

Helston Forensics

F o r e n s i c B a l l i s t i c L a b o r a t o r i e s



Our ref: 12051/NF/FF

Helston Forensics
Helston Gunsmiths Factory
Water-Ma-Trout
Helston
Cornwall
TR13 0LW
United Kingdom
T: +44 (0) 1326 561440
T: +44 (0) 1326 573385
F: +44 (0) 1326 573221
W: www.helstongunsmiths.com
E: aim@helstongunsmiths.com

INTRODUCTION TO COMPARISON MICROSCOPY TOOL MARKS

Overview – This course is designed to raise awareness and understanding of comparison microscopy and the examination of tool marks.

AIM / OUTCOMES:

- **To give the student the opportunity to develop the skills and knowledge to conduct independent comparison and evaluation of forensic samples**
- **To gather evidential information relevant to forensic samples**
- **To verify findings**

An itinerary for each day has been provided below.

Notes:

- 1. This is a CPD-related course. This course can contribute to your Continuing Professional Development (CPD) and will be evidenced through a multiple-choice summative assessment and the award of a Course Completion Certificate.**
- 2. The student will have the opportunity to produce their own samples.**
- 3. Samples can be retained by the student.**
- 4. All safety equipment required will be provided.**
- 5. Refreshments and lunch will be provided.**
- 6. The course duration will be 0900 – 1730, finishing on day three at 1430.**
- 7. Assistance with hotel bookings will be available from our office staff.**
- 8. The principal lecturer will be the manufacturer appointed UK Chief Instructor for the LCF 1000 & LCF 1600 comparison microscopes, distributed by Locards Principle Limited throughout the UK/Europe/Africa.**

ITINERARY: DAY ONE

Health & Safety – samples/tools/ safe handling

Introduction to the use of the comparison microscope

History and development of comparison microscopy

Theory of comparison microscopy

Forensic Science: Forensic Principles – Law and Responsibility

The microscope itself – Identification of the main components

MICROSCOPE OVERVIEW

- Key features and benefits
- The importance of the bridged system

LIGHT SOURCE

- Types of light source
- Light manipulation
- Practical exercises

USE OF THE SYSTEM FOR CASEWORK

- Forensic strategy
- Sample handling
- Best practice
 - Certification
 - How to use the system for collaborative work

MICROSCOPE SET UP AND BASIC START OF DAY CHECKS

- Setting up to start to work
- Ergonomics
- Optical correction

DEVELOPING FAMILIARITY OF THE SYSTEM

IMAGE CAPTURE

- The options
- Keys to success
- Software and data recording

ROUND UP, SUMMARY OF THE DAY AND FEEDBACK

ITINERARY: DAY TWO

Tools & methods of manufacture

Tool action

Mark Characteristics – class & individual

AFTE – definitions & recommendations

Pattern identification

Quantitative Consecutively Matching Stria (QCMS)

Theory of identification

MARK TYPES

- **Striated**
- **Impressed**

SAMPLE PREPARATION

- **Lead**
- **Wax**
- **Polymer**

COMPARISON OF TOOL MARKS

- **Practical mark examination – striated**
- **Practical mark comparison – striated**
- **Practical mark examination – impressed**
- **Practical mark comparison – impressed**

Interpretation & Conclusions

Alternative hypothesis

Note taking

Peer review

ROUND UP, SUMMARY OF THE DAY AND FEEDBACK

ITINERARY: DAY THREE

REVISION AND PRACTICE

- Practical exercise
- One case striated or impressed mark as examiner
- One case striated or impressed mark as peer reviewer
- Case submission

RESULTS

CERTIFICATE PRESENTATION

END
