Course Outline

COURSE: JLE 126   DIVISION: 50   ALSO LISTED AS:

TERM EFFECTIVE: Fall 2013   CURRICULUM APPROVAL DATE: 10/14/2013

SHORT TITLE: ADVANCED LATENT PRINT

LONG TITLE: Advanced Latent Print

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<th>Units</th>
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<th>Type</th>
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<td>Lab:</td>
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COURSE DESCRIPTION:

This course prepares students to properly compare and identify partial latent palm and fingerprinting impressions recovered from evidence. The students will also learn how to present expert testimony in a court of law. This is a pass/no pass course. PREREQUISITE: POST Basic Certificate or Equivalent.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

1. Explain the basis for science of identification by friction ridge impressions.

Measure: Oral
PLO:
ILO: 1.2.3

10/3/2013
GE-LO:  
Year assessed or anticipated year of assessment: 2013

2. Describe and illustrate the various friction ridge formations and ridge flows found on the fingers, thumbs, and palm surface of the hand.
Measure: oral, written exam
PLO:  
ILO: 1,2,3
GE-LO:  
Year assessed or anticipated year of assessment: 2013

3. Identify and describe the "roadmaps" used to help locate and orientate the latent print impression for comparison to the known impression.
Measure: Written
PLO:  
ILO: 1,2
GE-LO:  
Year assessed or anticipated year of assessment: 2013

4. Explain the importance of and demonstrate the use of fingerprint charts to illustrate and identify to a jury.
Measure: Oral demonstration
PLO:  
ILO: 2, 3, 
GE-LO:  
Year assessed or anticipated year of assessment: 2013

5. Present expert testimony in a mock courtroom setting.
Measure: Oral, class exercise
PLO:  
ILO: 2,1,3, 
GE-LO:  
Year assessed or anticipated year of assessment: 2013

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS  
Curriculum Approval Date: 10/14/2013
2 Hours

I. Historical Background of Fingerprint Identification
   A. Bertillion System (first scientific system of criminal identification - widely used until about 1915)
      1) Put into practice March 1879 by Alphonse M. Bertillion, clerk, Police Department, Paris, Francs (1853 -1914)
      2) Based on measurements of certain bony structures of body (on theory they do not change after maturity)
      3) Further subdivisions
      4) Disadvantages of Bertillion System
   B. Dr. Nehemiah Grew, (circa 1684)
1) Fellow of English Royal College of Physicians & Surgeons
2) Commented about ridge patterns appearing on first joints and interdigital area
C. Marcello Malpighi, (circa 1684)
1) Professor of Anatomy, University of Bologna, Italy
2) Noted appearance of loops and spirals on fingers
3) Malpighian layer of skin
D. Johannes Evangelista Purkinje
1) Professor of Anatomy at University of Breslau, Czechoslovakia
2) Published dissertation re diversity of ridge patterns on fingers, circa 1823
E. Thomas Bewick (1753 - 1828)
1) Engraved his own fingerprints on wood and used as colophons in his books on birds
F. Fingerprint identification as we know it had its origin in 1880 when two men, Henry Faulds (1843 - 1930) and William Herschel (1833 - 1917) wrote letters to the English journal, Nature
1) Henry Faulds was a physician at Tsukiji Hospital, Tokyo, Japan
2) Sir William James Hersche
3) Samuel Clemens
4) Sir Francis Galton, (1822 - 1911)
5) Juan Vucetich, (1858 - 1925)
6) Sir Edward Richard Henry, (1850 - 1925)
7) U.S. Fingerprint History

