# Business Intelligence and Reporting

**Pre-requisites:**

Participants joining the program should:

* Have worked in any programming language during college
* Have knowledge on fundamentals such as programming logic and techniques, basic data structures and algorithms
* Can communicate and understand spoken and written English

***Indicative program structure (9 weeks – full time – remote)***

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| **Module** | **Duration Week(s)** | **Topics / Areas Covered** |
| Foundation: Windows Operating System & Networking Basics with DB Concepts | 1 | Working with Windows OS, Windows Concepts, Windows System and Windows GUI and Desktop Ops, Windows System Configuration Basics, Common Applications and Command Line Operations, Processes and File Operations, Using Text Editors, Work with User Environment, Basic Network Operations, Printing Configuration and Commands, Local Basic Security Principles, and basic administration, Windows CLI / PowerShell Basics  RDMBS and Database Concepts, Database Design, Define Relational Model and SQL, DDL, DML, Transaction Control Basics, Fundamentals of Normalization, Entity – Relationships, Role and importance of DBA and production support  Networking Basics: Types of networks, OSI Referential Model, TCP/IP Model, IP addressing, Subnetting, explore: IPv4/IPv6 configuration Configure IP and Interfaces, Network bonding configuration and Network Configure |
| Understanding DWH Eco System | 0.5 | What is Data Warehousing, Understand Data Warehousing techniques to solve real problems, DWH System Design and structure, understanding ETL and Related Tools, DWH Life Cycle, DWH, Architecture with MSBI, DWH Real time scenarios for different domains, General ETL tools in market, Introduction to BI tools and Analytics Lifecycle, Data Mining / Data Lakes Basics, Understanding Data Design |
| Oracle Architecture and Key Components | 0.5 | About Oracle 11g, Oracle Software Installation Basics, Planning Your Installation, RAW file system, SAN, IOPS, RAID, Configuring Oracle on Linux, Considerations for Installing Oracle Database Software and Types, Understanding Storage Structure and Creating Database Types, Database Configuration Assistant, DBCA, CDB, SQL\*Plus |
| Introduction to SQL / PL/SQL | 1 | PL/SQL Fundamentals, Variables & Datatypes, writing in SQL with PL/SQL, Program Structures, Datatypes, Cursors and Parameters, Procedures and Functions, Cursors and Triggers and Improving PL/SQL Performance, SQL Scripts and Functions, Using PL/SQL Compiler and Managing Remote Dependencies. Elements of SQL, Using SQL Interfaces, Data Restrictions using SQL Statements, Pseudo and Sorting Data, Tables and operators, Use of DDL, DML, CRUD operations, Queries and Joins, Transactions Management Rollback Commands, Performing advanced SQL queries and SQL99 syntax., Developing complex SQL\*Plus reports and using SQL\*Plus scripts and Reports, Overview of PL/SQL, Blocks and Identifiers, Variables and expressions, Deployment of SQL Functions in PL/SQL, Data Manipulation in the Server using PL/SQL, Understand the SQL Cursor, Restricting and Sorting Data, Using Single-Row Functions to Customize Output, Conversion Functions and Conditional Expressions, Work with Functions/ SELECT/TRUNC/MOD/WHERE and so on. Describe implicit and explicit data type conversion Joins, Queries and Sub Queries, Operators, DML, and Transactions. DDL, Data Dictionary Views and Structures. Views and Schema, Controlling User Access and System privileges |
| Advanced Oracle DB and SQL Commands | 1 | Control Structures, Conditional processing using IF / CASE / Loops / Data Types / Records, Indexing and Working with Cursors, and Triggers  Exception Handling, Understand and work with Exceptions and Errors in PL/ SQL Working and writing Stored Procedures and Triggers, create a Layered Subprogram Design, Develop Packages, Develop Business Application Scenarios for Implementing Stored Procedures and Triggers on DML / DDL |
