MANUAL FOR THE DEVELOPMENT AND USE OF QUALIFICATIONS AND OCCUPATIONAL STANDARDS
IN BOSNIA AND HERZEGOVINA

Joint EU/CoE Project
Strategic Development of Higher Education and Qualification Standards

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Joint EU/CoE Project Strategic Development of Higher Education and Qualification Standards

European Union   Council of Europe

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Glossary[1]

Competence: the (*proven*) ability to apply knowledge, skills and personal, social and methodological abilities at work or while learning, both in private and in professional development. Within the context of the EQF, competence is described as responsibility and autonomy. [1, 2]

Credit point: a unit of measurement for the size/volume of learning acquired. It is determined on the basis of the average total time successful students/learners require for acquiring such learning outcomes. Example: ECTS credits (European Credit Transfer and Accumulation System) in higher education. [2]

EQF Referencing to the EQF: the process of verification of compatibility of national qualifications framework (or national qualifications system) in a EU member state (or other participating country) to the EQF according to the EQF referencing criteria, which results in the establishment of a relationship between the levels of national qualifications and levels of the EQF.

European Qualifications Framework for lifelong learning (EQF): an instrument for the establishment of levels of qualifications, structured to act as a means of identifying and understanding qualifications among national qualifications frameworks. [1, 2]

Formal education: learning led by a teacher or an instructor, acquired in educational institutions and accordance with curricula approved by responsible education authorities. It ends with the awarding of an official document. [2]

Inclusive education: the right of every person to equal opportunity during education. This particularly includes the right of children with development difficulties and gifted children to develop their potential to the maximum through support which includes flexible programmes, adequately prepared teachers, expert support and welcoming, aimed at developing tolerance, acceptance of differences and later social inclusion. [2]

Informal learning: spontaneous learning and acquiring of knowledge and skills through everyday activities. [2]

International Standard Classification of Education (ISCED): an international standard classification of education. [2]

Knowledge: a set of facts, principles, theories and practices, which are related to a particular field of work or study, resulting from the adoption of information through the learning process. Within the context of the EQF, knowledge is described as theoretical and/or factual. [1, 2]

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[1] Readers should be aware that there are some significant variations in definitions of some key terms found in a number of major European higher education reform publications, including the EQF, EHEA, ECTS Users' Guide, ESG.

Learning outcomes: a description of what a student/learner knows, understands and is able to perform on the basis of a completed learning process, defined through knowledge, skills and competences. [2]

Level descriptors: generic description of learning outcomes of a particular level. [2]

Lifelong learning: linking formal, non-formal and informal learning in order to acquire abilities for continuous improvement of quality of life. [2]

National Qualifications Framework (NQF): an instrument for the classification of qualifications acquired in a particular country, which provides the basis for transparency, access, progression, acquisition and quality of qualifications. [2]

Non-formal education/learning: an organised process of learning and education focused on improving, specialising or amending learning outcomes in accordance with special programmes implemented by education and training providers (regular schools, training centres, companies, agencies, etc.) [2]

Occupational Standard: a list of all tasks that an individual performs within a particular occupation and a list of learning outcomes required for their successful performance. [2]

Open educational resources (OER): digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research; it includes learning content, software tools to develop, use and distribute content, and implementation resources such as open licences; OER also refers to accumulated digital assets that can be adjusted and which provide benefits without restricting the possibilities for others to enjoy them. [3]

Qualification: a formal title of the result of the assessment and validation process obtained once a competent body determines that an individual has achieved the learning outcomes as per the defined standards. [2]

Qualifications Framework for the European Higher Education Area (QF-EHEA): a document adopted by the Conference of European Ministers Responsible for Higher Education, held in Bergen in 2005, which defines generic descriptors for each of the three cycles of higher education and it is applied in all signatory states of the Bologna Process. [2]

Qualifications Framework in Bosnia and Herzegovina (QF-BiH): an instrument for the classification of qualifications acquired in Bosnia and Herzegovina, which provides the basis for transparency, access, progression, acquisition and quality of qualifications. [2]

Qualifications Standard: the standard, which establishes the conditions for the acquisition of an official document on a particular qualification. It includes all the data necessary for determining the level, the credit points and the profile of a qualification, as well as data required assurance of the qualifications standard. [2]

Quality Assurance: a system and procedures applied in order to preserve the agreed standards of products and services, including their continued improvement.[2] [2]

Recognition of prior learning: the validation of learning outcomes, whether from formal education or non-formal or informal learning, acquired before requesting validation. [3]

Reference level of qualification: the complexity of the learning outcomes achieved, which is described by a set of level descriptors. [2]

Sector: a grouping of professional activities on the basis of their main economic function, product, service or technology. [1]

Self-certification to the QF-EHEA: the process of verification of compatibility of the higher education system in a participating country of the Bologna Process to the QF-EHEA according to the given criteria and procedures, which results in the establishment of a relationship between the cycles of national qualifications and cycles of the QF-EHEA.

