Scientific Data Preservation Training Course

Professional Development Training Course Outline

Category	Library Institute	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Scientific Data Preservation is a strategic discipline that ensures the long-term accessibility, integrity, usability, authenticity, and security of valuable research data across scientific institutions, laboratories, universities, government agencies, and private organizations. As digital transformation, artificial intelligence, cloud computing, open science, big data analytics, and high-performance computing continue to reshape research environments, organizations require sustainable data preservation strategies that support regulatory compliance, knowledge management, innovation, and scientific reproducibility. Effective preservation practices reduce data loss, improve research transparency, enhance collaboration, and maximize the long-term value of scientific investments.

Scientific Data Preservation Training Course equips participants with modern methodologies, international standards, digital preservation frameworks, metadata management techniques, repository governance, cybersecurity principles, FAIR data principles, and emerging technologies supporting long-term scientific data stewardship. Participants will gain practical knowledge for preserving research datasets throughout their lifecycle while ensuring accessibility, interoperability, reliability, and compliance with global best practices that strengthen institutional research capacity and digital sustainability.

Programme Curriculum

Scientific Data Preservation Training Course

Introduction

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Course Objectives

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

1. Understand scientific data preservation principles and frameworks.
2. Apply FAIR data principles for sustainable research management.
3. Design effective digital preservation strategies.
4. Develop metadata standards for improved discoverability.
5. Implement secure scientific data storage solutions.
6. Evaluate preservation risks using modern assessment techniques.
7. Manage research data throughout its lifecycle.
8. Apply international preservation standards and policies.
9. Strengthen data governance and regulatory compliance.
10. Utilize cloud technologies for long-term preservation.
11. Improve scientific reproducibility through quality data management.
12. Integrate AI-powered data preservation solutions.
13. Develop institutional preservation plans for research excellence.

Organizational Benefits

- Protects valuable scientific assets.
- Supports long-term research continuity.
- Improves institutional reputation.
- Enhances grant funding opportunities.
- Strengthens cybersecurity preparedness.
- Reduces preservation costs.
- Improves regulatory readiness.
- Promotes knowledge sharing.
- Supports digital transformation initiatives.
- Increases research productivity.

Target Audience

- Research Scientists
- Data Managers
- Archivists

- University Researchers
- Laboratory Managers
- Information Technology Professionals
- Records Management Officers
- Research Policy Makers

Course Duration: 5 days

Course Modules

Module 1: Foundations of Scientific Data Preservation

- Scientific data preservation concepts
- Research data lifecycle management
- FAIR data principles
- Digital preservation challenges
- International preservation standards
- Case Study: CERN Scientific Data Preservation

Module 2: Metadata and Documentation

- Metadata standards
- Persistent identifiers
- Data documentation techniques
- Controlled vocabularies
- Metadata quality assurance
- Case Study: NASA Earth Science Data Archive

Module 3: Digital Repositories and Storage

- Repository architecture
- Trusted digital repositories
- Cloud preservation platforms
- Storage technologies
- Backup and redundancy planning
- Case Study: Dryad Digital Repository

Module 4: Data Integrity and Security

- Cybersecurity fundamentals
- Data authentication
- Integrity verification
- Digital preservation risks

- Disaster recovery planning
- Case Study: European Bioinformatics Institute

Module 5: Data Governance and Compliance

- Governance frameworks
- Regulatory compliance
- Intellectual property management
- Data sharing policies
- Ethical research practices
- Case Study: UK Data Service

Module 6: Emerging Technologies

- Artificial intelligence applications
- Machine learning in preservation
- Blockchain for authenticity
- Automation technologies
- Digital sustainability tools
- Case Study: Harvard Dataverse

Module 7: Preservation Planning

- Preservation policy development
- Risk assessment
- Cost management
- Institutional planning
- Performance measurement
- Case Study: National Archives of Australia

Module 8: Practical Implementation

- Preservation workflow design
- Repository evaluation
- Monitoring preserved datasets
- Continuous improvement
- Institutional implementation roadmap
- Case Study: UNESCO Memory of the World Programme

Training Methodology

- Interactive expert-led presentations
- Facilitated group discussions
- Practical hands-on exercises
- Scientific data preservation workshops
- Digital repository demonstrations
- Metadata creation activities
- International case study analysis
- Risk assessment simulations
- Team-based problem-solving exercises
- Action planning and course evaluation

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	27 Nov 2026	Online	$1,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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

Register Online Now

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