4 Hours

II. The Arch, Loop & Whorl Patterns - A Review
A. Plain arch (arch-like or mound-shaped)
   1. Pattern in which the ridges enter on one side of impression and flow or tend to flow out the other side with a rise or wave in center
B. Tented arch
   1. A pattern in which the ridges form an angle, upthrust, or possess two or three basic characteristics of loop
C. Loop type (hairpin or staple shaped)
   1. Pattern in which one or more ridges enter on one side, recurve, touch or pass an imaginary line between delta and core and pass out or tend to pass out on same side from which they entered.
   2. Recurve - ridge entering on one side, making a backward turn and exiting on same side
   3. Delta - point on a ridge in the center of two lines and located at or in front of the point of their divergence (analogy with river delta page 9)
   4. Core - needed to obtain ridge count
      a. Is approximate center of loop
      b. Core is located either on or inside of the shoulder area of the innermost recurve
      c. How to locate
         1. Find innermost recurve - smallest recurve which you can trace, which is round on top
         2. Locate shoulder area
         3. When recurve contains no rod in shoulder area - use shoulder farther from delta
4. One rod - shoulder high - top of rod
5. Two rods - top of far rod
6. Multiple rods
d. Appendage rule
5. Ridge count number of ridges intervening between delta and core
(method of subdivision for large groups)
6. Radial and ulnar loops
   a. Named for bones or forearm
   b. Radial loop - slants downward toward thumb side of hand
   c. Ulnar loop slants downward toward little finger side
d. Illustrate method of determining by placing hands on fingerprint
cards
e. Symbols for radial and ulnar loops
f. Loops constitute 65% of patterns
D. Whorls - are circular or spiral in shape
   1. Have at least two deltas
   2. Recurving ridge passing in front of each delta
   3. Constitute remaining 30% of patterns
4. Four types (mentioned to aid recognition only)
   a. Plain whorl - at least one ridge making a complete circuit and two
deltas
   b. Central pocket loop (cite origin of name)
c. Double loop: consists of two separate loop formations
d. Accidental: consists of a combination of two different types of
pattern, with exception of plain arch, or a pattern which does not
conform to any of the definitions
e. Symbol -W (always)
f. Tracing (method of subdivision for whorls)

4 Hours

III. Student Practical Exercises (#1, #2, #3, & #4)
4 Hours

IV. The Comparison of Latent Prints
A. Stress
   a. Peer pressure
   b. Premature response
c. Personal involvement
d. Quick answer
B. Ridge characteristic requirements in evaluation
C. The FBI discontinued the policy of requiring twelve points a number of years ago
   because experience acquired through many years of handling millions of
   fingerprints, has shown that positive identifications can be made on less than
   twelve points. Each case is decided individually. Weight is given not only as to the
   number of points, but also to their clarity, type and relation to each other.
D. Point Requirements of Other Countries
E. Lower Limits (individual examiner)
F. No importance attached to individual location (core, delta, outer limits of print)
G. All latent prints with sufficient characteristics must be reported of value regardless
of size or location. The difficulty of comparison has no bearing.
H. Marking of Latent Prints
I. Comparisons
J. Average frequency of characteristics
K. Fingers most often identified - percentage of identifications for each finger based on 2000 latent print identifications
L. Helpful hints in determining the proper finger and area of finger to compare.
1. Knowledge of fingerprint patterns helpful
2. Scars
3. Thumbs - the upper ridges generally slide to the right in the right hand and to the left in the left hand.
4. Double Loops in the thumb
5. If the pattern is an oval shaped whorl, generally the oval will slope to the right on the right hand and to the left on the left hand.
6. The index fingers tend to vary from these observations.
7. Tented Arches and radial loops most often appear in the index fingers.
8. When conducting comparisons always double check
9. Often a latent print reported as a fingerprint may be a fragmentary palm print.
10. Palm Prints
5 Hours
V. The Identification Process
A. Latent Print Examiners are able to reliably make positive identifications:
1. With appropriate training
2. With appropriate experience
3. With appropriate ability
4. When using the scientific procedure of ACE-V
B. The ACE-V Scientific Method for Fingerprint Identification
1. Analysis - the qualitative and quantitative assessment of Level 1, 2 and 3 details to determine their proportion, interrelationship and value to individualize.
2. Comparison - to examine the attributes observed during analysis in order to determine agreement or discrepancies between two friction ridge impressions.
3. Evaluation - the cyclical procedure of comparison between two friction ridge impressions to effect a decision, i.e., made by the same friction skin, not made by the same friction skin, or insufficient detail to form a conclusive decision.
4. Verification - an independent analysis, comparison and evaluation by a second qualified examiner of the friction ridge impressions.
2 Hours
VI. Objective and Subjective Decisions Made by the Examiner
A. The Analysis Phase is objective.
B. The Comparison Phase uses objective observations.
C. The final identification decision is subjective and is reached when sufficient quality (clarity) and quantity of corresponding Level 1, 2 and 3 friction ridge details are present.
D. The quality (clarity) and quantity of details necessary to effect the identification can vary based on training, experience and ability of the Latent Print Examiner.
1. Even though each latent print can have a different Quality (clarity) and Quantity of Level 1, 2 and 3 details.