Skills: the ability to apply knowledge and use "know how" principle to perform a certain task. They help in the problem solving process. Skills can be cognitive (including the use of logical, intuitive and creative thinking), or practical (including physical agility use of methods, materials, devices and instruments) and social (communication and cooperation skills, emotional intelligence etc.). [1, 2]

Validation of non-formal and informal learning: a series of procedures aimed at assessing the learning outcomes acquired though non-formal and informal learning, including the issuance of a certificate by a responsible institution in accordance with pre-defined and accepted criteria and standards. [2]

Workload: the estimate time for all learning activities, which is necessary for the achievement of certain learning outcomes. [2]

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[2] In education, as defined in the ECTS Users' Guide, quality assurance means the process or set of processes adopted nationally and institutionally to ensure the quality of educational programmes and qualifications awarded. [10].

Acronyms

CoE	Council of Europe
EQF	the European Qualifications Framework for lifelong learning
EQAR	European Quality Assurance Register for Higher Education
ECTS	European Credit Transfer and Accumulation System
ESG	Standards and Guidelines for Quality Assurance in the EHEA
ESCO	European Skills, Competences, Qualifications and Occupations
EU	European Union
ISCED	International Standard Classification of Education
NQF	National qualifications framework
OER	Open educational resources
QF-BiH	Qualifications Framework in Bosnia and Herzegovina
QF-EHEA	Qualifications Framework for the European Higher Education Area

Executive summary

Higher education systems in Europe and across the world increasingly see it as a priority to prepare qualified individuals who can respond successfully to the changing economic and other societal challenges in the globalised world. The rapid development of modern technology impacts on labour markets and citizens in all member states of the European Union as well as those that wish to join the EU (including Bosnia and Herzegovina) and this presents numerous educational challenges. An important part of current educational reform is the development of qualifications frameworks based on learning outcomes. In this context, the relevance and quality assurance of qualifications is of paramount concern. This necessitates the systemic validation of education and training in each country in alignment with education systems in other countries via the two common European reference meta-frameworks: the European Qualifications Framework for Lifelong Learning (EQF) and the Qualifications Framework of the European Higher Education Area (QF-EHEA).

Bosnia and Herzegovina, as many other countries in Europe, seeks to achieve major educational benefits by effectively implementing its qualifications framework - the Baseline Qualifications Framework in Bosnia Herzegovina (QF-BiH). This requires the cooperation and involvement of stakeholders in the higher education system to aid its ongoing development and effective implementation. This manual is designed to support and facilitate this process.

The manual is closely linked to the *'Action Plan for the Development and Implementation of the Qualifications Framework in Bosnia Herzegovina for the period 2014-2020'* (see section 1.1 of this manual and Annex 9.1). The manual is specifically a product of expert groups from different sectors[3] who developed examples of occupational and qualifications standards in the Joint European Union/Council of Europe (EU/CoE) 2013-2015 project *'Strategic Development of Higher Education and Qualifications Standards'*[4].

The manual is designed to explain and aid the ongoing development of multiple qualifications standards and occupational standards in BiH. Qualifications standards are descriptors that set and maintain subject-specific quality standards in a range of academic subjects. Occupational standards are statements of the standards of knowledge, skills and competences individuals must achieve when carrying out functions in the workplace.

In order to establish and maintain the quality and standards of qualifications it is important to develop appropriate external descriptors for practical use by the main stakeholders in higher education systems, including external quality assurance bodies and higher education institutions (HEIs). There are a number of similar documents to the BiH qualifications standards developed by EU member states and other countries for this purpose, e.g the UK *'Subject Benchmark Statements'* that are part of the UK QAA *'Quality Code'*[5] and the *'Tuning Educational Structures in Europe'* project which produced numerous 'subject reference points'[6].

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[3] Term sector here means field, subject area, discipline such as: economy, ICT, etc.

[4] Details of this project can be accessed at: http://pjp-eu.coe.int/en/web/bih-higher-education/objectives.

[5] The UK Higher Education Quality Code and numerous Subject Benchmark Statements can be accessed at: http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code.

[6] The Tuning Educational Structures in Europe project can be accessed at: http://www.unideusto.org/tuningeu.

The purpose of such documents for higher education can be different, for example, to: establish and safeguard academic standards in higher education in a country; ensure quality of learning opportunities; provide transparent information and use of qualification titles. The common point is that they act as external reference points that lie between generic qualification framework level descriptors and academic and professional qualifications. They provide detailed subject-specific guidance for those involved in curriculum development and quality assurance.

The manual is designed as a practical staff development tool for use by trainers for the capacity building of staff. It links with numerous BiH educational reforms and previous educational development projects (see section 1.2 of the manual). Its development is intimately linked to the training of trainers module and workshop materials reproduced in Annexes 9.4 and 9.5.

