

# RON SMITH AND ASSOCIATES, INC.

## FINDING LATENT EVIDENCE WITH CHEMISTRY AND LIGHT



**Class Instructor:**  
**Brian Dalrymple,**  
**CLPE**

**4 Day Course**

**32 Training Hours**

**\$600.00 Tuition**

**This course is approved for IAI certification and recertification purposes**



**RS&A recommends taking our classes in order of our Sequential Training Curriculum**

**CLICK HERE TO VIEW OUR SEQUENTIAL TRAINING CURRICULUM**



### COURSE DESCRIPTION

The purpose of this four day seminar is to enable the student:

- \* To identify the best technique, or series of techniques, for developing the maximum evidence
- \* To understand and exploit fluorescence as a powerful detection strategy, using a range of Forensic Light Sources
- \* To record impression evidence faithfully and accurately
- \* To prepare and use the chemical reagents safely in a laboratory environment.
- \* The student will learn about lasers and light sources as key forensic technology, as well as the principles behind luminescence detection of evidence.
- \* Techniques targeting tapes (adhesive side), blood prints on porous and nonporous surfaces will be featured.
- \* The student will learn how to use multiple techniques in the correct sequence on many surfaces for maximum results.
- \* The student will learn conventional, atypical and digital photographic techniques for extracting the clearest and most useful images.
- \* This course will feature hands-on sessions in exhibit processing and photography, as well as an examination and certificate of completion.

### TARGET AUDIENCE

Crime scene technicians, detectives, laboratory analysts and others who process evidence in a laboratory environment who want to understand and exploit fluorescence as a powerful detection strategy using chemical reagents and a range of Forensic Light Sources

### DAILY SCHEDULE

	Day 1	Day 2	Day 3	Day 4
Hour 1 & 2	OPENING REMARKS - Continuity - Documenting & Marking Evidence - Exhibit Evaluation - Sequential Processing  THEORY OF LIGHT & FLUORESCENCE (CLASSROOM)	HEALTH & SAFETY (CLASSROOM) LAB ROTATION (ALL DAY)	CRIME SCENE DNA (CLASSROOM) LAB ROTATION (ALL DAY)	IMPRESSION PHOTOGRAPHY (CLASSROOM)
Hour 3 & 4	CHEMICAL TREATMENTS (CLASSROOM)	LAB ROTATION	LAB ROTATION	PHOTOGRAPHIC PRACTICALS (LOCATION)
Lunch	Lunch	Lunch	Lunch	Lunch
Hour 5 & 6	COMPARISON OF LIGHT SOURCES (CLASSROOM)	LAB ROTATION	LAB ROTATION	PHOTOGRAPHIC PRACTICALS (CONTINUED)
Hour 7 & 8	MOCK CRIMES SCENES (LOCATION)  DIGITAL IMAGING (CLASSROOM) (CLASS SPLIT)	LAB ROTATION	LAB ROTATION	REVIEW OF PRACTICAL ASSIGNMENTS  EXAM  PRESENTATION OF CERTIFICATES

### SHOULD BE ABLE TO PERFORM

The student will learn:

- \* To understand and exploit fluorescence as a powerful detection strategy using a range of Forensic Light Sources
- \* To record impression evidence faithfully and accurately
- \* To prepare and use chemical reagents safely in a laboratory environment
- \* To use multiple techniques in the correct sequence on many surfaces for maximum results
- \* Conventional, atypical and digital photographic techniques for extracting the clearest and most useful images

### MUST BRING TO CLASS

Students must bring lab coats or other protective garment and wear old clothing on lab days.

No open-toed shoes can be worn in the laboratory

All students are strongly encouraged to bring a digital camera (digital SLR preferred) with a macro lens and tripod to enhance the learning experience during this class – it is not required for attendance but is strongly encouraged. All types of standard digital media should be able to be used by the instructor to critique the work

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### RECOMMENDED READING

*Lee and Gaensslen's Advances in Fingerprint Technology, Third Edition, CRC Press, 2013, Edited by Robert Ramotowski*  
*Crime and Measurement: Methods in Forensic Investigation, Nafte, M., Dalrymple, B., Carolina Academic Press, 2011*

### WHAT'S NEXT

This course lays a solid foundation for the next course in our Friction Ridge Curriculum, Forensic Digital Imaging For Latent Print Examiners: Extend Your Reach. Having learned to develop the evidence with Chemistry and Light the student will learn techniques to enhance those images using computerized software programs such as Photoshop and how to prepare this evidence for presentation in court.

### HOST A CLASS

The following are the basic requirements for hosting this class but we will work to accommodate your situation.

Monday is the set-up day and is dedicated to checking that all chemistry, equipment and supplies have been received, resolving issues and ensuring that the hands-on rotations will run smoothly. The workshop is conducted in a lecture room and a lab with both being required for the 4 days. In addition, other rooms or areas are needed for mock crime scenes on day 1, and the practical photographic exercises on Friday morning. There are usually four stations set up in the lab with a group of 6 students at each station. Each group will spend slightly less than half a day at each station (two days, Wednesday and Thursday to complete the rotation.) Students will have the opportunity to mix and apply detection chemistry at each station.

The stations are:

- \* Cyanoacrylate fuming and dyes
- \* Amino acid reagents
- \* Blood impression development
- \* Lipid and sticky-side processing

There will be lectures each day in the classroom which fill out the rest of the days. Friday will be devoted to hands-on photographic practical exercises, followed by the classroom review and discussion of the results.

Class room requirements:

- \* Table & chair seating for 24
- \* PowerPoint projector
- \* Whiteboard (if possible) or a flip chart
- \* 2 Breakout rooms (mock crime scenes, for Tuesday afternoon):
  - Approx. 10' x 10' ( enough room to arrange a mannikin with exhibits on floor)
  - Sufficient room for 6 students to conduct light examination
  - Power source
  - Capable of making room dark for effective use of light sources

Lab requirements:

- \* Sufficient room for 24 students to work at four stations concurrently, including sufficient counter space for students to mix chemistry, process and lay out exhibits
- \* At least one fume hood, two would be better, three are ideal
- \* Standard lab health and safety features including eyewash station, nitrile gloves, emergency shower
- \* At least one large wet sink, two would be great, three are ideal
- \* Nitrile gloves for 24 attendees during lab rotations

Lab Equipment required:

- \* Approximately 12 beakers, size not critical but at least 500 ml capacity, 1L would be better
- \* 2 - 6, 250 ml beakers, whatever is available
- \* 4 graduated cylinders, 25, 50 or 100 ml capacity
- \* 6, 1 or 2 ml pipettes (disposable if possible)
- \* Magnetic mixers, at least 2, more would be fantastic
- \* At least 12 magnetic stir rods
- \* Glass trays of any size, as many as 6, if possible (ideal sizes - 6 x 9, 10 x 12)
- \* Humidity chamber, if possible. if not, one steam and one dry iron
- \* Cyanoacrylate fuming chamber

It is helpful to know which light sources are available ahead of time.

Exclusive of the laboratory equipment, all chemistry and teaching equipment will be supplied by RS&A

### I.A.I. APPROVED TRAINING HOURS

This course provides 32 training hours and is approved for IAI Certification and re-certification.

