

Advanced Data Modeling

Apply Advanced Data Modeling Techniques to Complex Enterprise Data Structures



2 DAYS | 14 ENGAGEMENT HOURS | ELEARNING & TEAM TRAINING AVAILABLE | 1.4 CEUs / 14 IIBA PDUs OR CDUs

Course Overview

Advanced data modeling is the practice of analyzing and representing complex business information structures that extend beyond basic entities, attributes, and relationships. It applies advanced modeling techniques to resolve difficult data patterns, clarify business semantics, and create precise enterprise data structures that support integration, analytics, application development, and business transformation.

Inteq's Advanced Data Modeling course moves beyond siloed, project-specific rules and requirements toward abstracting, generalizing, and harmonizing data requirements across the enterprise. Participants learn to recognize subtle business rules, resolve structural ambiguity, and distinguish localized requirements from patterns that should be reusable across domains and initiatives.

The course develops advanced critical-thinking and modeling judgment through abstraction and generalization, complex data patterns, enterprise requirements analysis, model flexibility, quality assurance, and a hands-on case study. The result is robust, scalable, extensible logical data models that can evolve as business needs change.

Business Impact

Enterprise data requirements rarely stay confined to a single project. When similar concepts are modeled differently across applications and business areas, organizations accumulate duplicate structures, inconsistent definitions, integration friction, and downstream redesign.

Disciplined advanced data modeling helps teams identify the underlying patterns that connect complex requirements, separate true exceptions from reusable enterprise rules, and design information structures at the right level of abstraction.

The result is stronger semantic consistency, better data quality, less rework, more effective integration, and flexible enterprise models that support modernization, ERP initiatives, analytics, application development, and transformation at scale.

You will learn

Practical capabilities you and your team can apply immediately.

- Analyze complex cross-enterprise data-oriented business rules and validate complex requirements
- Apply abstraction and generalization to create flexible data structures that adapt as requirements change
- Recognize and model advanced subtype, recursive, conditional, rules-based, and state-transition patterns
- Analyze metadata to discover reusable abstractions and enterprise-level requirements
- Develop cohesive subject areas and improve model flexibility across business domains
- Review and validate enterprise data models using disciplined quality-assurance practices
- Standardize modeling components, metadata, and naming conventions across the enterprise
- Evaluate how logical model abstractions affect physical design and systems development
- Apply advanced techniques through a complex, hands-on business case

Detailed Course Outline

Advanced techniques for cross-enterprise requirements, flexible data structures, and scalable enterprise models

Course Overview

Introduction and Foundation

- Cross-enterprise analysis
- Model-driven analysis
- Baseline data patterns
- Complex data patterns

Abstraction & Generalization

- Generalization of entity types
- Transition from metadata to data
- Static vs. dynamic entity types
- Data coupling and cohesion

Advanced Data Patterns

- Advanced subtype variations
- Multi-recursive networks
- Conditional recursions
- Rules-based entity types
- State transition rules
- Meta patterns

Enterprise Requirements Analysis

- Analyzing metadata for abstractions
- Sequencing requirements analysis
- Developing cohesive subject areas
- Developing model flexibility

Case Study

Participants analyze a complex business case and create a detailed logical data model using a variety of advanced patterns and analysis techniques. The case provides hands-on experience for applying the techniques effectively within their own organization.

Best Practices and Practical Tips

- Conceptual vs. logical data model
- Logical-to-physical transformation
- Business rule discovery techniques
- Enterprise reference models
- Putting the concepts into practice

Who Should Attend

- Data modelers and data analysts
- Business systems analysts and business analysts
- Data architects and enterprise architects
- Database and information architecture professionals
- Application, integration, and solution professionals
- Enterprise data, modernization, and transformation teams

Course Includes

- 1.4 CEUs and 14 IIBA PDUs or CDUs
- Personalized digital badge
- Certificate of completion
- Comprehensive course manual
- Templates, models, frameworks, patterns, and techniques

Anytime eLearning: 90-day access.
Team Training: live virtual or onsite.

Prerequisites and Curriculum Alignment

Participants should have a solid foundation in logical data modeling, including entities, attributes, relationships, cardinality, dependencies, business rules, and E/R modeling.

- Inteq's Logical Data Modeling course provides the prerequisite foundation
- Extends foundational modeling into abstraction, generalization, advanced patterns, and enterprise requirements analysis
- Supports enterprise architecture, integration, ERP, modernization, analytics, and transformation initiatives
- Focuses on logical business structures rather than the nuances of a specific physical database design