The manual is divided into nine chapters with various sub-sections designed to aid its function as an educational manual: Chapter one introduces the overall higher education developmental context in Europe and BiH; Chapter two establishes key educational concepts and tools that underpin European higher educational development; Chapter three outlines the fundamental aspects of quality assurance and standards that are essential for European higher education reform; Chapter four examines in depth the development of qualifications standards based on the experience of the project work; Chapter five outlines the development of occupational standards; Chapter six outlines the training of trainers; Chapter seven outlines next steps and recommendations to the Action plan for development and implementation of QF-BiH for period 2014-2020; Chapter eight lists the bibliography used.

These chapters are followed by chapter nine - a set of six annexes (i) the Action plan for development and implementation of QF-BiH for period 2014-2020 (this includes the baseline QF-BiH); (ii) Examples of five qualifications standards produced by working groups in component two of the joint EU/CoE project; (iii) Examples of two occupational standards produced by working groups in component two of the joint EU/CoE project; (iv) The training module designed to train BiH trainers in the development and implementation of qualifications and occupational standards in the context of associated higher education reforms in BiH and the rest of Europe; (v) The training workshop agenda that details the intensive capacity building programme to be used in future trainings[7]; and (vi) the list of BiH trainers in the development and implementation of qualifications and occupational standards .

Overall the manual is designed to clarify the role of occupational and qualifications standards and how to gain most benefit from them in BiH at individual, institutional and the country level. Among other things, the manual advises and supports higher education institutions in the development of innovative, high quality and European-recognised study programmes.

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[7]   Further detailed workshop materials and resources associated with the training of BiH trainers can be accessed from: http://pjp-eu.coe.int/en/web/bih-higher-education/home.

1. Introduction

1.1. The Action Plan for development and implementation of the QF in BiH 2014-2020

The Council of Ministers of Bosnia and Herzegovina has adopted a serious of decisions and documents necessary for development and implementation of the Baseline Qualifications Framework in Bosnia Herzegovina (QF-BiH). Among these documents is the Action Plan for development and implementation of the QF-BiH 2014-2020 (reproduced in Annex 9.1 of this manual).

The Action Plan defines the vision and mission, goals and aims of the QF-BiH. It includes also a SWOT analysis of all important activities and their outcomes and responsibilities.

All proposed activities of the Action Plan are organised within five interrelated work-packages (WP), as follows:

- WP-1: Designing the QF-BiH (all components, procedures, bodies, guidelines).
- WP-2: Testing the QF-BiH (examples of occupational and qualifications standards, programmes, procedures and bodies, IT platform).
- WP-3: Development of QF-BiH documents and their implementation (legal documents at appropriate levels of governance, improvement of quality assurance systems, self-certification and reference reports to the EQF and QF-EHEA, relevant bodies, IT platform, occupational and qualifications standards, modernisation of programmes, recognition of foreign qualifications).
- WP-4: Developing human resources and quality of implementation of the Action Plan and QF-BiH (training, international cooperation, dissemination of lifelong learning, quality assurance of the Action Plan implementation and the QF-BiH).
- WP-5: Review and further development of the QF-BiH (analysis of the QF-BiH implementation, changes of amendments, validation of non-formal and informal learning, revision of self-certification and referencing reports).

This Action Plan facilitates a harmonisation of main educational international projects in BiH. It ensures that outcomes of those projects have the best possible fit to the interest of BiH, including the sustainable modernisation of the higher education and quality assurance system. This creates a firm base for the quality of qualifications and their relevance to the labour market, further education or other needs of individuals and society.

The development and implementation of occupational and qualifications standards are a key part of the Action Plan.

1.2. Current and previous joint EU/CoE projects in BiH

In BiH there has been already a set of activities and relevant international projects, which already fit very well to the Action Plan, such as the joint European Union/Council of Europe (EU/CoE) 2013-2015 project "*Strategic Development of Higher Education and Qualification Standards*".

The overall objective of this project was to advance the reform of the higher education system in BiH and to support the development of the economy and society in line with the objectives of the European Higher Education Area (EHEA). The specific objective of the project was to increase the mobility and employability of the labour force within BiH and with other countries through the further development of the qualifications system, and harmonised with European recommendations, and in accordance with the needs of the labour market and society. The project also aims to strengthen the higher education system by developing and applying common standards for higher education qualifications across the country.

The specific objectives of the project were to develop:

• Priorities for further development of higher education in BiH,
• Occupational standards and qualifications standards (subject benchmarks) for selected HE qualifications,
• Manual for further development and use of qualifications standards in BiH,
• Capacity building for further development and use of qualifications standards and occupational standards in BiH and make recommendations for further development and implementation of BiH Qualifications Framework, including training modules.

The project also supported finalisation of the Action Plan for development and implementation of the QF-BiH 2014-2020.

