

# OCCUPATIONAL QUALIFICATION STANDARD

## Forensic Expert EstQF, Level 8

An occupational qualification standard is a document which describes the set of skills, knowledge and attitudes, i.e. competence requirements, needed to successfully accomplish duties. Occupational qualification standards are used for compiling curricula and awarding qualifications.

Occupational title	Level of Estonian Qualifications Framework (EstQF)
Forensic Expert EstQF, Level 8	8

Possible specialisation and titles on occupational certificate	
Specialisation	Title on occupational qualification certificate
DNA examination	DNA Expert, Level 8
Marks examination	Marks Expert, Level 8
Firearms examination	Firearms Expert, Level 8
Fire examination	Fire Expert, Level 8
Explosive device and explosion examination	Explosive Device and Explosion Expert, Level 8
Traffic examination	Traffic Expert, Level 8
Document examination	Document Expert, Level 8
Handwriting examination	Handwriting Expert, Level 8
Forensic accounting examination	Forensic Accounting Expert, Level 8
Voice examination	Voice Expert, Level 8
Digital image examination	Digital Image Expert, Level 8
Information technology examination	Information Technology Expert, Level 8
Narcotic substance examination	Narcotic Substance Expert, Level 8
Alcohol examination	Alcohol Expert, Level 8
Ignitable liquid examination	Ignitable Liquid Expert, Level 8
Explosives examination	Explosives Expert, Level 8
Fibre examination	Fibre Expert, Level 8
Paint coating examination	Paint Coating Expert, Level 8
Metal and gunshot residue examination	Metal and gunshot residue expert, Level 8
Toxicology examination	Toxicology Expert, Level 8
Fingerprint examination	Fingerprint Expert, Level 8

## Part A DESCRIPTION OF WORK

<b>A.1 Description of work</b> <p>A forensic expert is an expert employed by a state forensic institution whose main task is to conduct examinations and tests ordered in proceedings and to provide an expert opinion based on non-legal expertise.</p> <p>Forensic Expert, Level 8 conducts examinations and tests in the field of their expertise and prepares a scientific expert opinion in writing on the basis thereof. At the request of the court, Forensic Expert, Level 8 participates in</p>
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court sessions as an expert/witness or a qualified person in the field of their expertise. In addition to conducting examinations and tests, they are involved in furthering the field, developing new methodologies and laws related to the field, as well as training and guidance.

Forensic Expert, Level 8 performs their tasks impartially and in compliance with the requirements of confidentiality and other requirements arising from the articles of association and quality management systems of state forensic institutions.

The occupation of forensic expert includes the following specialisations:

A DNA expert compares the DNA profiles collected from the scene of events with those of persons and conducts kinship analyses on the basis of DNA.

A marks expert examines marks left by footwear, tyres, break-in tools, etc. and compares them against comparative samples presented.

A firearms expert examines firearms and ammunition and parts thereof as well as marks caused by shooting.

A fire expert ascertains the location of the origin of the fire, investigates the possibility of the object being ignited by a controllable source of ignition and determines the technical cause of the fire.

An explosive device and explosion expert examines explosive devices, explosive materials and pyrotechnic articles and parts thereof, fragments created during an explosion, etc.

A traffic expert reconstructs and analyses traffic accidents, assesses the functionality of systems installed in vehicles for traffic safety and ascertains the cause of any malfunction, identifies vehicles and analyses the possibility of vehicles coming into contact with one another.

A document expert examines important identity documents, banknotes and other printed items and documents and ascertains whether such documents are authentic or have been forged.

A handwriting expert examines texts and/or signatures in order to identify the writer.

A forensic accounting expert investigates the organisation of accounting and reporting of accounting entities, the manipulation of their accountancy data or the submission of incorrect data, the causing of material damage and its extent and the correctness of audit conclusions and other circumstances that are of importance as evidence of the commission of a criminal offence.

A voice expert enhances the audio of recordings, identifies the speaker, ascertains the authenticity of recordings and transcribes speech.

A digital image expert improves the quality of visual materials, extracts frames related to the act under investigation and edits video files in special formats.

An information technology expert extracts and recovers data from storage devices in order to ascertain whether an offence has been committed and tests electronics.

A narcotic substance expert detects and identifies narcotic and psychotropic substances.

An alcohol expert ascertains whether alcohol is homemade or manufactured and identifies appliances for the distillation of moonshine.

An ignitable liquid expert detects traces of ignitable liquids in objects collected from the scene of a fire.

An explosives expert detects explosives or identifies explosives used to cause an explosion.

A fibre expert examines fibres and hairs found on objects.

