



ESF programm „Kutsete süsteemi arendamine“

## Occupational standard

### Senior Biomedical (Laboratory) Assistant, level 7

The occupational standard for senior biomedical laboratory scientist, level 6 initial occupational qualification is the basis for drafting of curricula and training programmes meeting the requirements of labour market and evaluation of competence of the people.

<b>Occupational qualification title</b>	<b>Estonian qualifications framework (EstQF) level</b>
<i>Senior Biomedical (Laboratory) Scientist, level 7</i>	<i>7</i>

## Part A

### JOB DESCRIPTION

#### A.1 Job description

A biomedical laboratory scientist is a specialist working at laboratories where general condition of the organism and structure and functions of tissues, organs, cells and molecules, microbiological systems and other factors affecting human organism are being studied. It is the job of a biomedical laboratory scientist to perform laboratory studies relying on evidence-based medicine that show patient's state of health.

A biomedical laboratory scientist manages the preanalytic stage of analytical processes and gives advice on preanalytic issues, performs and manages analytic measurements and technical procedures. A biomedical laboratory scientist independently completes a routine laboratory study and releases test results while taking personal responsibility for its quality. The job of a biomedical laboratory scientist co-operates both with laboratory workers and workers of other professional fields. They develop their professional skills continuously throughout their career.

There are three occupational qualifications on the field of biomedical laboratory scientist:

Biomedical (laboratory) scientist, level 6 initial occupational qualification has received professional training for starting work in a health care laboratory and their tasks are performing high-quality laboratory studies, instructing patients/customers and preparing them for laboratory analyses, assuring the safety of the patient in the laboratory and throughout the analysis, assuring the safety of themselves and environment, organizing their professional activity in co-operation with other specialists, developing the laboratory work and its quality and following code of professional ethics. They develop their professional skills continuously throughout their career.

Biomedical (laboratory) scientist, level 6 is a specialist with former work experience who can instruct their colleagues and trainees if necessary.

Senior biomedical (laboratory) scientist, level 7 is a specialist with former work experience who, in addition to performing studies in a health care laboratory, is involved in development activities of the laboratory, participates in the development and testing of new methods and trains health care workers.

#### A.2 Units

##### A.2.1 Organizing and performing laboratory work

1. Using laboratory equipment.
2. Coordinating and performing supervision over maintenance and repairs.
3. Participating in creating of technical description of equipment.
4. Using laboratory equipment.
5. Ordering and receiving reagents and tools.
6. Organizing and managing teamwork.
7. Counselling colleagues.
8. Notifying colleagues.
9. Co-operating with nursing or field managers of the department.
10. Training.

##### A.2.2 Performing laboratory studies

1. Taking test samples from patients.

<ol style="list-style-type: none"> <li>2. Performing routine and specific laboratory tests.</li> <li>3. Evaluating results.</li> </ol>
<p>A.2.3 Developing new laboratory methods or -studies</p> <ol style="list-style-type: none"> <li>1. Participating in development of methods and studies.</li> <li>2. Creating work manuals and documentation.</li> <li>3. Creating quality assurance system.</li> <li>4. Teaching the use of new methods.</li> <li>5. Putting together information materials.</li> </ol>
<p>A.2.4 Assuring the quality of laboratory studies</p> <ol style="list-style-type: none"> <li>1. Creating quality system documentation.</li> <li>2. Performing quality checks.</li> <li>3. Analyzing the results of quality inspection.</li> <li>4. Finding solutions.</li> <li>5. Holding responsibility for study results.</li> </ol>
<p>A.2.5 Training and counselling health care workers</p> <ol style="list-style-type: none"> <li>1. Informing health care workers of the work arrangement of laboratory.</li> <li>2. Notifying healthcare workers of reference values and decision limits of laboratory studies.</li> <li>3. Notifying healthcare workers of conditions that affect analysis results.</li> <li>4. Organizing and leading in-service trainings.</li> <li>5. Supervising trainees.</li> </ol>
<p><b>A.3 Working environment and specific aspects of work</b></p>
<p>In their work, biomedical laboratory scientist comes in contact with biological materials, chemical substances and physical risk factors. They work with medical laboratory equipment. The job requires the use of protective clothing and personal protective equipment. The job includes infection- and chemical related risks. Work with computers and other devices can also include potential health risks.</p>
<p><b>A.4 Tools</b></p>
<p>Medical laboratory equipment and tools, computers and information systems.</p>
<p><b>A.5 Personal characteristics necessary for this job: abilities and personality traits</b></p>
<p>Stress tolerance, correctness, preciseness, analytical abilities, dutifulness, willingness and ability to learn, sense of responsibility.</p>
<p><b>A.6 Occupational training</b></p>
<p>A senior biomedical laboratory scientist is a person with professional higher education, in-service training and former work experience..</p>
<p><b>A.7 Possible job titles</b></p>
<p>Biomedical laboratory scientist</p>