Beside the above-mentioned project, other previous joint EU/CoE projects, which are related to the QF-BiH development, are as follows:

• "*Strengthening Higher Education in BiH III*". This project was focused on the implementation of four of the Seven Key Strategies and Guidelines. The project assisted the Agency for the Development of Higher Education and Quality Assurance (HEA) and BiH universities with drafting the corresponding criteria and procedures and to prepare them for the actual external evaluation in line with the European standards and guidelines. In addition, the project assisted BiH universities and the BiH Rectors Conference with the implementation of the QF-BiH. The assistance was accompanied by a set of recommendations related to the legislative framework for higher education and a proposal for a single expert body for taking forward the strategic implementation of Bologna reforms in BiH. The project developed the 2011 "*Curriculum Development Good Practice Guide*" and a set of templates for curricular design and program validation[8].
• "*Strengthening Higher Education in BiH II*". This project assisted BiH to fulfil its commitments from the Bergen Communiqué in May 2005: namely the preparation and introduction of state-level strategies and guidelines for the recognition of qualifications and for the evaluation and accreditation of higher education institutions and programs. The outcome, "*Seven Key Strategies and Guidelines to Implement the Bologna Process in BiH*", was adopted by the BiH Council of Ministers in December 2007 and published in the BiH Official Gazette 13/08.
• "*Modernising Governance and Management Capacities of Universities in BiH*". The project carried out an institutional evaluation with all public universities in BiH in cooperation with the European University Association (EUA), which provided professional expertise on the core issues of higher education reform and governance in BiH and created practical tools for their implementation, such as Prototype statute and Priorities for management of integrated university in BiH.

The above projects are focused on quality assurance elements in the higher education system and naturally fit with the development of occupational and qualifications standards.

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[8] This text is available in English and local languages and can be downloaded from: http://pjp-eu.coe.int/en/web/bih-higher-education/she-iii-2009-2011

1.3. Other EU projects in BiH and publications

Besides the series of joint projects of the European Union and the Council of Europe, through different programmes many other international key donors have supported reform and modernisation of qualifications system in BiH, covering general education, vocational education and training and higher education. As outcomes of those projects, a considerable number of relevant documents exist, which give recommendations and the basis for new legislative frameworks, new bodies and procedures. Examples of these documents are "*Roadmap for the development of occupational standards in BiH*", "*Handbook: Development of occupational standards*", "*Curriculum Development Good Practice Guide*", and the European Training Foundation (ETF) "*BiH Impact assessment of vocational education and training reform*", etc.

The last mentioned document, for example, assesses the impact of VET reform in Bosnia and Herzegovina between 1998 to 2009 with particular focus on the VET Development Strategy and Action Plan for the period between 2007 and 2013 in terms of progress in six priority areas: legislation; institutional development; classification of occupations, standards and curricula and the QF-BiH; management and administration in VET; teacher training; and adult education.

In addition, an important current EU project, relevant for QF-BiH development and implementation is the Tempus project "*BiH Higher Education Qualifications Framework - BHQFHE*"[9]. The main objectives of this new project are to strengthen and support institutional capacities for the QF-BiH development in higher education, and to create the implementation model of the QF-BiH in higher education in compliance with EQF and the QF-EHEA reference and self-certification criteria and procedures. In addition, the project aims to develop more qualifications standards for different sectors, capacity building to write and validate effective learning outcomes in higher education relevant to labour market and other needs. The project includes the development of study programmes using qualifications standards, and the finalisation of the self-certification report referencing the QF-BiH to the QF-EHEA.

1.4. Priorities of recent EHEA Ministerial Conferences

The ministers at the Ministerial Conference in Bucharest in 2012 set the following priorities for the period between 2012 and 2015:

- Reflect thoroughly on the findings of the 2012 Bologna Implementation Report and take into account its conclusions and recommendations;
- Strengthen policies of widening overall access and raising completion rates, including measures targeting the increased participation of underrepresented groups;
- Establish conditions that foster student-centred learning, innovative teaching methods and a supportive and inspiring working and learning environment, while continuing to involve students and staff in governance structures at all levels;
- Allow EQAR-registered quality assurance agencies to perform their activities across the EHEA, while complying with national requirements;
- Work to enhance employability, lifelong learning, problem-solving and entrepreneurial skills through improved cooperation with employers, especially in the development of educational programmes;
- Ensure that qualifications frameworks, ECTS and Diploma Supplement implementation is based on learning outcomes;
- Invite countries that cannot finalise the implementation of national qualifications frameworks compatible with QF-EHEA by the end of 2012 to redouble their efforts and submit a revised roadmap for this task;
- Implement the recommendations of the strategy "Mobility for better learning" and work towards full portability of national grants and loans across the EHEA;
- Review national legislation to fully comply with the Lisbon Recognition Convention and promote the use of the EAR-manual to advance recognition practices;
- Encourage knowledge-based alliances in the EHEA, focusing on research and technology.

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[9]   For more information on the project go to: http://www.bhqfhe.eu/en/

A more recent Conference of Ministers of the European Higher Education Area took place in Yerevan, Armenia, on 14-15 May 2015. Ministers debated progress made on Bologna reforms since the previous conference in Bucharest in 2012, with an underpinning of evidence provided by the '*European Higher Education Area in 2015: Bologna Process Implementation Report*' (a reporting exercise coordinated by the Bologna Reporting Group, supported by Eurydice and Eurostat)[10].