A paint coating expert detects paint particles originating from one painted object on another object.

A metal and gunshot residue expert detects particles originating from firearms on the hands or clothing of a person, identifies the element composition of metals or detects metal traces on objects and identifies and classifies counterfeit coins.

A toxicology expert detects substances consumed by a person in order to ascertain intoxication or the cause of death.

As a detection specialist, a fingerprint expert recovers friction ridge impressions from objects and surfaces and assesses the possibility of individualising recovered friction ridge impressions. As an identification specialist, a fingerprint expert assesses the possibility of individualising friction ridge impressions and identifies persons on the basis of friction ridge impressions.

In addition to Level 8, the occupation of Forensic Expert also includes Forensic Expert, Level 7, who conducts examinations and tests according to their expertise.

## **A.2 Tasks**

### **A.2.1 Conducting examinations and/or tests**

1. Reviewing materials.
2. Conducting examinations and/or tests.
3. Documenting results.
4. Participating in procedural acts.

### **A.2.2 Attending court hearings**

1. Preparing for a hearing.
2. Speaking at a hearing.
3. Providing written responses to the questions asked at a hearing that require more time or preparation.

### **A.2.3 Self-development and developing the field**

1. Developing their field/speciality.
2. Participating in international comparative tests.
3. Making proposals for/participating in the development of legislation.
4. Giving presentations at national and/or international conferences or seminars related to their field.
5. Publishing academic articles in national and/or international publications.
6. Self-development via training related to their field and specialised literature.

### **A.2.4 Training and guidance**

1. Conducting training related to their field.
2. Guiding specialists, trainee experts and/or university students.

## **Specialised areas of work**

### **DNA examinations**

#### **A.2.5 Conducting DNA examinations and tests**

1. Taking DNA samples for examinations and tests.
2. Interpreting the results of DNA analyses.
3. Assessing the weight of DNA evidence.

### **Marks examinations**

#### **A.2.6 Conducting marks examinations**

1. Examining and comparing marks left by footwear, tyres, gloves or mittens, etc.
2. Examining and comparing marks left by break-in tools, tools, etc.
3. Examining other marks.

### **Firearms examinations**

#### **A.2.7 Conducting firearms examinations**

1. Identifying objects as firearms.
2. Identifying cartridges as ammunition for firearms.

3. Identifying the type of firearm on the basis of bullets and cartridge cases.
4. Identifying firearms on the basis of bullets and cartridge cases.
5. Ascertaining the facts of a shooting on the basis of shot marks and the circumstances of the shooting.

#### Fire examinations

##### A.2.8 Conducting fire examinations

1. Ascertaining the technical cause of a fire (source of ignition).
2. Ascertaining the location of the origin of the fire (location of ignition).
3. Investigating the circumstances at the scene of events.
4. Examining objects of examination in a laboratory.
5. Ascertaining other facts related to the outbreak and spread of the fire.

#### Explosive device and explosion examinations

##### A.2.9 Conducting explosive device and explosion examinations

1. Examining and identifying explosive devices, explosive materials and pyrotechnic articles and parts thereof.
2. Ascertaining the composition and characteristics of examination objects.
3. Testing examination objects in order to check their suitability for use and/or capacity for explosion.
4. Examining, comparing and assembling objects and fragments collected from the explosion site.
5. Reconstructing objects that have exploded and ascertaining the cause of the explosion and other facts.

#### Traffic examinations

##### A.2.10 Conducting technical traffic examinations

1. Ascertaining the positions of vehicles relative to one another at the moment of collision.
2. Ascertaining the positions of vehicles relative to the road at the moment of collision.
3. Ascertaining the moving speeds of vehicles.
4. Assessing the possibility that the traffic accident could have been prevented.
5. Reconstructing collisions with pedestrians.
6. Identifying the drivers of vehicles involved in the traffic accident.

##### A.2.11 Conducting technical examinations of vehicles

1. Assessing the functionality of systems installed in vehicles for traffic safety.
2. Ascertaining the cause of the technical malfunction of vehicles.

##### A.2.12 Conducting traffic traceology examinations

1. Identifying vehicles.
2. Analysing whether and how vehicles came into contact.

#### Document examinations

##### A.2.13 Conducting document examinations

1. Ascertaining the authenticity of documents.
2. Ascertaining the forgery of documents suspected of having been forged.
3. Classifying counterfeit documents and exchanging information.

