CDSA 104 (Skill Component)

Sample Topics are given below-

- ✓ Introduction to Data Science, Data Science Components.
- ✓ Data Manipulation and Visualization.
- ✓ Tools for Data Science, Challenges of Data Science Technology
- ✓ Structured and unstructured Data, Data Science & Python, Data Analytics.
- ✓ Types of Data Analytics, Role of Data Analytics, Data analytics methods and techniques.
- ✓ Brief Overview of data analysis tools using Python (Jupyter Notebook, pandas and Bokeh)
- ✓ Real World Applications of Data Science
- ✓ Brief Introduction to data science tools (Mathematical Computations with MS Excel)
- ✓ Formatting and Data Analysis in Excel.
- ✓ Formulas, Functions, Logical and Lookup Functions in MS Excel
- ✓ Presenting Data with Charts in MS Excel
- ✓ Data preparation in MS Excel (Importing data, data validation, Filtering, Sorting, etc.)
- ✓ Advance Excel- A Tool for data analysis (Data analysis using MS excel, i. e. Rank and Percentile, Correlation, etc.)
- ✓ Introduction to Statistical Package for the Social Sciences (SPSS)
- ✓ Basics of R programming
- ✓ R programming ([The Terminal, Working with Vectors, Sub-setting Vectors - the magic "[]", Other Useful Functions, R Syntax, Loops in R)
- ✓ Qualitative Variables (Creating and using categorical variables in R)
- ✓ Quantitative Variables (Creating and using continuous variables in R)
- ✓ Visualizing Quantitative Data in R.
- ✓ Bivariate Data in R, Data Frame in R
- ✓ Importing and Exporting Data in R, Manipulating Data in R
- ✓ Working with multiple variables in R
- ✓ Visualizing Data in R
- ✓ Basics of Python (Conversing with Python, Terminology: Interpreter and compiler, The building blocks of programs)
- ✓ Programming with Python (Variables, expressions, and statements)
- ✓ Conditional execution in Python, Iteration in Python
- ✓ Functions in Python
- ✓ Strings in Python, Lists in Python
- ✓ Dictionaries in Python
- ✓ Tuples in Python