EXCEL DASHBOARD REPORTING AND DATABASE ANALYSIS

In today's business world, data is easier than ever to collect and store. While the management of this big data is increasingly important to the decision makers in the organization, big data is ever more difficult to analyze.

This certificate program brings together the computational, analytical and communication skills necessary to discover and implement data-supported solutions to business questions.

Analytics professionals or data scientists are invaluable to an organization's success. They have the unique combination of computational, analytical and communication skills necessary to discover data-supported solutions to important business questions, from an ever-increasing wealth of data.

This certificate program brings together statistics, analysis and both written and oral communication skills through an applied approach to instruction and learning. Analysis of the volume, velocity and variety of big data provides business managers with knowledge about their businesses which can be translated into effective decision-making and improved business performance.

The certificate introduces students to the tools needed to analyze large datasets in order to make more informed business decisions. Students learn to gather and organize data for more effective analysis and how to communicate their analyses in a clear and concise manner. Topics include:

- Importing data into an analytics software package
- Performing exploratory graphical and data analysis
- Building analytics models using tools such as multiple regression and decision trees
- Finding the best model to explain correlation among variables
- Learning how to control and assess data variability to better meet customer requirements

Who should participate?

- Business, marketing, and operations managers

- Data analysts or professionals in any field who deal with large amounts of data
- Financial industry professionals
- Small business owners

Analytics Basics

In this module, students will be introduced to the basics of analytics by learning key terms, concepts and knowledge areas and the use of SAS JMP analytics software. At the end of this module, students will be able to:

- Navigate JMP Software
- Input data from various spreadsheets and databases
- Perform graphical exploratory analysis
- Compare two or more groups
- Analyze paired data
- Use regression analysis to quantify the relationship between two variables
- Create and analyze a designed experiment

Big Data Tools

In this module, students will learn how to use big data tools to understand correlation among many different variables. At the end of this model, students will be able to analyze large datasets and build analytical models to predict future performance using the following multivariate tools:

- Neural Networks
- Partial Least Squares
- Principal Component Analysis
- Decision Trees
- Multiple Regression
- Cluster Analysis
- Discriminant Analysis

Process Control and Capability

In this module, students will learn how to evaluate if a process is stable and its ability to meet customer requirements. Students will also learn how to evaluate a measurement system's performance and variability. At the end of this module students will be able to use the following tools:

- Process Control Charts
- Process Capability Analysis
- Measurement Systems Analysis

Project

As a final requirement of the certificate, students will apply the concepts and techniques learned throughout the course to a case study project. The project will incorporate the use of a current data problem that the student would like to solve which will be approved by the instructor. Guidance in completing project milestones is done throughout the program.

Through examples, case studies, and discussion in buzz groups, participants will learn how organizations are using big data effectively in fields as diverse as marketing, retailing, branches of government and healthcare. The program will encourage participants to apply these concepts in the context of their own organizations—including defining problems that could benefit from the application of big data concepts, brainstorming sources of data, and designing experiments to collect and analyze data in ways that are acceptable to customers—to create new value.

Advanced Excel

- Basic principles about data & data entry
- Data cleansing, manipulations,
- Data conversion and management
- Presentation techniques by using tables
- Simple, trend line and dual scale charts
- Excel common features and functions
- Nested formulas, database formulas
- Conditional formatting
- Data validation and it's rules
- Imports and exports
- Connectivity with other databases
- Pivoting the huge data as summaries
- Advanced filtrations
- Workbook linking and hyperlinks
- Dynamic presentations on multiple workbooks
- Report automations
- Spreadsheet modeling and protections
- Dashboard reporting
- Keyboard shortcuts.

MS Access / SQL

- Relational database designing :
  - Determining the inputs
  - Creating simple and lookup tables
  - Defining a primary key
- Table relationships :
  - Understanding of table relationships
  - Viewing / editing the relationships
  - Creating Inner, Outer and Equal joins
- Importing and Exporting Records :
  - Import Excel, Text and CSV files into Access
  - Work directly on linked files
  - Export records as Excel, Text and CSV formats
  - Creating DTS (Data transformation Services)
- Action and Multi-Table Queries :
  - Understanding the type of queries
  - Creating select, make table, append, update, cross-tab, insert, delete and union queries
  - Creating user defined parameters in queries
  - Using of nested and database related formulas
- Forms and Macros (for Access only) :
  - Creating and designing attractive forms
  - Automation of the whole process by using Macros and simple VBA procedures.
  - Update database through email replies.
- Working with VBA Developer objects:
  - Using Combo box, Text box, Date picker etc.