, participant will be given a case study and it would cover all the aspects of the Business Analytics, right from making a Data/Information Architecture for the case study to the cycle of CRISP-DM and finally converting all the requirements into predictive models using Rapid Miner.

JOB ROLES IN NICF / TARGETED AUDIENCE

- Data Analyst - Statistics and Mining
- Data Analyst - Text Analytics
- Operations Research Analyst
- IHL students

PRE-REQUISITES

Participants are recommended to have some basic understanding/knowledge of business domain

PROGRAM STRUCTURE

This is a 4-day intensive training program with the following assessment components.

Component 1. Written Examination (MCQ)

Component 2. Project Work Component (PWC)

These components are individual based. Participants will need to obtain 70% in both the components in order to qualify for this certification. If the participant fails one of the components, they will not pass the course and have to re-take that particular failed component. If they fail both components, they will have to re-take the assessment.

COURSE SESSION SCHEDULE

Day 1	**Session 1 (9:00 – 10:30)**	**Session 2 (10:40 – 12:10)**	**Session 3 (13:10 – 16:10)**	**Session 4 (16:10 – 18:10)**	
	Introduction of Business Analytics	Introduction of Business Analytics	Types of Analytics	Data/Information Architecture	
Day 2	**Session 1 (9:00 – 10:00)**	**Session 2 (10.10 – 12:10)**	**Session 2 (13.10 – 12:10)**	**Session 4 (14:10 – 17:10)**	**Session 5 (17:10 – 18:40)**
	Data/Information Architecture	Data Quality in Analytics	Data Quality in Analytics	Data Mining and Analytics	Data Mining Process
Day 3	**Session 1 (9:00 – 10:00)**	**Session 2 (10:10 – 12:10)**	**Session 3 (13:10 – 15:10)**	**Session 4 (15:10 – 18:10)**	
	Data Mining Process	CRISP-DM Standard	Data Mining Techniques	Data Mining Tools	
Day 4	**Session 1 (9:00 – 10:00)**	**Session 2 (10:10 – 12:10)**	**Session 2 (13:10 – 15:10)**	**Session 3 (15:10 – 17:40)**	
	Data Mining Tools	Software Tool	Software Tool	CBAS examination	

COURSE OUTLINE

Unit 1: Introduction to Business Analytics

- Understand the concept of Business Analytics
- Why it is important and of great value to any organization
- Main motivation behind the evolution of Business Analytics
- Business Analytics Process

Unit 2: Types of Analytics

- Various type of analytics
    - Descriptive Analytics
    - Predictive Analytics
    - Prescriptive Analytics
- Text Analytics and Web Analytics
- Understand the use of various analytics methods
- Understand the application usage of each one

Unit 3: Data/Information Architecture

- Understand the Data/Information Architecture of any organization
- Concept of Data Warehouse/Enterprise Data Warehouse (EDW)
- Concept of Data Mart
- Understand Data Mining, in Memory Analytics
- Understand Business Intelligence
- Understanding various ways of reporting
- Understand the complete picture of how analytics will be applied in any organization

Unit 4: Data Quality in Analytics

- Understand the importance of data in analytics
- Data quality process
- Data Validation process
- Various data structures
- Understand the data uniqueness

- Data privacy concerns
- Data governance

Unit 5: Data Mining and Analytics

- Understand the Data Mining process
- Concept of data mining
- Data mining objectives
- Data mining definition
- What data mining is and what is not data mining
- Convergence of three key areas in data mining

Unit 6: Data Mining Process

- Understand the concept of KDD
- Understand modeling in Data Mining
- Understand the difference between data mining models and statistical models
- Understand the scoring in data mining models
- Understand the data mining process

Unit 7: CRISP-DM Standard

- Understand the need for standards in Data Mining
- Main phases of CRISP-DM
- Understand main phases and workbench streams of CRISP-DM and its importance
- Walk through a sample case of CRISP

Unit 8: Data Mining Techniques

- Understand the various data mining techniques
    - Statistical Models
    - Supervised Machine Learning Models
    - Unsupervised Machine Learning Models
- Understand the 5 important DM techniques
- Understand how correlation and association rule mining techniques works

- Understand the classification techniques
- Understand the clustering techniques
- Understanding the forecasting techniques
- Understanding the Predictive Analytics techniques

Unit 9: Data Mining Tools

- Explore the various tools for Data Mining in the market
- Explore and understand the standards in Data Mining Software Tools
- Differentiate the pros and cons of each commercial software tools
- Look at the open source tools in the market

Unit 10: Software Tool

- Understand the RapidMiner framework
- Explore various features of RapidMiner
- Walkthrough various business use cases with RapidMiner

Hands-On

Participants will also be exposed to various software tools in the market for analytics and would be having hands on session on RapidMiner tool. The course would be ideal for professionals/executives to gain an insight on the analytics, how to align to the business vision and get the value out of it.

Case Study

As part of the course, participant will be given a case study and it would cover all the aspects of the Business Analytics, right from making a Data/Information Architecture for the case study to the cycle of CRISP-DM and finally converting all the requirements into predictive models using RapidMiner tool.

WRITTEN ASSESSMENT

As part of the written examination, each participant will be assessed individually on the last day of the training for their understanding of the subject matter and ability to evaluate, choose and apply them in specific context and also the ability to identify and manage risks. The assessment focuses on higher levels of learning in Bloom's taxonomy: Application, Analysis, Synthesis and Evaluation.

This written examination will primarily consist of 40 multiple choice questions spanning various aspects as covered in the program. It is an individual, competency-based assessment.

COURSE OUTCOME

1. Acquire knowledge on Business Analytics and its impact on enterprises with several use cases
2. Gain a complete understanding of Existing Data Architecture across several organizations and how Big Data Technologies are stacked together
3. Acquire concepts and techniques used in business analytics landscape which includes data mining, data warehouse, data mart, business intelligence
4. Gain a solid understanding in the statistical and analytical methods that make up the backbone of data science
5. Acquire key predictive modelling techniques and apply them to solve real life problems
6. Get hands-on experience in using RapidMiner, Power Bi & Tableau

EXAM PREPARATION

The objective of the certification examination is to evaluate the knowledge and skills acquired by the participants during the course. The weightage in key topics of the course as follows:

- **Introduction to Business Analytics [10%]**
- **Types of Analytics [15%]**
- **Data/Information Architecture [25%]**
- **Data Quality in Analytics [8%]**
- **Data Mining and Analytics [7%]**
- **Data Mining Process [15%]**
- **CRISP-DM Standard [10%]**
- **Data Mining Techniques [10%]**

Tools/Software used:

- RapidMiner
- Tableau
- Power BI