10/3/2013
2. Latent Print Examiners with similar Training, Experience and Ability should be able to identify the same latent and inked prints.

3. Latent Print Examiners do not JUST count friction ridge detail points. Every Latent Print Examiner looks also at Level 3 details.

4. Some individual examiners may have a self-imposed 8-point rule, and some agencies may have a point rule for quality assurance purposes, but nobody is JUST counting points to effect positive identifications.

E. There is NO scientific basis for requiring a minimum number of matching features between two impressions to effect a positive identification.

1. All statistical models attempted in the past 100 years use only Level 1 and 2 details.

2. AFIS (a type of statistical model) uses Level 1 and 2 details.

3. None of these models comes close to encompassing the plethora of Level 1, 2 and (especially) 3 detail Latent Print Examiners use in the identification decision process.

F. Latent Print Examiners use charted enlargements of Galton points (Level 2 details) in court because:

1. Galton points are a simplistic manner to demonstrate features the layperson and court more readily understand.

2. It does not mean that is all the examiner uses to effect an identification.

G. When Latent Print Examiners speak of minimum numbers of matching Galton details required to effect an identification:

1. They are really speaking of self-imposed or agency quality assurance guidelines.

2. Latent Print Examiners do NOT just count points

3. Latent Print Examiners need to understand and be able to explain the ACE-V process.

2 Hours

VII. Level 1, 2 & 3 Details Explained:

A. Level 1 - includes the general ridge flow and pattern configuration. Level 1 detail is not sufficient for individualization, but can be used for exclusion.

1. Level 1 detail may include information enabling orientation, core and delta location, and distinction of finger versus palm.

B. Level 2 - detail includes formations, defined as a ridge ending, bifurcation, dot, or combinations thereof.

1. The relationship of Level 2 detail enables individualization.

C. Level 3 - detail includes all dimensional attributes of a ridge, such as ridge path deviation, width, shape, pores, edge contour, incipient ridges, breaks, creases, scars and other permanent details.

1. Level 3 ridge detail includes ridge path deviation, width, shape, pores and other details.

2 Hours

VIII. The Scientific Background for Friction Ridge Identification

A. Background

1. The presence of patterned fingerprint ridges was recognized prior to the Christian era

2. Scientific approach to fingerprinting was essential before it could be put to practical use
3. The first scientific method of classifying fingerprint patterns was in 1883 by Sir Francis Galton.

4. In 1901 Sir Edward Richard Henry simplified fingerprint classification and made it applicable to police identifications and it is the basic Henry system with modifications used by the FBI and throughout the United States prior to July 28, 1999.

5. Fingerprints offer an infallible means of personal identification, other personal characteristics change but fingerprints remain constant.

6. The friction ridges are formed prior to birth and remain until death and complete decomposition.

7. Bruises do not permanently change the ridges but serious injuries or cuts that damage the second layer of skin and will change the friction ridges.

8. Individuals may have the same pattern classification however the ridge detail of every fingerprint of every person is different this is also true of palms of the hands and the toes and soles of the feet.

B. What are fingerprints?
1. Recorded impressions of the friction ridges located on the surface of the finger.

C. What is the purpose of fingerprint identification?
1. To establish the identity or non-identity of two sets of fingerprints.

D. What are fingerprint characteristics?
1. These are also known as ridge detail, points of identification, or identifying characteristics.

E. How are Fingerprints compared?
1. Fingerprint are compared by noting the ridge characteristics in two prints to determine whether or not they match.
2. An identification is established when a number of these characteristics occupy the same relative position in the two prints.

