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TERM 1

1. Adv. Excel

- Statistical Analysis Using Ms-Excel
- Sharing and Maintaining Workbook
- Formulas
- Function
- Advanced Chart Features
- Presenting Data Visually
- Data Analysis
- Macros
- Forms
- Sorting
- Filtering
- Calculations
- Data Storage
- Data Analysis 18 stats Formulas Eg. Histogram, T-Test, Z-Test, Regression etc....
- V-Lookup
- H-Lookup
- Pivot Table
- Goal Seek
- Scenario
- Data Tables
- Tool Pack

2. Programming in C

- Basics of C
- Variables and Data Types
- Operators
- Conditional Constructs
- Iteration Construction
- Arrays
- Pointers
- Functions
- Parameterized Functions
- Strings

- Structures
- File Handling

3. C++ Programming

- Object Oriented Concepts and C++
- Basics of C++
- Flow control Statements
- Function, Pointers and Arrays
- Function Overloading
- Inheritance
- Polymorphism
- Stack
- Queue
- Linked Lists
- Exception Handling

4. SQL

- Introduction to My SQL as an OS Database
- Installing and Configuring My SQL
- Using My SQL
- Implementing SQL Queries Using My SQL
- Using Joins
- Using Basic Functions in My SQL
- Controlling and Managing Database
- Transaction Management and Globalization
- Performance Optimization and Scalability
- Replication, Data Backup, Portioning
- Storage System

5. Python

- Python - Overview
- Python - Environment Setup
- Python - Basic Syntax
- Python - Variable Types
- Python - Basic Operators
- Python - Decision Making
- Python - Loops
- Python - Numbers
- Python - Strings
- Python - Lists
- Python - Tuples

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- Python - Dictionary
- Python - Date & Time
- Python - Functions
- Python - Modules
- Python - Files I/O
- Python - Exceptions
- Python - Classes/Objects
- Python - Reg Expressions
- Python - Generators
- Python - Decorators
- Python - CGI Programming
- Python - Database Access
- Python - GUI Programming
- Python - Serialization and Closure
- Python - Code Introspection and Testing
- **Project**

6. Emerging Job Areas- SMAC (Social-Mobile-Analytics-Cloud)

- Introduction to SMAC
- SMAC (contd)
- SMAC-Social
- SMAC-Mobile
- SMAC-Analytics
- SMAC-Cloud
- Smac - Challenges and Solution
- Smac Implementation
- Social Media - Overview
- Online Networking
- Social Media Marketing
- Impact of Social Media on Business
- Emerging Trends in Social Media
- Social Media - User Challenges
- Introduction to the Mobile Market
- Mobile Technology-Growth and Reach
- Mobile Platforms and Applications
- Mobile Apps Market
- Impact of Mobile-Mobility
- Analytics
- Digital Footprint
- Categories of Digital Footprint

- Big Data Analytics
- Analytics in Industries
- Emerging Trends in Analytics
- Analytics-Challenges
- Cloud Computing
- Cloud Computing Overview
- Cloud-Deployment Models
- Cloud-Service Models
- Impact of Cloud Computing on Business
- Emerging Trends in Cloud Computing
- Cloud Computing-Challenges

7. Large Data Management (Mongo DB)

- Intro to NoSql and its types, Cap Theorem, Partition
- MongoDB Database, Scaling, Indexing, DataModels, Data Types
- Installing MongoDB, CRUD Operation
- Dollar, or Operator Regex, Cursor, Pagination, positional array modification
- Indexing and Types, Sort Order
- Aggregation
- Index(Creation, rebuild, remove, modify), Geospatial Indexing, Proximity Queries
- Demo on Index and Aggregation
- Aggregate, Pipelines
- MapReduce
- Replication(Master-slave Replication,Replica Set in Mongodb), Automatic Failover,Write Concern
- Read Preference, Blocking for Replication, Tag Set,Replica Set Deployment Strategie

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- Defining Schema using Mongoose, Ttl CollectionFeatures, Memory mapped Files
- Journaling Mechanism, Storage Engine
- Allocations, MongoDB Utilities, commands,Authentication, backup Software

- Loops in R
- Functions in R
- Data Structures
- Assigning value to data structures
- Data manipulation
- Data Visualization
- Data Visualization using Graphics in R
- Statistics for data science I
- Hypothesis
- Data sampling
- Hypothesis test
- Parametric test
- Regression analysis