#### Handwriting examinations

##### A.2.14 Conducting handwriting examinations

1. Detecting a common writer.
2. Identifying the writer of a signature and/or text.

#### Forensic accounting examinations

##### A.2.15 Conducting forensic accounting examinations

1. Investigating the reliability of accounting.
2. Ascertaining the non-compliance of accounting with the requirements specified in the Accounting Act or the General Rules for State Accounting.
3. Ascertaining the time of having gone bankrupt and become permanently insolvent.

#### Voice examinations

##### A.2.16 Conducting voice examinations

1. Identifying the speaker.
2. Authenticating (i.e. ascertaining the authenticity of) recordings.
3. Enhancing the audio of recordings.
4. Transcribing.

#### Digital image examinations

##### A.2.17 Conducting digital image examinations

1. Improving the quality of visual materials.
2. Extracting frames related to the act under investigation and analysing digital images.
3. Analysing digital video surveillance equipment.
4. Ascertaining the authenticity of recordings.

#### Information technology examinations

##### A.2.18 Conducting information technology examinations

1. Copying data.
2. Finding information using keywords and references.
3. Recovering deleted data.
4. Modelling activities.
5. Analysing malware.
6. Copying data from mobile devices.
7. Testing electronics.

#### Narcotic substance examinations

##### A.2.19 Conducting narcotic substance examinations

1. Detecting and identifying narcotic substances.
2. Ascertaining the percentages of narcotic substances present.

#### Alcohol examinations

##### A.2.20 Conducting alcohol examinations

1. Ascertaining ethanol content.
2. Identifying the type of alcohol.
3. Examining illegal alcohol production equipment.

#### Ignitable liquid examinations

##### A.2.21 Conducting ignitable liquid examinations

1. Detecting ignitable liquids.
2. Identifying ignitable liquids.

#### Explosives examinations

##### A.2.22 Conducting explosives examinations

1. Detecting explosives.
2. Identifying explosives.

#### Fibre examinations

##### A.2.23 Conducting fibre examinations

1. Detecting fibres/hairs.
2. Comparing fibres/hairs.
3. Identifying fibres/hairs.

#### Paint coating examinations

##### A.2.24 Conducting paint coating examinations

1. Detecting paint coating particles.
2. Comparing paint coating particles.
3. Identifying paint coating particles.

#### Metal and gunshot residue examinations

##### A.2.25 Conducting metal (incl. coin) and gunshot residue examinations

1. Conducting comparative analyses of metals, glass, paint coatings, substances or materials with an electron microscope.
2. Detecting gunshot residues.
3. Conducting filament lamp examinations microscopically.
4. Examining and classifying counterfeit coins.

#### Toxicology examinations

##### A.2.26 Conducting toxicology examinations

1. Detecting ethanol.
2. Detecting monohydric alcohols and other volatile compounds.
3. Detecting narcotic and psychotropic substances.
4. Detecting the active substances in medicinal products.
5. Detecting carboxyhaemoglobin.
6. Detecting other toxic substances.

#### Elective areas of work

The specialisation of Fingerprint Expert includes the following optional areas of work:

##### A.2.27 Detection of friction ridge impressions

1. Recovering friction ridge impressions from objects and surfaces.
2. Individualising friction ridge impressions.

##### A.2.28 Identifying persons on the basis of friction ridge impressions

1. Individualising friction ridge impressions.
2. Finding matches between friction ridge impressions.

#### A.3 Work environment and specific nature of work

A forensic expert has fixed working hours, but they may also be required to work outside of these working hours. Their work is intense and requires mental effort. Depending on their specialisation, a forensic expert may be exposed to various hazards while performing their tasks. A forensic expert mainly works indoors, and where necessary, at the scene of events or at the location of the object under examination.

#### A.4 Tools

To perform their tasks, a forensic expert uses special tools and equipment, personal protective equipment specific to their specialisation and info-technology tools and software specific to their specialisation.

#### A.5 Personal qualities required for work: abilities and characteristics

The work of a forensic expert requires honesty, objectivity, correctness, stress tolerance, cooperation, accountability, independence and good analytical and decision-making skills.

#### A.6 Professional preparation

Forensic Expert, EstQF Level 8 holds an academic degree in a field relevant to their speciality and a Master's degree or an educational qualification equivalent thereto or a doctorate. Professional skills are acquired through work experience.

#### A.7 Most common occupational titles

Expert witness, expert.