At Yerevan, Ministers set out their future commitments to the Bologna reforms[11]. Ministers adopted updates to European tools supporting quality, transparency and mobility, (revised European Standards and Guidelines for Quality Assurance, revised ECTS Users' Guide, and a European Approach to the Quality Assurance of Joint Programmes).

Ministers agreed, inter alia, recommendations from the Bologna Structural Reforms Working Group, to modernise the QF-EHEA, to include short cycle qualifications, and made a request to the European Commission, the Council of Europe and UNESCO to review the Diploma Supplement and to ensure the adoption of the same revised version in both frameworks.

Ministers noted that structural reforms were often uneven and the tools are sometimes used incorrectly or in a bureaucratic and superficial way. The EHEA faced serious challenges confronting economic and social crisis, dramatic levels of unemployment, new migration patterns, extremism and radicalisation. They indicated their support for higher education institutions in enhancing their efforts to promote intercultural understanding, critical thinking, political and religious tolerance, gender equality, and democratic and civic values.

The Yerevan Communiqué identified the following EHEA goals:

• Enhancing the quality and relevance of learning and teaching (main mission);
• Fostering the employability of graduates throughout their working lives;
• Making our systems more inclusive;
• Implementing agreed structural reforms.

Finally, they made a number of further important commitments including to: include the short cycle qualifications in the overarching QF-EHEA; ensure that competence requirements for public employment allow for fair access to holders of first degrees; review national qualifications frameworks, with a view to ensure learning paths within the framework provide adequately for the recognition of prior learning; ensure that qualifications from other EHEA countries are automatically recognised at the same level as relevant domestic qualifications.

1.5. Benefit for BiH authorities and stakeholders

By implementing the QF in BiH along with other associated reforms, it is reasonable to expect a set of benefits for different institutions, bodies and individuals (BiH authorities, higher education institutions, labour market stakeholders, students, employees, employers and others) in some or all of the following areas:

• Increasing transparency, coherence and consistency of qualifications, by implementation of effective learning outcomes in relation to their assessment;
• Increasing the relevance and quality of qualifications, by development and implementation of common standards;
• Increasing the currency of qualifications, by using QF-BiH to support quality assurance systems of assessment, certification, and recognition;
• Clarification of learning pathways, progression and lifelong learning, by using units of learning outcomes and credits and breaking qualifications into smaller parts;
• Increasing the portability of qualifications and coherence of national reform polices, by using the QF-BiH as a platform for stakeholders for strengthening cooperation and commitment;
• Broadening the range of learning forms recognised (non-formal and informal learning);

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[10]   This can be downloaded from: http://www.ehea.info/news-details.aspx?ArticleId=385

[11]   The 2015 Yerevan Communiqué can be downloaded from: http://www.ehea.info/Uploads/SubmitedFiles/5_2015/112705.pdf

- Increasing the basis for international recognition and co-operation, understanding and comparison, by referencing the QF-BiH to the EQF and the QF-EHEA, which facilitates mobility and lifelong learning.

Examples of specific benefits for different groups are as follows:

- Higher education institutions:
    – Coherent education system,
    – Guidance for credit accumulation and transfer,
    – Competent teachers and assessors, competent institutions,
    – Ensures consistency of qualification titles,
    – Recognition and validation of non-formal and informal learning.
- Employers:
    – Better understanding of qualifications,
    – Linking study programmes to labour market needs,
    – Competent work force,
    – Using new technology to create new jobs.
- Students and employees:
    – Transparent access to education and progression,
    – Better understanding of qualifications level and title,
    – Better understand where their qualifications fit in relation to their purpose,
    – Sustainable employment and promotion of qualifications,
    – Lifelong learning and further access to higher education,
    – Starting learning at the level that suits students and build up their qualifications as their needs and interests develop and change over time,
    – Quality and relevance of their learning,
    – Encourages lifelong learning and assists to plan the careers, and learning at whatever stage
    – Recognition and validation of non-formal and informal learning,
    – Internationally and nationally recognised qualifications – for jobs and further education.
- Unemployed:
    – Creation of new jobs,
    – Lifelong learning and further access to higher education,
    – Recognition and validation of non-formal and informal learning.
- Society as a whole:
    – A proud learning nation with the ability to adapt to change,
    – Active citizens in democratic societies,
    – Building citizenship and democratic values,
    – Social inclusion, etc.

1.6. Purposes and status of the Manual

In Bosnia and Herzegovina, as in many countries in Europe, to achieve all benefits associated with the successful implementation of the QF-BiH it is important to include and inform stakeholders in the higher education system. This facilitates its development and that of qualifications standards and occupational standards.

The Baseline and the Action Plan identifies the QF-BiH as the main instrument for reform and modernisation of the qualifications system in BiH. It is an instrument necessary for assuring the development and effective use of occupational and qualifications standards to support quality assurance systems and the improved relevance of qualifications to a wide spectrum of individuals and society's needs. This involves the effective implementation of learning outcomes, the assessment of learning outcomes and certification of qualifications, development of professional competences and validation of education providers.