## Part B COMPETENCE REQUIREMENTS

### B.1. The structure of the occupational qualification

All competences must be certified when applying for this occupational qualification.

### B.2 Competences

#### Obligatory competences

<b>B.2.1 Organizing and performing laboratory work</b>	<b>EstQF level 7</b>
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none"> <li>1) uses existing laboratory equipment while taking into account the specifics of laboratory work (e.g. hematology, microbiology, pathology, etc.);</li> <li>2) co-ordinates and performs supervision over maintenance and repairs of existing laboratory equipment, according to maintenance plan;</li> <li>3) participates in creating of technical description of equipment and gives evaluation on the suitability of devices for a specific task;</li> <li>4) prepares equipment for performing studies (adjusting, calibrating, etc.), performs planned maintenance according to user manual;</li> <li>5) orders and receives routinely used reagents and tools according to need and cost-orientation;</li> <li>6) organizes and leads teamwork;</li> <li>7) advises colleagues on taking test samples (e.g. choice of sample container, following sample taking requirements, etc.);</li> <li>8) notifies colleagues of interferences of test results, critical values and noncompliance of sample material;</li> <li>9) co-operates with nursing or field managers of the department by offering solutions to current problems;</li> <li>10) trains nursing staff in laboratory-specific areas.</li> </ol>	
<p><u>Assessment method(s):</u> Self-analysis, interview.</p>	
<b>B.2.2 Performing laboratory studies</b>	<b>EstQF level 7</b>
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none"> <li>1) takes test samples from patients (e.g. capillary blood, venous blood, microbiological scrapings, etc.);</li> <li>2) performs routine and specific laboratory studies (e.g. studying samples for alternating flow, hematology, cytology, etc.) according to manual;</li> <li>3) assesses the results according to vital margins and relevant quality checking systems; formalizes and issues responses according to established order.</li> </ol>	
<p><u>Assessment method(s):</u> Self-analysis, interview.</p>	
<b>B.2.3 Developing new laboratory methods or studies</b>	<b>EstQF level 7</b>
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none"> <li>1) participates in developing newest methods or studies by performing an intercomparison study and assessing the user-friendliness of a specific study or method;</li> </ol>	

- 2) participates in creating work manuals and other necessary documentation by using evidence-based materials;
- 3) participates in creating a quality assurance system for new methods or studies by evaluating user-friendliness of the system;
- 4) chooses an efficient way for teaching new methods by assessing and documenting the results of a study group;
- 5) puts together different information materials introducing laboratory studies by using evidence-based materials and taking into account the target group.

Assessment method(s):

Self-analysis, interview.

**B.2.4 Assuring the quality of laboratory studies**

**EstQF level 7**

Performance indicators:

- 1) participates in creating and modernizing the documentation concerning quality systems and creates them individually by keeping in mind their user friendliness;
- 2) checks the quality of studies they have performed and assesses the results according to quality control evaluation criteria;
- 3) analyses the results of quality check in their research area according to evaluation criteria of quality control, creates a summary and assesses the performance;
- 4) in case of unconformities that are not specified in manuals find solutions, adjust activities and implements measures for improvement;
- 5) assures that test results in their research field would be of quality and reliable, by using the newest evidence-based research methods developed in health care laboratory.

Assessment method(s):

Self-analysis, interview.

