The IDMA 203 course roadmap is presented below. If interested, the educational objectives that were developed by the IDMA Education committee will be shared.

Preface: Data management at the center of system design, engineering and implementation.

Section 1: Data Strategy and System Design

- Data Strategy: The Importance of Collaboration
  - Driven by Business and IT
  - How Data Design enables Collaboration and Semantic Knowledge
  - Design Thinking for Problem Solving
    - Five Stages: Empathize, Define, Ideate, Prototype and Test
- Introduction to System Design & Architecture
- Data Architecture
  - The Importance of Data Standards and Common Data Model
  - Methods for Defining and Analyzing Data Requirements
  - Overview of Logical and Physical Structures
  - Creating Data Specifications, Unified Modeling Language and Diagrams (Structural, Behavioral, Interactive)
  - Business Object Models (BOM)
  - Insurance Capability Models
- Database Design: Which Database is Right for You?
  - Relational vs Non-Relational
  - Modern Databases: Architecture and Data Governance Best Practices
    - Artificial Intelligence (AI), Machine Learning (ML), and Robotic Process Automation (RPA)
    - Cloud Computing
    - Service Oriented Architecture
- The Role of the Data Engineer

Section 2: System Development

- System Development Life Cycle
  - Overview of Common Models: Which One is Right for You?
    - Waterfall Model
    - V-Shaped Model
    - Iterative Model
    - Spiral Model
    - Big Bang Model
    - Agile Model
- Project Management
  - Organizing Projects and Its Components
  - Planning and Managing Resources
  - Assessing, Managing, and Mitigating Project Risk
- System vs. Platform Development
Section 3: Implementation

- Data Prep, Curation, and Cataloging
  - Managing multiple Data Sources
  - Data Processing
  - Data Availability, Consistency, and Lineage
  - Promoting Data Knowledge, Collaboration, and Re-use
  - Security, Privacy, and Data Accessibility Issues
    - Who should have access to the Data?
    - Regulatory requirements (e.g. GDPR/CCPA)
  - End User Training
  - Quality Assurance, Including,
    - High Hardware Requirements for Testing
    - Data Quality
  - Common Architecture Pitfalls
    - Data Duplication, Inconsistency, Different Notions of Correctness
    - Adaptability and Application Dependence
  - Deployment and Operations, including Monitoring and Control
    - Debugging, Logging, and Error-Tracing Methods
  - Database Auditability: The Importance of Audit Trails
    - Auditing and Logging: What is the difference?
    - Balance and Controls
    - Cataloging Events
    - Organized Documentation