## Part B COMPETENCY REQUIREMENTS

#### B.1 Structure of occupation

The following competences must be certified when applying for the qualification of Forensic Expert, EstQF Level 8: everyone is required to certify competences B.2.1-B.2.4 and recurring competence B.2.29, and at least one of the following must be selected from the area of specialisation:

- DNA Expert – competence B.2.5;
- Marks Expert – competence B.2.6;
- Firearms Expert – competence B.2.7;

Fire Expert – competence B.2.8;  
 Explosive Device and Explosion Expert – competence B.2.9;  
 Traffic Expert – competences B.2.10-B.2.12;  
 Document Expert – competence B.2.13;  
 Handwriting Expert – competence B.2.14;  
 Forensic Accounting Expert – competence B.2.15;  
 Voice Expert – competence B.2.16;  
 Digital Image Expert – competence B.2.17;  
 Information Technology Expert – competence B.2.18;  
 Narcotic Substance Expert – competence B.2.19;  
 Alcohol Expert – competence B.2.20;  
 Ignitable Liquid Expert – competence B.2.21;  
 Explosives Expert – competence B.2.22;  
 Fibre Expert – competence B.2.23;  
 Paint Coating Expert – competence B.2.24;  
 Metal and Gunshot Residue Expert – competence B.2.25;  
 Toxicology Expert – competence B.2.26.  
 Additionally, when specialising as a fingerprint expert, at least one of optional competences B.2.27 and B.2.28 must be certified.

## B.2 Competences

### MANDATORY COMPETENCES

B.2.1 Conducting examinations and/or tests	EstQF Level 7
Performance indicators: 1. reviews requests for examinations/tests and other materials presented for examination; visually inspects the object of examination/investigation; verifies the conformity between the examination/investigation materials and the accompanying documents; in the event of inconsistencies or shortcomings, requests the completion/correction of the materials; 2. conducts examinations and/or tests in accordance with guidelines and legislation, using an appropriate methodology and based on international recommendations; 3. documents examination/test results in accordance with legislation and guidelines, based on the relevant expert assignment; prepares impartial categorical/probable expert opinions/test results, drawing on their expertise; 4. participates in procedural acts in accordance with legislation.	
B.2.2 Attending court hearings	EstQF Level 7
Performance indicators: 1. works through examination/test materials; prepares for hearings according to prior information; obtains additional information where necessary; 2. appears at a hearing if summoned by the court; answers questions asked by the parties to the proceedings and the court clarifying the content of an expert report or a report on refusal to conduct an examination and formulates a scientifically valid response; expresses their opinions clearly and is able to emphasise what is most important; 3. provides adequate reasons for requesting additional time to answer questions; requests the assignment of an additional examination where necessary; answers questions in writing or prepares a complementary expert report.	
B.2.3 Self-development and developing the field	EstQF Level 8
Performance indicators: 1. assesses the need to update guidelines and makes proposals for amendments; prepares new methodologies and guidelines according to the development of their speciality/field, considering the needs of the field; organises the validation of methodologies, where necessary; 2. participates in international comparative tests, where possible, considering guidelines and methodologies; 3. keeps up to date with guidelines and legislation regulating their field of expertise and analyses the shortcomings and need for the amendment or supplementing thereof; reviews draft acts and expresses their opinion on the modifications/amendments to be made, considering the specific nature of their speciality;	



4. makes presentations in various formats at national and/or international academic conferences or seminars;
5. publishes academic articles in national and/or international publications;
6. participates in refresher training related to their field (conferences, seminars, workshops, web-based training systems, etc.); keeps up to date with international academic literature; shares recent specialised information with their colleagues.

#### **B.2.4 Training and guidance**

**EstQF Level 8**

Performance indicators:

1. participates in assessing the need for training in their field of expertise; gives lectures and provides practical training to experts, bodies conducting proceedings and other related persons according to the assessed need and demand therefor; prepares training materials;
2. compiles training or retraining curricula in order to offer guidance to employees or university students in their area of expertise; guides employees and/or university students in their field who are under training or retraining in practical activities; supervises the fulfilment of the curriculum and the quality of performance; assesses results.

### **COMPETENCES RELATED TO SPECIALISATION**

When applying for the qualification of Forensic Expert, EstQF Level 8 at least one of the specialisation must be certified.

#### **DNA examination**

##### **B.2.5 Conducting DNA examinations and tests**

**EstQF Level 7**

Performance indicators:

1. examines objects of examination and takes DNA samples therefrom; conducts pre-tests where necessary; selects DNA isolation methods; decides on the DNA testing systems and reaction conditions to apply;
2. decides on the need for and conditions of repeated reactions on the basis of the DNA profiles generated; interprets DNA profiles; compares DNA profiles from the scene of events with one another and with personal profiles; searches for DNA profiles in databases;
3. calculates the frequency or likelihood ratio of DNA profiles where necessary and possible.

