# Data Lakes and Warehouses for Evaluation Data Training Course

Professional Development Training Course Outline

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|---|---|---|---|
| **Category** | Monitoring and Evaluation | **Duration** | 10 Days |
| **Base Fee** | $3,000 USD | **Delivery Mode** | Online / On-site Hybrid |

## Course Introduction

In today’s data-driven world, organizations face the challenge of managing vast volumes of evaluation data efficiently. Data lakes and warehouses have emerged as critical solutions for storing, processing, and analyzing diverse datasets from monitoring and evaluation (M&E) programs. Data Lakes and Warehouses for Evaluation Data Training Course provides a deep dive into designing, implementing, and optimizing these systems to enhance decision-making, ensure data integrity, and improve reporting for social programs, public policy initiatives, and organizational evaluation frameworks. Participants will gain practical insights into cloud-based storage, ETL processes, real-time analytics, and governance strategies, equipping them to harness the full potential of structured and unstructured evaluation data.

By bridging theory and practice, this training empowers M&E professionals to leverage advanced data architectures, scalable storage solutions, and smart querying techniques for comprehensive evaluation insights. Learners will explore case studies illustrating successful deployment of data lakes and warehouses, learn to integrate multiple data sources seamlessly, and adopt best practices for security, compliance, and data quality. The course combines hands-on exercises, expert-led discussions, and real-world scenarios to ensure participants leave with actionable skills that improve data-driven decision-making and program impact measurement.

## Programme Curriculum

**Data Lakes and Warehouses for Evaluation Data Training Course**

**Introduction**

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**Course Duration**

10 days

**Course Objectives**

By the end of this course, participants will be able to:

1. Understand the fundamentals of data lakes and data warehouses for M&E programs.
2. Design scalable data architectures for diverse evaluation datasets.
3. Implement ETL pipelines for seamless data integration.
4. Apply data modeling techniques for efficient query performance.
5. Manage structured and unstructured data effectively.
6. Utilize cloud storage solutions for cost-effective data management.
7. Implement data governance and security protocols.
8. Optimize data retrieval and analytics for real-time decision-making.
9. Analyze evaluation data using business intelligence tools.
10. Leverage AI and machine learning for predictive evaluation insights.
11. Ensure data quality, consistency, and compliance.
12. Interpret insights from case studies and real-world evaluation data.
13. Develop a roadmap for sustainable and scalable M&E data systems.

**Target Audience**

1. M&E Officers and Specialists
2. Data Analysts and Data Scientists
3. Program Managers and Evaluators
4. Policy Analysts and Researchers
5. IT and Database Professionals
6. Development Practitioners and NGOs
7. Government and Public Sector Staff
8. Academic Researchers and Graduate Students

**Course Modules**

**Module 1: Introduction to Data Lakes and Warehouses**

- Overview of data lakes and warehouses
- Differences and use cases in M&E
- Components of modern data architectures
- Data storage types: structured vs unstructured
- Case study: National health survey data integration

**Module 2: Data Governance and Security**

- Principles of data governance
- Security frameworks and compliance
- Data privacy and ethical considerations
- Role-based access controls
- Case study: Secure evaluation data for NGO projects

**Module 3: Data Modeling for Evaluation Data**

- Relational and non-relational models
- Star and snowflake schemas
- Dimensional modeling for evaluation metrics
- Metadata management best practices
- Case study: Education program performance metrics

**Module 4: ETL Processes and Pipelines**

- Extract, transform, load fundamentals
- Automating ETL for large datasets
- Data cleaning and transformation techniques
- Scheduling and monitoring ETL jobs
- Case study: Multi-source M&E data integration

**Module 5: Data Storage Solutions**

- Cloud vs on-premise storage options
- Choosing storage based on data type
- Scaling storage for high-volume data
- Cost optimization strategies
- Case study: Government census data warehouse

**Module 6: Querying and Reporting**

- SQL and NoSQL queries
- Ad-hoc reporting techniques
- Using dashboards for visualization
- Best practices for fast data retrieval
- Case study: NGO impact reporting dashboard

**Module 7: Real-Time Data Analytics**

- Streaming data concepts
- Real-time evaluation dashboards
- Alerts and triggers for program monitoring
- Integrating real-time analytics tools

- Case study: Health intervention tracking in real-time

**Module 8: Business Intelligence Tools for M&E**

- Overview of BI tools
- Connecting BI tools to data warehouses
- Creating visualizations for evaluation metrics
- Advanced analytics features
- Case study: Program success visualization

**Module 9: Big Data and Unstructured Data Management**

- Handling semi-structured and unstructured data
- Integrating multimedia, social, and IoT data
- Using Hadoop, Spark, or cloud alternatives
- Best practices for large-scale evaluation data
- Case study: Social media data for community programs

**Module 10: Cloud-Based Data Architecture**

- Cloud service providers overview
- Designing scalable cloud data solutions
- Multi-region and high-availability architecture
- Cost and performance optimization
- Case study: Cloud migration of NGO M&E data

**Module 11: Data Quality and Validation**

- Importance of data quality in M&E
- Data validation frameworks
- Detecting and correcting anomalies
- Automation tools for data cleaning
- Case study: Reducing errors in survey datasets

**Module 12: AI and Machine Learning Integration**

- Basics of AI/ML for evaluation
- Predictive analytics applications
- Automated insights for decision-making
- Integration with data warehouses
- Case study: Predictive modeling for education programs

**Module 13: Data Lifecycle Management**

- Planning data retention and archival
- Versioning and change tracking
- End-to-end data lifecycle practices
- Disaster recovery and backup strategies
- Case study: Long-term evaluation program data management

**Module 14: Case Studies in Data Lakes and Warehouses**

- Global best practices

- Lessons from health, education, and social programs
- Challenges and solutions in real-world projects
- Cross-sectoral comparison
- Interactive discussion: Problem-solving scenarios

**Module 15: Hands-On Practical Lab**

- Building a small-scale data lake
- Loading, transforming, and querying evaluation data
- Connecting dashboards for visualization
- Troubleshooting common challenges
- Group project: End-to-end M&E data pipeline

## Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

**Register as a group from 3 participants for a Discount**

**Send us an email: info@fineskilltrainingcenter.org or call** *+254769199797*

***Certification***

*Upon successful completion of this training, participants will be issued with a globally- recognized certificate.*

***Tailor-Made Course***

*We also offer tailor-made courses based on your needs.*

**Key Notes**

**a.** The participant must be conversant with English.

**b.** Upon completion of training the participant will be issued with an Authorized Training Certificate

**c.** Course duration is flexible and the contents can be modified to fit any number of days.

**d.** The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

**e.** One-year post-training support Consultation and Coaching provided after the course.

**f.** Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

## Upcoming Scheduled Sessions

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **23 Nov 2026** | 04 Dec 2026 | Online | $2,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $3,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $6,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $6,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $12,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $9,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $12,000 |
| **23 Nov 2026** | 04 Dec 2026 | Physical | $12,000 |

Ready to enroll or request a customized program? Book online or contact us:

**Register Online Now**

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com