

Topic

No. of Hrs.

Introduction to Business Metrics **10**

Now that we have identified the key drivers of revenue of an organization, we shall delve into those vital *nodes* in details. These vital nodes are nothing but some critical numbers that help companies figure out how to survive and thrive. Inside every pile of data is a vital metric trying to get out! We shall take examples of applications of these numbers for each sector that we have covered in Business Process.

Learning Outcome:

After completion of this session, participants would be able to

1. Familiar the nuances of Balance Sheet and Income Statement
2. Build a checklist to evaluate the business model
3. Demonstrate capability of workaround those metrics i.e. moulding the numbers based upon business phase / industry.

Introduction to Data Analysis in Excel **10**

The use of Excel is widespread in the industry. It is a very powerful data analysis tool and almost all big and small businesses use Excel in their day to day functioning. This course is designed to give you a working knowledge of Excel with the aim of getting to use it for more advance topics in Business Statistics.

Learning Outcome:

After completion of this session, participants would

1. Be able to use various advanced level functions like VLOOKUP, HLOOKUP, IF, SUMIFS
2. Be familiar with various graphs and charts in Excel
3. Be able to construct Pivot table
4. Be able to use Excel Solver and Excel VBA (writing user defined function)

Introduction to Applied Business Statistics* **15**

The ability to understand and apply Business Statistics is becoming increasingly important in the industry. A good understanding of Business Statistics is a requirement to make correct and relevant interpretations of data. Lack of knowledge could lead to erroneous decisions which could potentially have negative consequences for a firm. The session begins with the notion of descriptive statistics, which is summarizing data using a few numbers. Different categories of descriptive measures are introduced and discussed along with the Excel functions to calculate them. The notion of probability or uncertainty is introduced along with the concept of a sample and population data using relevant business examples. This is followed by hypothesis testing and applying the concept of inferential statistics to Business.

Learning Outcome:

After completion of this session, participants would be

1. Able to compute Summary Statistics using Excel
2. Familiar with probability concepts (including baysian probability) and use Excel to calculate probabilities.
3. Familiar with various probability distribution and application of them in business
4. Familiar with various hypothesis testing and application of them in business
5. Apply various Excel in-built and / or user defined functions to perform various hypothesis testing like 't' Statistics, ANOVA, Wilcox-Rank, Mann-Whitney, Kruskal-wallis etc.

Guide to R Programing **15**

This session introduces R programing language; the numero-uno choice of Data Scientist. The session would impart all the necessary trick and tracs required for managing and manipulating Data in R enviornment. The session also let the participants introduces to IDE for R i.e. RStudio.

Learning Outcome:

After completion of this session, the participants would be able to

1. Write user defined functions in R
2. Import and Export data sets in various formats
3. Perform data cleaning and manipulation, both continuous as well as categorical i.e. detecting outliers, missing values and imputation

Regression and Classification for Business Applications*

25

Regression Analysis is perhaps the single most important Business Statistics tool used in the industry. Regression is the engine behind a multitude of data analytics applications used for many forms of forecasting and prediction. For predicting continuous set of data, we use linear regression. However, for categorical set of data we use various classification algorithms. Logistic and tree based methods are being most important of them.

Learning Outcome:

After completion of this session, participants would be able to

1. Identify and remove the outliers in the Data Set
2. Detect Multicollinearity amongst independent variables and tackle that issue.
3. Able to build a multivariate linear regression model and predict
4. Able to perform diagnostic checks about model's efficiency and accuracy (i.e. calculate R-squared)
5. Able to build a classifier using excel and logistic regression for predicting categorical data.
6. Build a confusion matrix for measuring accuracy and precision of a classifier.
7. Pruning of Tree, Measuring r^2 in tree based methods, Gradient boosting, Bagging and ensemble methods, Precision Vs Recall

Tools and Techniques of Data Visualization and Communication*

25

Data Visualization characterizes the skill of ability to communicate practical implications of quantitative analyses to any kind of audience member. Even the most sophisticated statistical analyses are not useful to a business if they do not lead to actionable advice, or if the answers to those business questions are not conveyed in a way that non-technical people can understand. And needless to mention, it all starts with 'Asking the right Question' at the inception!!

Learning Outcome:

After completion of this session, participants would be able to

1. Design an effective Dashboards for a specified Departments using Excel
2. Have a grip on Tableau Worksheet functionalities.
3. Perform Data Manipulation and custom calculation in Tableau
4. Tell Stories with Data
5. Design effective slide presentations to showcase your data story
6. Deliver compelling business presentations

All sessions will be lab based.

* Will be complemented by Case studies using R / Excel as and when required