#### **Marks examination**

##### **B.2.6 Conducting marks examinations**

**EstQF Level 7**

Performance indicators:

1. examines objects of examination (marks left by footwear, tyres, gloves or mittens, etc.); processes and records marks under examination where necessary; studies comparative samples and constructs experimental marks; compares the general and specific characteristics of marks under examination and experimental marks;
2. examines objects of examination (marks left by break-in tools, tools, etc.); records marks under examination where necessary; studies comparative samples and constructs experimental marks; compares the general and specific characteristics of marks under examination and experimental marks both with the naked eye and under a microscope;
3. examines objects of examination (an object as a coherent whole, marks left during production, stamps, seals, etc.); records marks under examination where necessary; compares marks under examination according to the specific nature of objects.

#### **Firearms examination**

##### **B.2.7 Conducting firearms examinations**

**EstQF Level 7**

Performance indicators:

1. inspects objects presented in order to identify objects as firearms and examines their structural characteristics; ascertains the uses of objects and checks their reliability and capacity to cause damage; identifies objects as firearms on the basis of obtained data;



2. inspects cartridges and assesses their structural characteristics, uses and technical condition; ascertains the suitability for use of cartridges for shooting and their capacity to cause damage; identifies cartridges as ammunition for firearms on the basis of obtained data;
3. examines objects presented and marks thereon both with the naked eye and under a microscope and ascertains their structural characteristics; identifies the type of firearm using databases and other comparative materials;
4. examines objects presented both with the naked eye and under a microscope in order to identify firearms on the basis of bullets and cartridge cases and ascertains their structural characteristics; constructs comparative marks and compares them with marks on the object presented; identifies firearms on the basis of obtained data;
5. examines objects presented and damage done thereto both with the naked eye and under a microscope in order to ascertain the facts of a shooting on the basis of shot marks and the circumstances of the shooting; recovers shot marks, constructs comparative marks and studies and compares them with marks on the object presented; ascertains the facts of the shooting on the basis of obtained data.

## **Fire examination**

### **B.2.8 Conducting fire examinations**

**EstQF Level 7**

Performance indicators:

1. investigates the possibility of the object being ignited by a controllable source of ignition (heating appliances, electrical equipment, technological devices, etc.); ascertains the technical cause of the fire (source of ignition) on the basis of obtained data;
2. ascertains the location of the origin of the fire on the basis of data obtained via investigation; searches for marks of the inverted cone and areas with major damage;
3. assesses the nature of the fire damage while investigating the circumstances at the scene of the fire; investigates the routes by which the fire spread; searches for possible sources of ignition (electrical equipment, mechanism of friction, cigarette ends, candles, etc.);
4. examines objects of examination (electrical equipment etc.) in a laboratory; photographs and describes the characteristics detected in objects indicating a malfunction;
5. investigates and assesses the circumstances facilitating the spread of the fire (good gas exchange, high fire load, openings in boundary structures, etc.).

## **Explosive device and explosion examination**

### **B.2.9 Conducting explosive device and explosion examinations**

**EstQF Level 7**

Performance indicators:

1. examines objects of examination (explosive devices, explosive materials, pyrotechnic articles and parts thereof, etc.); photographs objects and describes their general and specific characteristics; takes X-rays of objects and substance samples, where necessary; identifies objects presented on the basis of obtained data;
2. ascertains the structure and characteristics of objects on the basis of data obtained during the investigation, using catalogues, academic literature, databases and/or comparative materials; in the event of more than one object being presented for examination, assesses their compatibility and the possibility of configuring them into an explosive device or devices;
3. tests examination objects to check their suitability for use (presence of explosives or pyrotechnic substances, capacity for explosion or other characteristics);
4. examines objects and fragments related to the explosion, ascertains their characteristics and takes substance samples, where necessary; sorts fragments based on common external characteristics; fits fragments together, compares them and configures them in order to identify a possible explosive device;
5. assesses whether and to what extent the fragments and parts detected are related to the explosion and to the object that exploded; reconstructs the object that exploded and ascertains the cause of the explosion and other facts on the basis of obtained data.