| Identity Management Overview & Concepts with Oracle HTTP Server (OHS) | FMW / IAM Overview, Oracle Identity Governance and Access Overview, Federation, OVD / DIP / SSO / OOID / OUD, Access Management and Architecture, OID Setup / Installation, Repositories, JVM, OID, RCU, File System Users and Groups with Troubleshooting, OHS Overview / OHS Architecture, Installation, Configuration and Deployment, Understanding File Systems |
| OAM – FMW (OBIEE) Integration, DR, and HA, SSO, and Cloning | 1 | OBIEE Integration Architecture, Policy Config, OID / OAM Asserter / Integration, Enable SSO, DR and HA Overview, Cloning / Failover / Standby / Switchover / LB Considerations, Failover Migration, HA Data Tier, RAC Data Guard, GTM / LTM, Clusters and Cluster Messaging, HA from DB to APP Tier, Deploying SOA / OR / OAM/ OID HA, IDAM Filesystem, and Key Files, Identity Management and Identity Store, Configuration Management and Integration with Policy, Auditing and Monitoring, Cloning Overview, Binary Config and Scripting, Deep Dive into Scripting, Cloning Movement Plan, Cloning 12.2.13 |
| Introduction to using SSIS | 1 | Introduction to SSIS, SSIS Architecture, The SSIS Tools Package and The Solution Explorer Window, SSIS Package Designer, Management Studio, SSIS Tasks and Task Objects, Looping and Sequence Tasks, Script Task (.NET) Data Flow Task. Working with Containers, Tasks / Sequence / Groups For and ForEach Loops, Understanding Data Flow, Sources, Destinations, Variables, Parameters, Expressions, Data Types, Joining Data / Transformation, DWH with SSIS, DWH Concepts and Architecture, Dimensions table data loading, Fact table data loading, Error and Debugging in SSIS, Events, Data Viewers, Breakpoints, SSIS Administration, Deployment, Configuration, Security, Manually SSIS package Scheduling, Using Excel and Disparate Data Types for Analytics in SSIS |
| Reporting with SQL Server Reporting Services | 1 | Reporting Services Architecture & Terminology, Creating Reports, Deconstructing Reporting Services, Shared Data Sources, Calculations and Formatting, Creating Expressions, Using the Global Collection, Grouping and Sorting, Interactive Sorting, Creating Drill-Down Reports using Report Parameters, Creating Drop-Down Parameters, Multi-Valued Parameters, Debugging, Creating Basic Matrix Report, Subtotals, creating a Basic Chart, Exploring the Charting Possibilities, Reporting Services Security, OLAP Modeling, Modeling source schemas—stars and snowflakes, Understanding dimensional modeling— Dimensions (Type 1, 2, or 3) or rapidly changing, Understanding fact (measures) and cube modeling |
| Business Intelligence and Visualization with Power BI | 1 | Overview of Power BI Architecture, Overview of Power BI services, Understand Power BI Desktop, and its components, connect to data sources, transform data to include in a report, build relationships between different tables, Introduction to interactive visuals & its usage, Matrices, and tables, explore reports/dashboards, Report/Dashboard filter/Slicers, Page layout and formatting, Collaborate and share in Power BI, Licensing model in power bi, Modelling with Power BI, M-Query, Calculated columns and measures, combine data from multiple sources, Understanding Data Refresh, Personal/Standard Gateway, Introduction to DAX, DAX calculation types, DAX functions, Using variables in DAX expressions, Table relationships and DAX, DAX tables and filtering, Custom visuals using typescript and the Power BI Developer Tools, Introducing Power BI Mobile, Understanding of Power BI architecture, Introduction to content packs, security and groups, creating workspace & managements, Optimized existing Power BI model, Provide end to end solutioning and Estimation guidelines |
| Capstone Project | 1 | Combine all knowledge and skills and complete the capstone as a summative final evaluation – DWH Case Study |