COURSE SYLLABUS

Assessing the Reliability of Computer-Processed Data Course

Learn to evaluate the reliability of computer-processed data using professional standards and structured assessment techniques.

> Group classes (Live Online) and onsite training are available for this course. For more information, email onsite@graduateschool.edu or visit: https://sdfm.graduateschool.edu/courses/assessing-the-reliability-of-computerprocessed-data



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Course Outline

Module 1: Government Audit Standards, Policies, and Guidelines

- Review GAO Government Auditing Standards (Yellow Book) requirements for sufficient, appropriate evidence and overall assessment of evidence.
- Understand when and how to evaluate information systems (general, application, and user) controls that affect data reliability.
- Apply guidance on using the work of others and specialists, and documenting qualifications, scope, and quality.
- Identify required report content (objectives, scope, methodology) and how to disclose limitations and uncertainties.

Module 2: Data Reliability Considerations

- Define data reliability (completeness, accuracy, validity, and consistency) and why it matters for audit findings.
- Recognize common forms of computer-processed data (extracts, enterprise systems, spreadsheets, surveys) and typical reliability issues.
- Use CAATs (e.g., ACL, IDEA) and three audit methodologies — auditing with, through, and around the computer — to evaluate data.
- Understand common problems (incomplete, untimely, incorrect, or incompatible data) and their causes.

Module 3: Overall Framework for Assessments

- Decide whether a data reliability assessment is needed based on planned use and risk.
- Scope the extent of assessment using expected importance, corroborating evidence, and risk of using the data.
- Focus effort on portions of data relevant to audit objectives; consider leveraging information/system control reviews when efficient.
- Follow the framework stages: determine need and plan, conduct work, make the determination, and include appropriate report language.

Module 4: Planning and Performing the Assessment

- Initiate reliability work early; determine timing, level of detail (record- vs. summary-level), and documentation needs.
- Collect existing information: interview knowledgeable officials; obtain data dictionaries, system docs, and prior reviews.
- Test data (counts, missing values, duplicates, ranges, identifiers, dates, relationships) and, when needed, trace to/from source documents.
- Document plans, procedures, results, and conclusions clearly, using provided planning and summary worksheets.

Module 5: Documenting and Reporting Assessment Results

- Synthesize testing and control information into an overall reliability determination tied to audit objectives.
- Disclose limitations/uncertainties, describe data sources and methods, and explain population, period, and sampling as applicable.
- Tailor report wording so users can reasonably interpret findings without being misled; describe any constraints on scope or access.
- Determine whether data are sufficiently reliable, not sufficiently reliable, or of undetermined reliability, and understand the course of action for each outcome.

Module 6: Structured Approach for Assessing Reliability of Data

- Apply a structured five-phase approach — from determining audit procedures and obtaining data through extraction, verification, and reliability testing — aligned with GAO's ADR guidance.
- Leverage existing information, involve stakeholders, and perform only the work necessary to conclude "use or not."
- Use standardized tools (planning templates, documentation requests, and example data tests) to streamline assessments.

Module 7: Case Study

- Apply skills to a federal personnel/payroll case study: develop data reliability assessment steps (Part I) and draft appropriate audit report language (Part II).
- Practice documenting decisions, communicating limitations, and drafting appropriate report language.
- Evaluate three reporting scenarios with varying data reliability outcomes and draft methodology language for each.