8. R Programming

- Introduction to business analytics
- Business decisions
- Data science overview
- Introduction to R programming
- Conditional statements in R
- Sharding(Shard Key, Impact of Shard Keys onCluster
- Operation,Config Server Availability
- Enable Sharding for Database, Collection, shard Balanace, chunk Size, Tag Aware sharding
- Capped Collection, GridFs
- Java connectivity with MongoDB, CRUD using JAVA
- NodeJS with MongoDB

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TERM 2

9. Foundation of Big Data

Systems

- Introduction to Big Data and Hadoop Eco System
- Hadoop Ecosystem
- HDFS Architecture and Components
- HDFS and YARN
- Block Replication Architecture
- Yarn introduction
- MapReduce and Sqoop
- Small Data and Big Data
- Working with Hive and Impala
- What is Hcatalog and its uses?
- Importing Mysql And creating Hivetb
- Parquet with Sqoop
- Overview of the Hive Query
- Apache Flume and HBASE
- Pig
- Getting DataSets for Pig Development
- Basics of Apache Spark
- Spark-Architecture, Execution, and Related Concepts
- Rdd Operation
- Rdd Data Types and Rdd creation
- Running a Spark Application
- Spark Parallel Processing
- Parallel operations on Partitions
- Rdd Persistence
- Spark Algorithm
- Spark an Iterative Algorithm
- Introduction to Graph Parallel System
- Interoperating with Rdds

10. Processing Big Data

- Meet Hadoop
- MapReduce
- The Hadoop Distributed FileSystem
- YARN
- HADOOP I/O
- Developing a MapReduce Application
- How MapReduce Works
- MapReduce Types and Formats
- MapReduce Features
- Setting Up a Hadoop Cluster
- Administering Hadoop
- Flume
- Sqoop
- Pig
- Hive
- Spark
- HBase
- Composable Data at Cerner
- Biological Data Science: Saving Lives with Software
- Cascading
- Dynamic Web application development using MYSQL & PHP
- JOOMLA
- Project-Open source technologies

11. Visual Analytics With Tableau

- Introduction to Tableau and an Overview of the Different Versions
- Installing Tableau Desktop
- Understanding Tableau User Interface
- Exploring Tableau File Types
- Understanding Green and Blue Pills
- Filtering Data from Your Data Source
- The Show Me Feature

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- Crosstabs and Heat Maps
- Using Bar Stacked Bar and Side by Side Bars
- Pie Charts
- Calculations and Case Statements
- Using Calculations to Add Insight to Your Visualizations
- Create a Standard Map View
- Dealing With Map Errors
- Understanding Dashboard Actions
- Assembling Your Dashboards Into a Story
- Understanding the Importance of Using Tooltips for Your Audience
- Using a Parameter to Focus the Audiences Attention
- Removing Clutter in Your Dashboard

12. Web and Social Media Analytics

9.1 Google AdWords

- Adwords Account Structure
- Keywords Match Types
- Creating Text and Search Ads
- Display Targeting
- Bid Methods and Bid Modifiers
- Adwords Tools
- Optimizing Your Account

9.2 AdWords Display Advertising

- Introduction to Display
- Campaign Settings
- Advanced Display Targeting
- Display Text Ads

9.3 Mobile Advertising

- Mobile Ads for Business
- Ads Across the Networks
- Measurement
- Measurement Continued

9.4 AdWords Search Advertising

- Introduction to Search
- Keywords and Match Types
- Creating Search Ads
- Advertising Metrics
- Quality Score

9.5 AdWords Video Advertising

- Youtube Advertising Basics
- Trueview Ads
- Overview of Trueview Ads
- Reservation Video Ads
- Strategies for Youtube Video Content

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13. Certified SAS Base

Programmer Certification

Training

- Sas Installation and Access
- Opening Sas University Edition
- Sas Input Statements
- Data Step Statement
- Combining Datasets
- Delete and Group Observations
- Modifying Variable Attributes
- Access Excel Workbook
- Export Sas Dataset
- Proc Contents
- Proc Datasets
- Proc Sort
- Proc Print
- Proc Means
- Proc Freq
- Proc Univariate
- Proc Report
- Loop Statements
- Data Type Conversion
- Scan Function
- Date Time Functions Example
- Sas Arrays
- Errors in Sas Program
- Logical Errors
- Syntax Errors
- Data Errors