The purposes of this manual are to facilitate development and implementation of the QF in BiH in line with the Action Plan, focusing on the higher education system. The manual supports development of qualifications and occupational standards and their usage at all levels in higher education (both, academic and higher professional qualifications).

The manual is written for those individuals and stakeholders who are responsible for the initiation, development, implementation and operation of internal and external quality assurance systems in higher education, and curricula developers. These individuals and institutions operate at different levels and in different contexts (universities and other higher education institutions, quality assurance bodies, ministries, cantonal authorities, recognition bodies, labour market services, employers, public, private and voluntary sectors).

The ambition of the manual is to clarify the role of occupational and qualifications standards and their benefits, at individual, institutional and the country level. The manual advises and supports higher education institutions to develop innovative study programmes.
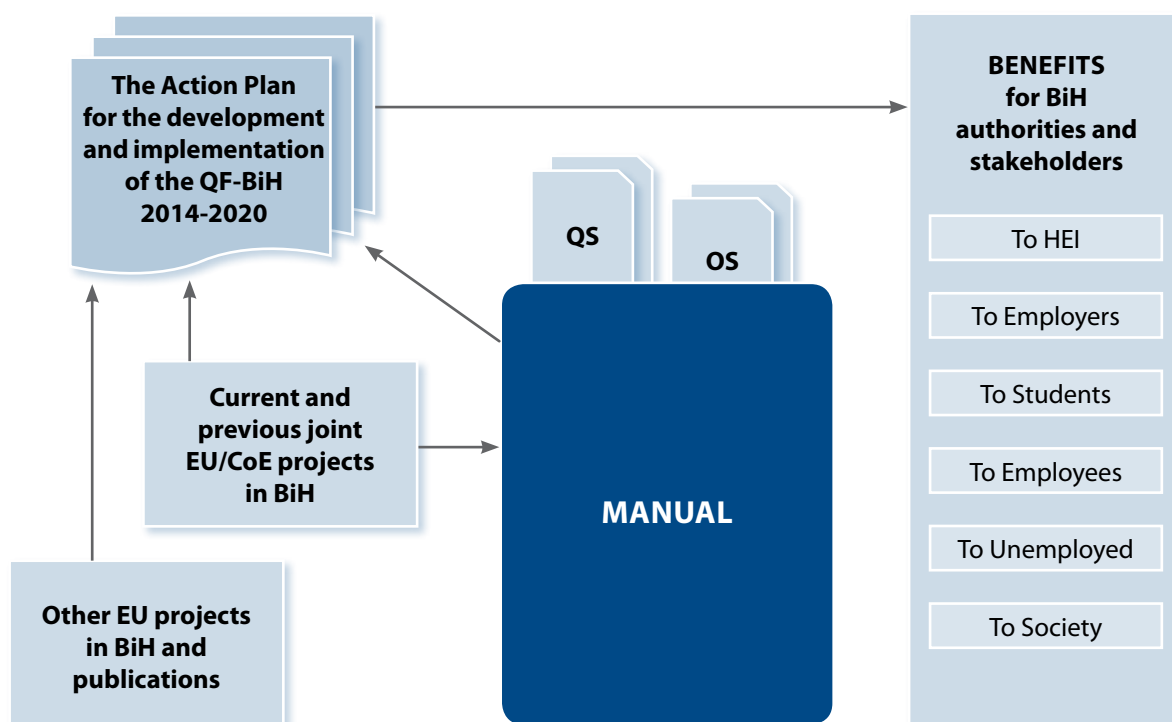
Illustration 1: Benefits from the QF-BiH implementation and the purpose of the Manual.

2. Key concepts in the QF-BiH

In a similar way to national qualifications frameworks in other countries, the QF-BiH brings more transparency to the qualifications system by introducing a minimal number of effective and well-defined concepts, such as qualification and learning outcomes.

2.1. Qualification and its characteristics

As it is written in the EQF Recommendation [1] and in the BiH Action Plan [2], qualification means a formal outcome of an assessment and validation process, which is obtained when a competent body determines that an individual has achieved the learning outcomes as per the defined standards.

This definition serves as a basis for a common understanding in the context of the EQF implementation. However, the concept of "*qualification*" in European countries differs slightly as regards to sources, degree of details, form and structure. Differences not only occur across countries, but across sectors of education and training and between institutions within a country. But, in each definition, learning outcomes are now stressed as the most useful way to express the qualification. S. Bergan gives a detailed theoretical overview on the concept of qualifications [12].

If correctly written, the most visible part of a qualification – the title – appropriately describes the qualification, both for experts and non-experts. The title of the qualification is compact and the most important information for all stakeholders – employers, providers, employees, students, qualifications authorities, quality assurance bodies and even parents.

Usually, the title consists of two main parts:

- Generic part, and
- Subject specific part.

The generic part represents the type of the qualification (in BiH: BSc, BA, MSc, MA, PhD [13]) fully linked to the QF-BiH levels. The subject specific part represents profile (subject specific field or discipline) of the qualification (Chemistry, ICT, Ecology, Medicine, etc.). It is necessary to develop precise rules on how to use types of qualifications in BiH with their appropriate titles.

