



KIMBALL  
UNIVERSITY

## **Kimball University: Course Descriptions**

### **Data Warehouse Lifecycle in Depth**

The data warehouse continues to be one of the most organizationally complex and technically interesting projects in Information Technology. This course will prepare you to implement a successful data warehouse.

#### **What you'll learn**

Based on their best selling *Data Warehouse Lifecycle Toolkit*, this course is taught by [Margy Ross](#) and [Warren Thornthwaite](#). It is packed with specific techniques, guidance and advice from the initial project planning all the way through to the final rollout and maintenance.

#### **Who should attend**

We've designed this course to appeal to all major roles on a data warehouse project, from project managers to DBAs to data modelers to application developers. Anyone who is new to data warehousing and wants to learn how to do it, or who has been through a project or two and wants to learn how to do it right.

#### **COURSE OUTLINE**

Data Warehousing Fundamentals

- Concepts and definitions

#### **Project Planning**

- Business Dimensional Lifecycle framework
- Readiness and risk assessment
- Scoping prioritization and justification
- Data warehouse project team roles and responsibilities
- Project plan development and maintenance

#### **Business Requirements Definition**

- Techniques for gathering requirements
- Requirement deliverables

## **Dimensional Modeling**

- Role of dimensional modeling
- Fact and dimension table characteristics
- 4-step process for designing dimensional models
- Denormalizing dimension hierarchies
- Surrogate keys
- Factless fact tables
- Snowflake variation
- Degenerate dimensions
- Value chain implications
- Data warehouse bus architecture & matrix to integrate dimensional models
- Conforming dimensions
- Slowing changing dimension techniques
- Dimension role-playing
- Semi-additive and non-additive facts
- Heterogeneous products
- Large dimension design considerations
- Multi-valued dimension attributes
- Transaction vs. snapshot vs. accumulating snapshot schemas

## **Technical Architecture**

- Overview: definitions and descriptions
- DW Architecture
- Models, Levels of Detail and the Arch. Plan Doc.
- Common Components and Services
- Back Room
- Staging area considerations
- Front Room
- Data warehouse user types
- Ad Hoc (multi-pass; drill-across; date math, etc.)
- Standard Reporting
- Data Mining
- Meta data repository
- Contents
- Standards—XML
- The 8-step architecture development process

## **Physical Configuration Options**

- Infrastructure
- Data Warehouse vs Data Marts
- Standalone Data Marts
- Enterprise Data Warehouse

- Conformed Data Warehouse
- The various types of Operational Data Store (ODS)
- Presentation architectures—OLAP, ROLAP, MOLAP, HOLAP

### **Product Selection**

- Architecture-based process for choosing products
- Product evaluation matrices

### **Physical Database Design**

- Standards and naming conventions
- Physical model development
- Aggregation navigation and strategy
- Index types and guidelines
- Data asset management

### **Data Staging Process**

- Data staging application design
- Staging the dimension tables
- Staging the fact tables
- Setting up data QA and process validation
- Implementing warehouse operations

### **Data Staging Techniques**

- Basic extract, transformation and load techniques
- Surrogate key creation and maintenance
- Fact table extract issues
- Building aggregates
- Speeding up the load cycle
- Integrating data from multiple sources
- Data quality and data cleansing

### **End User Applications**

- Role of end user applications
- Application template and navigation design and development
- Application roll-out

### **Deployment**

- Deployment release process—alpha, beta, roll-out
- Training and support approaches
- User support
- Documentation and the web

### **Management and Growth**

- On-going user, data, and system maintenance

- Planning for growth