

Training Programme

USE OF RASTR SYSTEM IN EVIDENCE EXAMINATION

Course duration: 7 calendar (or 5 training) days

Admission requirements to learners:

- Knowledge of fundamentals of forensic science (criminalistics)
- Skill or knowledge of how to draw up evidence examination reports and worksheets

Form of Classes	Qty	Hours
Lectures, lectures-presentations, lectures-demonstrations	4	6 h 20 min
Demonstrations	10	11 h 20 min
Practice	6	12 h 20 min
Final Testing	1	3 h 40 min
Meeting	2	3 h 00 min
TOTAL		36 h 40 min

COURSE SYLLABUS

Topic/Subject	Description	Hours
DAY OF ARRIVAL	<ul style="list-style-type: none"> • Transfer from an airport to PAPILLON • Accommodation 	
OPENING SESSION	<ul style="list-style-type: none"> • Completion of questionnaires • Safety rules talk • Fire safety instructions • Code of behaviour on the company premises 	2 h
INTRODUCTORY LECTURE-PRESENTATION Mission and Principal Capabilities of RASTR System	<ul style="list-style-type: none"> • Application and capabilities of RASTR • Grounds for using RASTR in forensic examinations • Recommendations by Forensic Science Center of Russian MOI • Features distinguishing RASTR from other image processing facilities • Details of training procedure 	1 h 40 min
DEMONSTRATION Getting Ready: Logging into RASTR and Creating an Individual Database	<ul style="list-style-type: none"> • Logging into RASTR System • Creation of a RASTR database belonging to a particular user • Creation/editing of user personal data • Database structure and management 	40 min

<p>PRACTICE Logging into RASTR and Creating an Individual Database</p>	<ul style="list-style-type: none"> • Logging into RASTR System • Creating the user's database • Creating folders • Creating users • Access control 	30 min
<p>DEMONSTRATION Image Acquisition</p>	<p>Downloading images to RASTR database from:</p> <ul style="list-style-type: none"> • camera • Canon EOS • TVC camera • Flatbed scanner • Graphical files • RAW files • Video files • PAPILLON AFIS database 	1 h 30 min
<p>PRACTICE Downloading Images to RASTR Database</p>	<ul style="list-style-type: none"> • Tasks on the topic • Checking by the tutor and comments 	1 h
<p>DEMONSTRATION Work with PAPILLON ExpertLab, FOSKO and LATOP</p>	<ul style="list-style-type: none"> • Application and technical characteristics • Positioning and examining material evidence • Photographing objects in different light modes • Transmitting latent print images to PAPILLON AFIS 	2 h
<p>LECTURE-PRESENTATION Basics of Digital Image Processing</p>	<ul style="list-style-type: none"> • Digital images: terms and definitions • Color spaces • Graphical formats • Methods of digital image processing 	1 h
<p>DEMONSTRATION Image Processing with Standard Software Tools</p>	<ul style="list-style-type: none"> • Outlining the region of interest (ROI) • Brightness and contrast adjustment • Negative/positive conversion • Rotation, mirroring (flipping) • Filters • Image calibration 	1 h
<p>DEMONSTRATION Creation of a Document Layout. Preparation of Examination Worksheets.</p>	<p>Preparation of Examination Reports Using the Examination Module:</p> <ul style="list-style-type: none"> • Downloading images • Marking and charting characteristic points • Inserting ready images onto the document layout • Work with templates • Application settings 	2 h
<p>PRACTICE Image Processing with Standard Software Tools. Preparation of Examination Worksheets.</p>	<ul style="list-style-type: none"> • Processing images with standard application tools when examining dactyloscopic objects • Preparing a latent fingerprint examination worksheet • Preparing a bulletin to search a wanted suspect or a person of interest 	2 h 20 min
<p>DEMONSTRATION Tools for Trace Evidence Analysis</p>	<ul style="list-style-type: none"> • Comparison of striations • Superimposition of striations • Aligning of striations • Measurements • Preparing an examination worksheet 	2 h 10 min

PRACTICE Using Tools in Trace Evidence Analysis	<ul style="list-style-type: none"> Conducting trace evidence analysis Drawing up the results of analysis	4 h10 min
LECTURE-DEMONSTRATION Latent Print Processing	<ul style="list-style-type: none"> Elicitation of latents (work with latents developed with ninhydrin or poorly visible ones) Subtraction (work with latents developed with luminescent powders) Processing tools Fast Fourier Transform (work with overlapping latents, suppression of periodical pattern of the surface where latents are discovered) 	3 h
LECTURE-PRESENTATION Basics of Fast Fourier Transform	FFT's principles: <ul style="list-style-type: none"> Resolving images into components Amplifying/suppressing the wave frequency Composing the image of transformed set of spatial waves 	40 min
PRACTICE Latent Print Processing with RASTR Tools	<ul style="list-style-type: none"> Extracting a latent (work with latents developed with ninhydrin) Separating latents Subtracting images Offloading images from RAST Database 	3 h 40 min
FINAL TESTING	<ul style="list-style-type: none"> Guidance to performing the test Part A of the test: theoretical questions Part B of the test: latent print processing with RASTR tools Creating a worksheet on the results of latent print examination Creating a worksheet on the results of trace evidence analysis 	3h 10 min
FINAL TESTING Analysis of the Test Results	<ul style="list-style-type: none"> Completion of test reports Review of the test results Tutor's recommendations 	30 min
DEMONSTRATION Use of RASTR Tools for Studying Ballistic Objects, Documents and Facial Images	<ul style="list-style-type: none"> Use of the comparator Extraction of CMYK channel from a printed document Use of the subtraction method Use of the latent print elicitation method Preparation of examination worksheets 	30 min
DEMONSTRATION Operations with the BLIP Module	<ul style="list-style-type: none"> Application and capabilities Downloading of images Image processing Operations in the database 	1 h
DEMONSTRATION RASTR System Management	Basic administering over the RASTR system: <ul style="list-style-type: none"> Work with the log of client connections Database defragmentation Database archiving (backup) 	30 min
PRACTICE RASTR System Management	Tasks of RASTR system management: <ul style="list-style-type: none"> Review of the log of client connections Database defragmentation Database archiving (backup) Database recovery 	40 min

CLOSING SESSION	<ul style="list-style-type: none">• Summing up the training course, exchange of opinions• Presentation of the trainees with documentation	1 h
DAY OF DEPARTURE	<ul style="list-style-type: none">• Check-out.• Transfer from PAPILLON to an airport	