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Understanding Exclusion and Sufficiency Decisions

Course Description

This 32-hour intermediate/advanced level course explores in depth and breadth the two concepts of “sufficiency” and “exclusion”. Examiners routinely struggle with these concepts and this course offers both theoretical and practical learning tools to better understand these concepts. The course will explore sufficiency for “value” determinations, as well as “sufficiency for conclusions”. The instructors will utilize current SWGFAST standards and ISO requirements when providing guidance on these topics. Students will explore several approaches for reducing erroneous exclusion rates and guidance is provided in the course for best practices based on the current research and literature available.

Target Audience

This course, the first of its kind in the friction ridge community, deals with the critical concepts of exclusion and sufficiency and will benefit examiners at all levels of experience and skill. However, to fully appreciate and grasp the complexity of the issues surrounding these difficult decisions – made by examiners every day – comparison experience is not only preferred but strongly recommended. Unit supervisors and quality managers are also encouraged to attend this course to gain a better understanding of the complexity of the current state of friction ridge examination.

Course Objectives

After attending this course the student will:

- Understand how thresholds and strategies affect decision making.
- Understand how utility function plays a role in decision making.
- Understand the different approaches to determination “of value”.
- Understand how agency policy will shape examiners’ approaches to sufficiency.
- Understand how knowledge, ability, and experience can impact sufficiency decisions.
- Understand how Bayes theory and utility function impact sufficiency decisions.
- Understand how sufficiency is expressed in other (non-forensic) domains.
- Understand what the “One Discrepancy Rule” is and its role (if any) in exclusion decisions.
- Understand the different ways in which an “exclusion” decision can be expressed.
- Understand how error rates apply to conclusions.
- Recognize the different ways that exclusions are conducted.
- Understand methods and approaches to reduce erroneous exclusions

Class Instructors:



John Black, CSCSA



**Glenn Langenburg,
Ph.D., CLPE, F-ABC**

Tuition: \$650.00

4 Days

Daily Schedule

	DAY 1	DAY 2	DAY 3	DAY 4
HOUR 1	- Registration - Introductions - Pre-Course Survey	Accessing Quality, L3D, and Other Features	Understanding Exclusion Decisions	Exercise 6 Coupled with Error Rates
HOUR 2	Threshold vs. Strategy	Exercise 3: Using all levels, creases, ect.		Strategies for Exclusion Decisions
HOUR 3			Exercise 5: Exclusions and Tolerance	
HOUR 4	Exercise 1: Timed Comparisons	SWGFAST Standards		Exercise 7: Strategies
LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
HOUR 5	Different Approaches to Sufficiency (Exercise, 2A)	Exercise 4: Sufficiency Graph Placement		Research: Using AFIS as a tool to reduce erroneous exclusions
HOUR 6	Exercise 2B: Reassessment of Value	Policy Devisions, Science, and Other Domains	Exercise 6: Searching to Exclude	Case Examples: Erroneous Exclusions
HOUR 7				Applying What You Have Learned to Practical Examples
HOUR 8	Exercise 2C: Approaches #1 and #2	Bayesian Approach to Sufficiency	Computing Error Rates	Class Dismissed

Must Bring to Class

- Students should bring fingerprint magnifiers and ridge counters.
- Please bring a calculator (smart phone or tablet calculator will be sufficient).
- Dress is business casual as the course will be conducted in a professional environment and facility.

Recommended Reading

Black J. Is There a Need for 100% Verification (Review) of Latent Print Examination Conclusions? *Journal of Forensic Identification* (2012), 62 (1), 80 – 100.

Neumann, C., Champod, C., Yoo, M., Genessay, T., and Langenburg, G. Improving the Understanding and the Reliability of the Concept of "Sufficiency" in Friction Ridge Examination. U.S. Department of Justice, Washington, D.C. July 2013 (2013).

Ray, E. and Dechant, P.J. Sufficiency and Standards for Exclusion Decisions. *Journal of Forensic Identification* (2013), 63 (6), 675-697.

Scientific Working Group on Friction Ridge Analysis Study and Technology (SWGFAST). Document #8 Standard for the Documentation of Analysis, Comparison, Evaluation, and Verification (ACE-V) (Latent). 09/11/12, ver 2.0 <http://www.swgfast.org/Documents.html>, [last accessed: July 30, 2013].

Scientific Working Group on Friction Ridge Analysis Study and Technology (SWGFAST). Document #10 Standards for Examining Friction Ridge Impressions and Resulting Conclusions. 04/27/13 ver. 2.0 <http://www.swgfast.org/Documents.html>, [last accessed: June 10, 2013].

Scientific Working Group on Friction Ridge Analysis Study and Technology (SWGFAST). Document #15 Standard for the Definition and Measurement of Rates of Errors and Non-Consensus Decisions in Friction Ridge Examination. ver 2.0 [last accessed: last accessed 10/09/2013].

Uler, B.T., Hicklin, R.A., Buscaglia, J., and Roberts, M.A. Accuracy and reliability of forensic latent fingerprint decisions. *Proceedings of the National Academy of Sciences* (2011), 108 (19), 7733-7738.

Uler, B.T., Hicklin, R.A., Buscaglia, J., and Roberts, M.A. Repeatability and reproducibility of decisions by latent fingerprint examiners. *PLoS One* (2012), 7 (3), e32800.

Uler, B.T., Hicklin, R.A., Kiebusinski, G.I., Roberts, M.A., and Buscaglia, J. Understanding the sufficiency of information for latent fingerprint value determinations. *Forensic Sci Int* (2013), 230 (1-3), 99-106.

Online Class Registration

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