## **Traffic examination**

### **B.2.10 Conducting technical traffic examinations**

**EstQF Level 7**

Performance indicators:

1. ascertains the positions of vehicles relative to one another at the moment of collision on the basis of photographs taken of the damage (examining the vehicle damage personally, where necessary); analyses the extent of the damage and the direction of the force that caused the damage;
2. ascertains the location of the collision and the positions of the vehicles on the road on the basis of a sketch map of the scene of events, inspection report and photographs; inspects the scene of events, where necessary;
3. calculates the moving speeds of the vehicles on the basis of materials collected by the body conducting proceedings; uses relevant computer software, where necessary;
4. assesses the technical possibility that the driver could have prevented the traffic accident, previously establishing the other driver who caused the traffic hazard;
5. ascertains the location of the collision with a pedestrian and the positions of the pedestrian and vehicle relative to each other on the basis of a sketch map of the scene of events, inspection report, photographs, inspection of the vehicle and forensic medical expert's report; assesses the technical possibility that the driver could have prevented the traffic accident;
6. establishes which of the persons present in the vehicle was the driver at the time of the traffic accident on the basis of a sketch map of the scene of events, inspection report, photographs, inspection of the vehicle and forensic medical expert's report as well as data obtained from other experts' reports, where necessary.

**B.2.11 Conducting technical examinations of vehicles**
**EstQF Level 7**

Performance indicators:

1. assesses the functionality of systems installed in vehicles for traffic safety, using relevant methodology;
2. decides whether the malfunction occurred before or during the traffic accident; assesses whether a malfunction occurring prior to the traffic accident could have been anticipated by the driver.

**B.2.12 Conducting traffic traceology examinations**
**EstQF Level 7**

Performance indicators:

1. identifies vehicles, based on the technical complexity and identification parameters of vehicles; uses special tools and software as well as relevant chemicals, where necessary;
2. analyses the possibility of vehicles coming into contact with one another; examines and compares marks on vehicles; uses relevant computer software, where necessary.

**Document examination**
**B.2.13 Conducting document examinations**
**EstQF Level 7**

Performance indicators:

1. describes and documents the characteristics of the objects under examination (identity documents, banknotes and other documents); selects objects necessary for comparative examination and obtains information; conducts various tests using the methods established; uses special equipment, where necessary; if the object under examination turns out to be forged, ascertains the manner in which it was forged and the level of its hazardousness and classifies it on the basis of class characteristics; archives and systematises data;
2. describes documents suspected of being forged and documents their characteristics; detects images, materials and marks using methods appropriate to the specific nature of the document; draws conclusions; archives and systematises data;
3. classifies counterfeit documents, exchanges information with other competent institutions and performs tasks for the NAC (National Analysis Centre) in compliance with the rules established by the European Central Bank.

**Handwriting examination**
**B.2.14 Conducting handwriting examinations**
**EstQF Level 7**

Performance indicators:

1. visually inspects questioned and/or comparative materials; assesses the quality and quantity of the materials, i.e. their suitability for examination; examines the materials with special equipment; conducts comparative examinations of signatures and/or handwriting in order to detect a common writer;
2. visually inspects questioned and comparative materials in order to identify the writer of a signature and/or text; assesses the quality and quantity of materials, i.e. their suitability for examination; assesses the compliance of

comparative materials with the questioned material examines the materials with special equipment; conducts comparative examinations of signatures and/or handwriting.

## Forensic accounting examination

### B.2.15 Conducting forensic accounting examinations

**EstQF Level 7**

Performance indicators:

1. examines the accounting records of companies in order to assess the reliability of accounting, and assesses on the basis thereof the legality and reliability of and material damage caused by business transactions;
2. examines the accounting records of companies and assesses on the basis thereof the legality of business transactions, the compliance of annual reports with accounting and the compliance of accounting with the Accounting Act or the General Rules for State Accounting;
3. investigates the economic performance, income, expenses, profit, loss, debts and assets of companies in a certain period in order to ascertain the time of having gone bankrupt and become permanently insolvent; conducts tests to assess solvency and the risk of bankruptcy, where necessary; establishes the time of having gone bankrupt or become permanently insolvent.

## Voice examination

### B.2.16 Conducting voice examinations

**EstQF Level 7**

Performance indicators:

1. examines/listens to objects of examination in order to identify the speaker; assesses the quality and quantity of materials, i.e. their suitability for examination; prepares materials for auditive and acoustic analysis and conducts analyses using appropriate software;
2. examines/listens to objects of examination for the authentication thereof, i.e. in order to ascertain the authenticity of recordings; inspects the sound, listens critically and analyses audio and auditive anomalies; makes test recordings, where necessary;
3. examines/listens to objects of examination in order to improve the quality of recordings, detects and identifies the type of background noise(s) and subsequently removes the noise(s);
4. examines/listens to objects of examination for the transcription thereof; makes transcriptions by listening to sound recordings multiple times and at various volumes and speeds; enhances audio (removes background noise), where necessary.

