



## **Course 271: Data Warehousing: Fundamentals and Design (4 days)**

### **Course Description...**

In this course students study the basic issues involved in planning, designing, building, populating, and maintaining a data warehouse. Tasks include business modeling, entity relationship diagramming using STAR techniques, dimensional and physical modeling, and warehouse meta data management.

### **Learning Objectives...**

- Describe methods and tools for accessing and analyzing warehouse data
- Define the decision-support purpose and end goal of a data warehouse
- Explain the implementation and organizational issues surrounding a data warehouse project
- Describe the various technologies required to implement a data warehouse
- Describe the role of meta data in data warehouse design and strategies to define and maintain meta data
- Use entity relationship diagrams to transform the business model into a dimensional model
- Define the process of designing a data warehouse database model
- Transform the dimensional model into a physical data design
- Explain the central concepts of dimensional data models
- Analyze and transform business requirements into a business model

### **Who should attend**

Audience includes Project Managers, Data Warehouse Administrators, Database Administrators, and key personnel involved in the data warehouse project.

### **Prerequisites...**

No specific prerequisites other than basic familiarity with a relational database and SQL.

**See next page for a detailed course outline...**



## **Course Outline**

### **Introduction and Overview**

Course Objectives

## **Unit 1: Business Intelligence and Data Warehousing**

Unit Objectives

### **The Road Map to Business Intelligence (BI)**

#### **Data Warehouses Compared with Online Transaction Processing (OLTP)**

- Management information systems and decision support systems (DSS)

#### **Business Drivers for Data Warehouses**

- Typical uses of a data warehouse

## **Unit 2: Defining Data Warehouse Concepts and Terminology**

Unit Objectives

### **Common Data Warehouse Definitions**

- Data warehouse properties and characteristics

### **Warehouse Development Approaches**

- Components of data warehouse design and implementation
- Components of a data warehouse

### **Data Warehouse Compared with Data Mart**

- Dependent and independent data marts

## **Unit 3: Planning and Managing the Data Warehouse Project**

Unit Objectives

### **Managing Financial Issues**

- Obtaining business commitment

### **Gathering Business and User Requirements**

- Evaluating the warehouse project

### **Implementation Processes and Requirements**



## **Unit 4: Defining the Business and Logical Models**

Unit Objectives

### **Describing the Enterprise Level Strategic Analysis Tasks**

- Defining components of business modeling

## **Unit 5: Creating the Dimensional Model**

Unit Objectives

### **Describing Attributes of a Star Model**

- Identifying fact tables and their attributes from business measure entities

## **Unit 6: Creating the Physical Model**

Unit Objectives

### **Translating the Dimensional Model into a Physical Model**

- Discussing the architectural requirements for the data warehouse

## **Unit 7: Storage Considerations for the Physical Model**

Unit Objectives

### **Explaining Data Warehouse Sizing Techniques and Test Load Sampling**

### **Describing Data Warehousing Indexing Types and Strategies**

## **Unit 8: Strategies for Extracting, Transforming, and Transporting**

Unit Objectives

### **Outlining the Extraction, Transformation, and Transportation Processes for Building a Data Warehouse**

- Identifying extraction, transformation, and transportation issues

## **Unit 9: Refreshing Warehouse Data**

Unit Objectives

### **Capturing and Applying Changed Data**

- Batch load requirements



**Limitations of Methods in Applying Change**

- Purging and archiving data

**Unit 10: Leaving a Metadata Trail**

Unit Objectives

**Defining Warehouse Metadata**

- Developing a metadata strategy
- Examining types of metadata

**Metadata Management Tools**

- Common warehouse metadata

**Unit 11: Managing the Data Warehouse**

Unit Objectives

**Managing the Transition to Production**

- Managing growth

**Managing Backup and Recovery**

**Identifying Data Warehouse Performance Issues**

**Unit 12: Analytical Capabilities**

Unit Objectives

**Defining Business Intelligence (BI)**

- Understanding the categories of BI and their use within the data warehouse

**Unit 13: Summary**

Next Steps...

*Please contact your ROI representative to discuss course tailoring!!!*