Add On Skill Enhancement Certification Training Program on Business Analytics using Data Visualization and Python

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COORDINATORS

Dr. Mamta Gupta

Dr. Sarita Chaudhary

Organized by

Department of Management

MAHARAJA SURAJMAL INSTITUTE

Affiliated to GGSIP University & NAAC 'A' grade accredited Rated as category 'A+' by SFRC & 'A' by JAC
Govt. of NCT of Delhi Approved by BCI & AICTE and Recognized U/s 2(f) of UGC Act
C-4, Janak Puri, New Delhi-110058
Website: www.msijanakpuri.com

MAHARAJA SURAJMAL INSTITUTE

Maharaja Surajmal Institute is affiliated to Guru Gobind Singh University, New Delhi, approved by BCI & AICTE, NAAC 'A' grade accredited, rated as Category 'A+' by SFRC & 'A' by JAC Govt. of NCT of Delhi. It is also recognized U/s 2(f) of UGC Act, New Delhi. The Institute was established in the year 1999. MSI is a self-financing, quality conscious and the oldest institute of GGSIP University and continues to be a preferred destination for students aspiring to excel in various fields of MBA, B.A. LL.B., BBA LL.B., BBA, BBA (B&I), BCA, B.COM (Hons.) and B.Ed.

MSI has distinguished itself as one of the premier institutions in the country. Founded through the dedicated and altruistic efforts of educators and social activists, the institution is driven by a profound concern for the standards of education. Their unwavering commitment is geared towards enhancing the quality, content, and overall direction of education, reflecting a resolute determination to uplift and improve the educational landscape.

DEPARTMENT OF MANAGEMENT

The Department of Management has been dedicated to achieving excellence in management education and upholds the highest standards for educational quality. It has state of the art infrastructure with well stacked fully computerised Wi-Fi enabled Library, computer lab and presentation resources. Emphasizing practical experience and theoretical understanding, the department prepares students for diverse roles in various industries.

Faculty members provide insights into current management practices and emerging trends. Its goal is to develop future leaders capable of navigating complex business environments and driving organizational success through innovative strategies and effective management techniques. Since its inception, the department has been the most preferred option for students applying to GGSIP University's management institutes.

TRAINING PROGRAM

The skill enhancement add-on certificate Business Analytics Program will cover various aspects of data visualization using Power BI and Python. It will be a comprehensive program designed to equip the trainees with the necessary skills and knowledge to impart and utilize the knowledge & skills related to data in the real world. The program will be conducted in a workshop-style format, with a mix of lectures, hands-on exercises, case studies and live projects to ensure that participants have a thorough understanding of the concepts.
The training module has been planned in alignment with the syllabus of the MBA program. The program will be conducted by experienced trainers and also inculcate the sessions to meet the specific needs of the university's curriculum.

Duration of the program: 15 weeks

Number of sessions: 15

Duration per session: 2 hours (2hrs for each section of MBA 3rd Sem)

Target Audience: MBA students 2nd Year (Batch 2023-2025)

Scope of the program: Data visualization training in Power BI and Python covers a broad range of skills. Power BI training includes basics of creating interactive reports, dashboards, data modeling, and advanced features like custom visuals and performance optimization. Python training focuses on using libraries for diverse plotting techniques, interactive visualizations, and handling geospatial data. Combining both tools allows for enhanced data analysis and visualization, leveraging Python's advanced capabilities and Power BI's interactive features. This training is valuable for business intelligence roles, data science, and analytics, offering tools for comprehensive data insight and reporting.

Resource Person: Ms. Priya Chetty- Co-Founder Project Guru
Ms. Riya Jain-Senior Analyst, Project Guru

Pedagogy :

- Live Projects
- Case studies
- Assignment problems
- Feedback and assessment

Certification: All the participants will be provided with a certificate from Project Guru after successful completion of the Training Program.

Registration Fees: Rs. 300 per student.

DETAILED SESSION PLAN

Session No	Title	Goals	Aspects Covered
1	Introduction to Power BI	Understanding basics	• Introduction to Business intelligence (BI) and use cases • Tools for BI • Data warehouse concept • Power BI introduction • Why Power BI • Power BI components • Building blocks and architecture of Power BI • Power BI vs Tableau vs Qlik View • Introduction to Power BI desktop, its installation and setup • Navigating through Power BI interface • Key features • Process of creating reports
2	Data loading in Power BI	Working with dataset	• Data sources in Power BI • Using different files as data sources like pdf, excel or csv • Working with different databases like SQL, OData and others • Introduction to power query editor and working with it
3	Data transformation in Power BI	Combining and shaping data	• Shaping data with power query editor • Formatting data and its transformation • Merge and append query • Grouping of data, transpose, and fill • Pivoting and unpivoting of data • Custom columns and conditional columns • Replace data from tables • Splitting column values • Moving columns and sorting data • Detecting data type, counting rows, and reversing rows • Promoting rows as column headers