## Digital image examination

### B.2.17 Conducting digital image examinations

**EstQF Level 8**

Performance indicators:

1. differentiates between media formats when improving the quality of video recordings and digital images and converts video files and digital images into an unpacked media format; inspects video recordings in special formats and edits them, where necessary; uses filters for improving video quality and video editing software (e.g. AVID or AMPED FIVE); recovers video recordings from video surveillance systems with an uncommon file system; uses video editing software and writes and implements Avisynth or Python scripts, where necessary, in order to improve the visual quality of video recordings;
2. installs and uses surveillance video players in order to extract frames related to the act under investigation and analyse digital images; differentiates and analyses metadata; uses examination software in order to prepare reports related to files;
3. analyses digital video surveillance systems (incl. copying video recordings from video equipment) in accordance with the principles of information technology examination; selects the optimum method for extracting frames and video recordings from video recording equipment; recovers video recordings from areas uncovered by the file system;
4. assesses the authenticity of video and digital image files based on the characteristics of media files.

Knowledge:

- 1) Adobe Photoshop software.

<b>Information technology examination</b>	
<b>B.2.18 Conducting information technology examinations</b>	<b>EstQF Level 8</b>
Performance indicators: 1. makes copies of storage devices for examination, using the copy method; 2. finds information using keywords; examines documents (e-mails, images, etc.) using references; 3. recovers deleted data, drawing on their knowledge of file systems and file structures; 4. models the activities of users based on data obtained from storage devices; 5. detects malware; tracks the course and functionality of malware using a virtual machine; ascertains functionality based on programme code; 6. copies data from mobile devices (e.g. mobile phones, tablets and GPS receivers) using the prescribed tools; 7. differentiates between electronic components and ascertains the operating principles of electronics.	
Knowledge: 1) data types and structures; 2) most common mobile operating systems.	

<b>Narcotic substance examination</b>	
<b>B.2.19 Conducting narcotic substance examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. screens for narcotic substances in order to obtain preliminary information; prepares samples for analysis; conducts analyses using chromatographic methods or FTIR; analyses the results obtained and identifies the substance; 2. prepares samples to ascertain the percentages of narcotic substances present; ascertains substance percentages using the chromatographic method.	

<b>Alcohol examination</b>	
<b>B.2.20 Conducting alcohol examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. prepares samples to ascertain ethanol content, conducts analyses using the gas chromatographic method and an aerometer; analyses the results and reaches a decision; 2. prepares samples to identify the type of alcohol, conducts analyses using the gas chromatographic and flame photometric methods; analyses the results and reaches a decision; 3. inspects physical evidence presented for investigating illegal alcohol production equipment; decides on the possibility of using physical evidence presented as an appliance for the distillation of moonshine.	

<b>Ignitable liquid examination</b>	
<b>B.2.21 Conducting ignitable liquid examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. prepares samples to detect ignitable liquids; conducts analyses using a gas chromatograph-mass spectrometer; analyses the results and decides on the presence of ignitable liquids; 2. compares results obtained with liquids classified as ignitable liquids in order to identify ignitable liquids.	

<b>Explosives examination</b>	
<b>B.2.22 Conducting explosives examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. prepares samples to detect explosives; conducts analyses using chromatographic or other methods; analyses the results and decides on the presence of explosives; 2. compares results obtained with standard substances/substances classified as explosives in order to identify explosives.	

<b>Fibre examination</b>	
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<b>B.2.23 Conducting fibre examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. examines adhesive tape under a stereomicroscope in order to detect fibres/hairs on adhesive tape or objects, where necessary; analyses the results and decides on the presence of fibres/hairs; 2. compares fibres/hairs found on physical evidence with fibres/hairs of objects provided for comparison using various microscopes and FTIR; analyses the results; 3. compares fibres/hairs with comparative samples in order to identify them, using various microscopes and FTIR; analyses the results.	

<b>Paint coating examination</b>	
<b>B.2.24 Conducting paint coating examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. examines physical evidence under an appropriate microscope and FTIR in order to detect paint coating particles; analyses the results and decides on the presence of paint coating particles; 2. compares paint coating particles found on physical evidence with particles of objects provided for comparison using various microscopes and FTIR; analyses the results; 3. compares paint coating particles with comparative samples in order to identify them, using FTIR; analyses the results.	

<b>Metal and gunshot residue examination</b>	
<b>B.2.25 Conducting metal (incl. coin) and gunshot residue examinations</b>	<b>EstQF Level 7</b>
Performance indicators: 1. prepares samples in order to conduct comparative analyses of metals, gunshot residues, glass, paint coatings, substances and materials; conducts analyses; compares various materials using electron microscopy; analyses the results; 2. conducts filament lamp examinations microscopically; analyses the results; 3. examines coins using an electrical conductivity meter and magnetometer, analyses the results and classifies forged euro coins.	