The level of a qualification is a new concept in the qualifications system in BiH, as introduced and used by the QF-BiH. It denotes the complexity of achieved learning outcomes of the qualification. The level of a qualification in the QF-BiH varies between 1 and 8. Higher education qualifications in BiH can have levels between 6 (currently, the level 5 is not open for higher education) and 8.

Each level in a qualifications framework usually has one or more type of qualification. But it is not possible to have the same type of qualifications at more than one level. For example, "Master" type of qualifications is at the level 7 in the QF-BiH, and never on level 6 or 8. The "Bachelor" type is only at the level 6, etc. But sometimes there is more than one type at the specified level. For example, in some NQFs there are "Master" and "Specialist" at the level 7. At the level 8, there are "Doctor of Science", "Doctor of Arts", and/or "Doctor of Philosophy". The QF-BiH will define all types of qualifications in the qualifications system in BiH.

All levels (or cycles) in the Bologna process are described by what are known as the Dublin descriptors. These include information on the ECTS credits allocated to each cycle. For example, all first cycle qualifications should have 180-240 ECTS credits. Qualifications with less than 180 ECTS credits previously could not be included in the first cycle, and are described as "short cycle" qualifications, which is level 5 in the EQF or described as sitting within the first cycle in the QF-EHEA. The Yerevan 2015 Ministerial Communiqué formally included the short cycle in the QF-EHEA based on the appropriate Dublin descriptor.

It is important to note that qualifications with 180 ECTS credits and those with 240 ECTS credits are at the same level 6 in the QF-BiH (first cycle of the QF-EHEA). The latter will normally have more learning outcomes but does not reach a higher standard.

The basic characteristics (or components as outlined in [12]) of all quality assured qualifications in any NQF and the QF-BiH have three elements[12] defined using learning outcomes:

• Level
• Volume, or workload (expressed in ECTS in higher education), and
• Profile.

2.2. Learning outcomes

In the BiH Action Plan, learning outcomes have been introduced as statements of what a learner knows, understands and is able to perform on the basis of a completed learning process, defined in terms of knowledge, skills and competences.

The above simple and clear definition of learning outcomes can become more complex when considering the level of details that should be used to write effective learning outcomes and how to align them to educational delivery, assessment criteria and procedures. When considering how learning outcomes should be written so as to be useful, too detailed statements can be confusing, but too general statements can be meaningless. This means that the most important consideration of all is how to write learning outcomes that are fit for purpose, including their relevance to labour market, further learning needs or other individual or society needs.

In addition to the definition in the QF-BiH, there are other relevant, slightly different, definitions of learning outcomes. For example, within the Bologna process, learning outcomes are defined as statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning. Also, S. Adam defines learning outcome as a written statement of what the successful learner is expected to be able to do at the end of the module/course unit or qualification [6]. These definitions of learning outcomes do not differ significantly from each other. One definition stresses one aspect more than another. All of them stress the importance of successful completion of learning process.

In line with the EQF Recommendation, learning outcomes are expressed in the QF-BiH in terms of:

• Knowledge,
• Skills, and
• Competence.

Learning outcomes are used in different contexts and for different purposes, for example in the educational and occupational contexts. In the educational context learning outcomes are used in qualifications standards, study programmes, and component units or modules.

In the occupational context, learning outcomes are embedded in occupational standards, job advertisements and recruiting systems. The level of detail, style and hierarchy of expression of learning outcomes depends on the contextual setting.

The purpose of learning outcomes in occupational standards is to define all groups of tasks and required knowledge, skills and competences of a given occupation or job. In occupational standards, learning

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[12] Sjur Bergan in his book *'Qualifications-introduction to a concept'* highlights and separates a further two elements: quality and learning outcomes.

outcomes can serve as a basis for defining work practices, lifelong learning, recruitments, etc. Occupational standards usually specify the professional tasks, skills and activities the holder of a qualification has to have to be able to safely and expertly carry out their work function.

In study programmes, learning outcomes define outcomes that a successful student will have acquired after their learning activities. They guide students and teachers in the teaching and learning process and choice of methodology. In study programmes, learning outcomes explain to students what they are expected to know, understand and be able to do at the end of the study programme (qualification), module or unit of study.

The levels of detail of learning outcomes are different when they are applied to whole programmes of learning (where learning outcomes are broader) than in modules or unit components (where learning outcomes are more specific). Learning outcomes at the level of study programmes are statements of what a learner is expected to know and be able to do at the end of the whole study programme. Therefore they are written in a broad way that takes account of all learning outcomes that are associated with all units or modules within the study programme. They are hierarchically above learning outcomes at the unit or module level.

2.3. Qualifications Framework

The interest for the development and implementation of national qualifications frameworks in many countries originates in part from a desire to increase the competitiveness of individuals and the national economy and thus to increase living standards. Most national qualifications frameworks classify qualifications in a similar way as that expressed in the following definition of the QF-BiH:

'an instrument for the classification of qualifications acquired in Bosnia and Herzegovina, which provides the basis for transparency, access, progression, acquisition and quality of qualifications'.