**B.2.5 Training and counseling health care workers**

**EstQF level 7**

Performance indicators:

- 1) notifies health care workers of the work arrangement of laboratory concerning the preanalytical, analytical and postanalytical stage, according to instructions;
- 2) notifies healthcare workers of reference values and decision values of laboratory studies by using proper ways of communication and following instructions;
- 3) notifies healthcare workers of conditions that affect analysis results by using proper ways of communication and following instructions;
- 4) organizes and leads in-service trainings within their sphere of competence for healthcare providers, according to target group and using methods most suitable for it;
- 5) supervises trainees and colleagues according to instructions.

Supporting knowledge:

- 1) Supervision.

Assessment method(s):

Self-analysis, interview or documented.

**Transversal competences**

**B.2.6 Senior biomedical (laboratory) scientist, level 7 transversal competence**

**EstQF level 7**

Performance indicators:

- 1) organizes and leads internal in-service training in the laboratory;
- 2) uses official language in their work on proficiency level B2 and professional English (Annex 1);

- 3) uses computer in their work on skill level A01-7 and 12 (Annex 2) and is capable of using professional software;
- 4) follows work safety and work environmental requirements (e.g. biological, chemical and physical requirements, etc.); uses personal protective equipment, special equipment and devices to avoid harming themselves, colleagues and environment;
- 5) documents their work process according to manuals and by using proper professional terminology;
- 6) provides first aid;
- 7) follows data protection requirements in their work;
- 8) follows legislation related to their professional field;
- 9) follows the code of professional ethics;
- 10) uses correct professional terminology; chooses and uses proper ways of communication according to situation, handles different conflict situations; interacts with people politely;
- 11) handles stress, fallbacks and uncertain situations, notifies those involved of existing problems and provides possible solutions; remains constructive in stressful situations; keeps their work and private life in balance; has an understanding attitude for criticism and can learn from it;
- 12) clearly expresses their opinion, does not hide information and can point out important discussion points;
- 13) uses materials and means in an economic and efficient manner; observes the work process and assures that deadlines and stages would be followed;
- 14) uses area specific knowledge and experience in their work;
- 15) supports the concept of the organization in their activities.

Supporting knowledge:

- 1) professional and personal development;
- 2) anatomy-physiology;
- 3) basics of laboratory work;
- 4) work environment of a laboratory;
- 5) biochemistry, molecular and cellular biology;
- 6) pathology;
- 7) microbiology;
- 8) clinical pathology;
- 9) clinical chemistry and hematology;
- 10) pharmacology, toxicology;
- 11) genetics, molecular diagnostics;
- 12) public health;
- 13) communication psychology;
- 14) general psychology;
- 15) philosophy and ethics;
- 16) professional English;
- 17) Latin;
- 18) research methodology;
- 19) management studies;
- 20) project management, basics of economy;
- 21) quality management in a laboratory.

Assessment method(s):

Integrated with assessment of other competences specified in the occupational standard.

## Part C

### GENERAL INFORMATION AND ANNEXES

<b>C.1 Information on the preparation and approval of the occupational standard, on the body awarding occupational qualifications, and reference to the location of the occupational standard in classifications</b>	
1. Designation of the occupational standard in the register of occupational qualifications	05-23052013-2.3/5k
2. <i>The occupational standard is compiled by:</i>	Annike Koorts, <i>The North Estonia Medical Centre</i> Jane Kurm, <i>The North Estonia Medical Centre</i> Piret Mängel, <i>Tartu University Hospital</i> Aivar Orav, <i>Association of Estonian Biomedical Laboratory Scientists</i> Mare Remm, <i>Tartu Health Care College</i> Monyca Sepp, <i>Estonian Society for Laboratory Medicine</i>
3. The occupational standard is approved by:	Tervishoiu ja Sotsiaaltöö Kutsenõukogu
4. No. of the decision of the Sectoral Council	14
5. Date of the decision of the Sectoral Council	23.05.2013
6. The occupational standard is valid until (date)	22.05.2018
7. Occupational standard version No.	
8. Reference to the Classification of Occupations (ISCO 08)	32
9. Reference to the level in the European Qualifications Framework (EQF)	6
<b>C.2 Title of occupational qualification in foreign languages</b>	
In Estonian Meisterbioanalüütik	
In Finnish Bioanalytikko	
<b>C.3 Annexes</b>	
Annex 1 Language skills	
Annex 2 Computer skills	