COURSE TABLE OF CONTENTS

ISO 13528:2022 Statistical Methods for Proficiency Testing by Interlaboratory Comparison

OEM: Koenig Original • Duration: 3 Days (24 hrs)

COURSE MODULES & TOPICS

Module 1: PT Statistical Framework

- ISO 13528 scope and relationship to ISO/IEC 17043
- PT data structures and scheme design
- Measurement uncertainty and traceability
- Statistical terminology and method-selection criteria

Module 2: Data Screening and Exploratory Analysis

- Data integrity and handling missing results
- Distribution shape and outlier detection
- Graphical inspection of PT data
- Technical justification for data exclusion

Module 3: Assigned Value Determination

- Reference and formulation-based assigned values
- Consensus-based assigned values and robust estimation
- Uncertainty of assigned value
- Assessing fitness for purpose

Module 4: Standard Deviation for Proficiency Assessment

- Prescribed, perception-based and data-derived approaches
- Fitness-for-purpose criteria
- Effect of sigma pt choice on scores
- Selecting and documenting sigma pt

Module 5: Robust Statistical Methods

- Robust location and scale concepts
- Iterative robust algorithms and convergence
- Limits of robustness for small or multimodal datasets

Module 6: Homogeneity Assessment

- Sampling and replicate measurements
- Between-item variation and acceptance
- Statistical versus technical significance

Module 7: Stability Assessment

- Transport and storage stability studies
- Comparing stability data with assigned values
- Implications of instability for scoring

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Module 8: Uncertainty and Statistical Decision-Making

- Assigned-value uncertainty and score selection
- Uncertainty of individual results
- When conventional z-scores may be inadequate

Module 9: Participant Performance Statistics

- z, z-prime, zeta and En scores
- Choice of statistic and thresholds
- Scheme-specific evaluation approaches

Module 10: Graphical and Longitudinal Evaluation

- Histograms and Youden plots
- Between-round trends and systematic patterns
- Communicating limitations and comparability

Module 11: Integrated PT Dataset Workshop

- From scheme objective to statistical design
- Assigned value, sigma pt and score calculation
- Reviewing nonconforming or ambiguous results

Module 12: Reporting, Verification and Final Assessment

- Calculation checks and reproducibility
- Reporting methods, assumptions and uncertainties
- Final case-based knowledge assessment