F. How many points of identification (characteristics) are sufficient to establish an identification?
1. No set standard number required.
2. Left to each individual fingerprint examiner.
3. Deciding factors:

G. Be extremely cautious!
1. The integrity of the identification process depends on the fingerprint examiner devoting their attention to comparison work at all times.
2. All identifications should be verified by another qualified / certified fingerprint examiner.
3. Be absolutely certain of your identification.
4. NOTE: As many as 150 ridge characteristic can be observed in the average rolled fingerprint.

H. How To Compare Fingerprints
1. By noting the ridge characteristic in two fingerprint impressions to determine whether or not they match.
2. An identification is established when a number of characteristics occupy the same relative position in the two fingerprint impressions.
   a. First, observation should be are the fingerprints of the same type.
   b. Second, examine the line of flow.
c. Third, observation of the fingerprint characteristics looking for the most obvious point(s) of identification
d. Fourth, ensure the characteristics are in the same relative position in both the known and unknown prints
tics
3. Flat or Plain impressions taken simultaneously are often the clearest fingerprints to use for comparison purposes
1 Hours
IX. Understanding the Judicial System:
A. Preliminary hearings
1. Establish probable cause
B. Discovery
1. Disclose all evidence and all reports to defense
C. Pre-trial interviews
1. Go over testimony
D. Suppression hearings
1. Evidence admissible?
E. Examination
1. Direct questions by prosecutor
F. Cross-examination
1. Questions by defense
4 Hours
X. Anatomy of an Effective Fingerprint Witness
A. Pre-trial preparation
1. Keeping notes
2. Knowledge of fingerprint pioneers
3. Knowledge of latent print development procedures
4. Knowledge of fingerprint classification
5. Awareness of Chain-of-Custody issues
6. Vulnerable areas of attack
7. Fingerprint charts
8. Formal classroom training
9. Essential elements of proper preparation
B. Pre-trial meeting with the prosecutor
1. My resume
2. Going over testimony
3. Qualifying questions to be asked
4. Tactics of Defense Attorneys
5. Questions and/or answers that may cause a mistrial
C. What the jury wants to see and hear
D. Development of good listening skills
1. Understanding the question
2. Answering the question
E. Communication
1 Hours
XI. The Daubert Decision
A. What is the Daubert decision and why does it matter?
1. Has the theory of friction ridge identification been tested?
2. Has the theory of friction ridge identification been subjected to peer review
and publication?
3. What is the known or potential rate of error of friction ridge identification?
4. What is the degree to which friction ridge identification has been generally accepted in the scientific community?
5. The existence and maintenance of standards controlling its operation.

4 Hours

XII. Moot Court Demonstration / Roll Play
A. Exemplar fingerprint testimony
B. Each student will undergo Moot Court fingerprint testimony and answer questions from roll players representing the prosecution and defense (video taped)
C. Each student fingerprint witness will be privately critiqued and offered suggestions for improvement

2 Hours

XIII. Final Examination Exercise:
Practice making fingerprint identifications with the Fingerprint Identification Practice Sets provided. When complete compare your results to the answer sheet.

1 Hours

XI. Closing Comments / Evaluations

METHODS OF INSTRUCTION:
Lecture, discussion and demonstration will serve as the medium of instruction. Individual guidance will be provided as required.

METHODS OF EVALUATION:
CATEGORY 1 - The types of writing assignments required:
Percent range of total grade: 25 % to 40 %
Reading Reports
CATEGORY 2 - The problem-solving assignments required:
Percent range of total grade: 15 % to 25 %
Homework Problems
Quizzes

CATEGORY 3 - The types of skill demonstrations required:
Percent range of total grade: 30 % to 50 %
Class Performance/s
Performance Exams

CATEGORY 4 - The types of objective examinations used in the course:
Percent range of total grade: 20 % to 35 %
Multiple Choice

REPRESENTATIVE TEXTBOOKS:
n/a

ARTICULATION and CERTIFICATE INFORMATION
Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
   Transferable CSU, effective 199750
UC TRANSFER:
   Not Transferable

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: I
Noncredit Category: Y
Cooperative Education:
Program Status: 2 Stand-alone
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: JLE
CSU Crosswalk Course Number: 126
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: Y
Occupational Course: B
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000456120
Sports/Physical Education Course: N
Taxonomy of Program: 210500