Session No	Title	Goals	Aspects Covered
4	Data modelling and DAX in Power BI	• Understand the concept of data modelling • Working with DAX	• Introduction to relationships and creating them • Cardinality • Cross filter detection • Use of inactive relationships • DAX introduction and why its used • DAX syntax • DAX functions • DAX Context • Columns calculation using DAX • Measures of using DAX • Tables calculation using DAX • Learning about table, information, logical, text, iterator • Time intelligence functions (YTD, QTD, MTD)
5	DAX functions in Power BI	• Analysis with DAX • Application of DAX	• Cumulative values, calculated tables, and ranking and rank over groups • Date and time functions • Identifying poor measures, relationships, and visuals • DAX advanced features • Application of DAX
6	Data visualization in Power BI	Creating effective visualization	• Power BI data visualization introduction • Understanding Power View and Power map • Data visualization techniques • Page layout and formatting • Power BI desktop formatting • Formatting and customizing visuals • Visualization interaction • Custom visualization • Top-down and bottom-up analysis • Drill down, drill trough • Page navigations and bookmarks • Selection pane to show/hide visuals • Comparing volume and value based analytics • Combination charts

Session No	Title	Goals	Aspects Covered
7	Advanced visualization techniques in Power BI	Exploring advanced visualization techniques	• Filters • Slicers • Use of hierarchies in drill down analysis • Theme for corporate standards • Power BI template for design reusability • Performance analyzer in Power BI • Sync slicers • Tooltips and custom tooltips • Tables and matrix • Conditional formatting on visuals • Scatter chart, waterfall chart, KPI, Donut chart • Geographical data visualization using maps
8	Power BI service, collaboration and data refreshing in Power BI	• Power BI service collaboration features understanding • Managing data refresh	• Introduction to Power BI service and workspaces • Dashboard • Creating and configuring dashboard • Dashboard theme • Reports vs dashboard • Building workspace apps, assigning roles and organizing content • Sharing reports and dashboards • Managing collaboration tools and permissions • Setting up automatic data refresh • Managing refresh failures

Session No	Title	Goals	Aspects Covered
9	Introduction to KNN, PCA and IBM SPSS Modeler	• Understanding basics • Introduction to KNN and PCA concepts	• Concept of KNN and its application • Problems which KNN can solve • Concept of PCA and its application • Problems which PCA can solve • Introduction to IBM SPSS modeler • IBM SPSS modeler versus IBM SPSS • Use of IBM SPSS modeler • Installing IBM SPSS modeler
10	Performing KNN	Working with KNN	• Data preparation steps and data quality ensurance • Performing KNN analysis • Configuring parameters • Interpreting results
11	Performing PCA	Working with PCA	• Understanding key components of PCA • Preparing data • Performing PCA • Interpreting co • Modifying PCA results by changing components
12	Introduction to Google Data studio	Understanding the basics of data studio	• Introduction to google data studio and why to use it • Understanding google data studio interface • Understanding data: dimensions and metrics • Types of dashboards • Connect data sources with studio • Visualize data with geo maps, tables, and scorecards • Using date range controls and working with date and time • Adding pages

Session No	Title	Goals	Aspects Covered
13	Visualization in Data studio	• Connecting data • Sharing reports and manipulating them	• Filtering controls and how to work with them • Report layout in data studio and styling them • Creating calculated fields • Sharing dashboard • Creating dashboard based on templates • Creating dashboard using google sheet based data • Viewing and editing data studio reports • Add, remove and restore data source and change the data source • Copy of data studio report, deleting it and restoring it • Grouping data • Creating pdf report
14	Introduction to Python	• Get familiar with Python interface • Uses of Python • Analysing simple to complex management datasets with Python	• Python interface • Python terminologies • Importing dataset • Introduction to basic concepts like variables, data types, basic operations • Conversion of data types • Working with lists, tuples, sets, and dictionaries • Python operators • Conditional statements -if-else, if-else, while, for • Data cleaning and processing: handling missing values, encoding categorical variables
15	Predictive Modeling – Simple/Multiple Linear Regression	Build and evaluate basic model	• Overview • Descriptive statistics: mean, median, mode, standard deviation, etc. with groupby • Correlation analysis • Exploratory data analysis: checking stationarity, multi collinearity • OLS model fitting • Evaluation metrics – MSE, R squared

RESOURCE PERSON

PRIYA CHETTY

Priya Chetty is the Co- Founder of Project Guru, a research and analytics firm based in Gurugram, New Delhi since 2012. Over the last 10 years, she has trained over hundreds of researchers write and publish their papers using a range of research tools like SPSS, STATA, Meta- analysis and NVIVO.

She has worked with English literature, management, education, economics and social science related concepts. She has been associated with aspiring researchers. She has been managing Prect Guru's You Tube channel, where she regularly provides knowledge about research tips, data analysis and machine learning.

RIYA JAIN

Riya Jain is a Senior Analyst at Project Guru, a research and analytics firm based in Gurugram, New Delhi since 2012. She holds a Master's degree in Economics from Amity University (2019).

Over 4 years, she has worked on various research projects using a range of research tools like SPSS, STATA, VOSViewer, Python, EVIEWS and NVIVO. Her core strength lies in data analysis related to Economics, Accounting and Financial Management.