

## Essential Data Modeling (Instructor-Led Classroom)

### Course Description

This one-day, instructor-led, hands-on course teaches the fundamentals of modeling data requirements, a crucial skill for successful software projects. Business analysts must participate in data modeling, collaborating with data experts to elicit, specify, verify, and validate data requirements.

You'll learn and practice a step-by-step approach to elicit data requirements from other analysis models and then document the requirements in a conceptual data model and a logical data model (entity-relationship diagram). The course uses the EBG Requirements Roadmap\* to aid in navigating among the models. You'll leverage the syntax of business rules to capture data relationship optionality and cardinality. You'll specify attributes, identifiers, and foreign keys, and you'll understand data normalization and the value of using inheritance to organize complex data. You'll also learn how to verify data requirements by tracing them to related analysis models.

In this carefully designed and executed learning environment you'll actively learn through lecture, examples, discussions, exercises, and review sessions.

This course is endorsed by the International Institute of Business Analysis (IIBA®) and aligns with the IIBA's *Business Analysis Body of Knowledge (BABOK®)* applicable tasks and techniques. You'll earn 7 PDs (Professional Development hours) for initial certification or 7 CDUs (Continuing Development Units) by attending this course.

\*The EBG Requirements Roadmap is a set of interrelated models (behavioral, structural, dynamic, and control) at varying levels of detail.

### Who Should Attend

This course is valuable for business analysts, project leads, subject matter experts, business rule analysts, application analysts, data or object analysts, data architects, data administrators, and application designers—anyone who is involved in discovering, analyzing, specifying, verifying, and validating data requirements for business or technology projects. It's also useful for project managers who are responsible for planning and coordinating the work efforts to produce requirements. Familiarity with process modeling is helpful but not required.

### Course Length

1 day

### Course Objectives

- Create a conceptual data model (high-level entities with relationships)
- Construct a logical data model (entities, identifiers, and attributes)
- Trace data requirements to use cases, state diagrams, and business rules
- Explain the role business analysts play in modeling data requirements

### Course Materials

The materials include detailed text and illustrations, reusable specification templates (entity, relationship, attribute), focus questions and references.

### Course Outline

#### 1. Fundamentals of Data Modeling

- EBG Requirements Roadmap and model views
- Data model components and roles

#### 2. Conceptual Data Model

- High-level entities
- Data relationships (including cardinality and optionality)

#### 3. Logical Data Model, Part 1

- Focus questions for eliciting data requirements in analysis models and external interfaces
  - Stories, use cases, activity diagrams
  - Event-Response table, state diagram
  - Business rules, decision tables, decision trees
- Logical data model
- Many-to-many relationships
- Entities, relationships, and attributes (data dictionary)

#### 4. Logical Data Model, Part 2

- Identifiers: candidate keys, primary keys, foreign keys
- Data normalization: first, second, third normal forms
- Inheritance

#### 5. Managing Data

- Verifying data with analysis matrices
- Tracing data to other analysis requirements
- Evaluating quality of entities, relationships, and attributes using checklists