<b>Toxicology examination</b>	
<b>B.2.26 Conducting toxicology examinations</b>	<b>EstQF Level 8</b>
Performance indicators: 1. detects ethanol in biological materials using a gas chromatograph; analyses the results; 2. detects monohydric alcohols and other volatile compounds in biological materials using a gas chromatograph; analyses the results; 3. screens for narcotic and psychotropic substances in order to obtain preliminary information; conducts analyses using chromatographic methods; analyses the results obtained and decides which substances the relevant sample does or does not contain; 4. conducts analyses using chromatographic methods in order to detect active substances in medicinal products; analyses the results obtained and decides which substances the relevant sample does or does not contain; 5. detects carboxyhaemoglobin using a CO-oximeter; analyses the results. 6. reviews toxicology literature; selects the appropriate methodology for detecting toxic substances; checks the functionality of the methodology using standard substances; conducts analyses; decides on the presence of toxic substances.	

## OPTIONAL COMPETENCES

When specialising as a fingerprint expert, at least one of optional competences B.2.27 and B.2.28 must be certified.

<b>B.2.27 Recovering friction ridge impressions</b>	<b>EstQF Level 7</b>
Performance indicators: 1. recovers friction ridge impressions from objects and surfaces using physical, physicochemical and/or chemical recovery methods; 2. assesses the possibility of the individualisation of friction ridge impressions using the holistic approach.	
<b>B.2.28 Identifying persons on the basis of friction ridge impressions</b>	<b>EstQF Level 7</b>
Performance indicators: 1. assesses the possibility of the individualisation of friction ridge impressions using the holistic approach; 2. finds matches between friction ridge impressions in order to identify persons on the basis of friction ridge impressions or to confirm their identity or to link persons to the scenes of events or friction ridge impressions found at the scenes of events of offences yet to be resolved.	

## RECURRING COMPETENCES

<b>B.2.29 Recurring competences of Forensic Expert, Level 8</b>	<b>EstQF Level 8</b>
Performance indicators: 1. uses Estonian at the level necessary for their work and English at the B2 level (see Annex 1. Language skills level descriptions); 2. uses the following domains of digital skills: information management, online communication (excl. 2.3), content creation and safety (see Annex 2 for digital skills); is able to use professional software according to their specialisation; 3. follows the ethical principles of Estonian Forensic Science Institute (EFSI) in their work; 4. keeps up to date with laws and regulations concerning forensic examination and conducts examinations in compliance with the law; meets the requirements of confidentiality set out in the Forensic Examination Act and other laws.	
Assessment method(s): Recurring competences are assessed in an integrated manner as part of the assessment of the other competences listed in the occupational qualification standard.	

## Part C GENERAL INFORMATION AND ANNEXES

<b>C.1 Information concerning compilation and certification of occupational qualification standard and reference to classification of occupations</b>	
1. ID of occupational qualification standard in register of occupational qualifications	26-06112018-1.4/5k
2. Occupational qualification standard compiled by:	Allan Juhe, Eesti Kohtuekspertiisi Instituudi (EKEI) tehnikaosakond Urmas Lõiv, EKEI liiklusosakond Krista Reinek, EKEI arendus- ja personalitalitus Aime Riikoja, EKEI keemiaosakond Kaja Rodi, EKEI dokumendiosakond Merike Rump, EKEI kvaliteeditalitus Gunnar Tasa, EKEI DNA osakond Marika Väli, Tartu Ülikooli bio- ja siirdemeditiini instituudi patoloogilise anatoomia ja kohtuarstiteaduse osakond, EKEI teadus- ja arendusnõukoda
3. Occupational qualification standard approved by:	Property and Personal Protection
4. No. of decision of Sectoral Council	11
5. Date of decision of Sectoral Council	06.11.2018

6. Occupational qualification standard valid until	30.10.2023
7. Occupational qualification standard version no.	5
8. Reference to International Standard Classification of Occupations (ISCO 08)	3119 Physical and Engineering Science Technicians Not Elsewhere Classified
9. Reference to European Qualifications Framework (EQF)	8
<b>C.2 Occupational title in foreign language</b>	
English:	Forensic Expert EstQF, Level 8
<b>C.3 Annexes</b>	
Lisa 1 <a href="#">Language skills level descriptions</a>	
Lisa 2 <a href="#">Digital Skills</a>	