The role of national qualifications frameworks is usually different in different countries. They vary from simple communication devices that reflect the status quo (for the better description of existing qualifications and the system) through to dynamic reforming, transformational tools designed to modernise educational systems.

The Qualifications Framework in BiH is a comprehensive and reforming qualifications framework, covering all education and training sub-systems: general education, vocational education and training, and higher education. It has the potential (in conjunction with other reforms) to bring a number of benefits for individuals and the society, such as:

- Better communication among stakeholders, leading to partnerships and better relationships between education and training systems, and economic growth
- More prominent role for labour market information and greater involvement of social partners
- Better understanding of qualifications, within the country, sectors and internationally
- Inclusion of all individuals in education and training throughout life
- Developments in all education and training sub-systems by introducing flexibility and promoting lifelong learning policies (e.g. modularisation, credit arrangements, recognition and validation of non-formal and informal learning)
- Modernisation of qualifications
- More opportunities for development of cross-sectoral learning outcomes
- Increased international mobility.

The objectives of the QF-BiH includes:

- Understanding different types of qualifications and their relationships
- Comprehensible presentation of education achievements to employers, learners and parents
- Guiding individuals in the selection of education and career; facilitating mobility and more transparent access to education throughout the life of an individual
- Facilitating identification and recognition of BiH qualifications abroad and of foreign qualifications in Bosnia and Herzegovina
- Creating the pre-conditions for introducing a quality assurance system for existing and new qualifications

- Contributing to quality employability
- Creating the pre-conditions for the development of a system of evaluation and recognition of competences acquired through non-formal and informal education / learning
- Improvement of co-operation with all social partners
- Promoting education.

Most national qualifications frameworks in Europe are being built to become a part of wider meta-frameworks – the EQF and/or the QF-EHEA. There are currently 36 countries participating in the implementation of the EQF. The QF-EHEA is a meta-framework for the EHEA, and there are 48 countries participating in its implementation.

The effective classification of new and legacy qualifications in national qualifications frameworks requires clear standards, criteria and procedures.

2.4. Levels and level descriptors

The purpose of level descriptors is to ensure the transparent allocation of qualifications to particular levels in the qualifications framework. Level descriptors also facilitate comparisons between qualifications in different sectors and countries.

Level descriptors in the QF-BiH are made sufficiently distinct from one level to another, thus indicating growth of complexity and the depth. All levels are organized in such a way that the higher reference levels automatically include all that is contained by the lower levels.

Three categories (or domains) are used in the level descriptors to describe learning outcomes across each of the eight levels of the QF-BiH:

- Knowledge
- Skills, and
- Competence.

Level descriptors play a key role within the process of development of qualifications standards. Level descriptors of all levels in the QF-BiH are introduced in the Baseline of the QF-BiH, and presented in this manual in the Annex 9.1.

2.5. ECTS credit system

The volume or size of qualifications in the Bologna process is determined in terms of total time spent on achievement of all required learning outcomes and expressed in terms of ECTS credits. Within the Bologna process, it is suggested that the volume of learning outcomes acquired in a time between 25 and 30 hours is equal to 1 ECTS, where 1 hour means 60 minutes. However, different countries are free to choose their own, but equivalent, credit systems.

In higher education systems in BiH, according to the QF-EHEA, the ECTS credit system has been used for a decade. For example, all first cycle qualifications (level 6 in the QF-BiH) should have 180-240 ECTS.

ECTS credits describe one of key characteristics of qualifications and qualifications standards in the QF-BiH. A revised *'ECTS Users' Guide'* was adopted by Ministers at Yerevan as an official EHEA document[13].

2.6. Lifelong learning and key competences

Lifelong learning has become a necessity for all citizens in modern life. The knowledge-based economy, new technologies, the growing speed of technological changes and globalisation all influence the needs to improve knowledge, skills and competence of citizens.

In European countries there is a set of new instruments, which facilitate lifelong learning preparing learners for the above-mentioned challenges. Examples include the ESCO, Europass, the EQF, the QF-EHEA, and all

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[13]   This can be accessed at: http://www.ehea.info/news-details.aspx?ArticleId=370

referenced and self-certified national qualifications frameworks. Using learning outcomes as a base, all these instruments facilitate lifelong learning and mobility of citizens.

In the Action Plan for the development and implementation of the QF-BiH, lifelong learning has been introduced as a concept, which integrates formal, non-formal and informal learning in order to achieve learning outcomes for continuous improvement of quality of life.

As globalisation continues to confront all countries, including BiH, with new challenges, each citizen needs a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world. Employees who leave or lose their jobs must be able to transfer knowledge, skills and competences to a new enterprise, sector or even a new country, or even all of those combinations. The European reference framework for key competences for lifelong learning sets out eight main groups of key competences for lifelong learning (knowledge, skills and competence) necessary for personal fulfilment, active citizenship, social cohesion and employability in a globalised knowledge society. They are: Communication in the mother tongue; Communication in foreign languages; Mathematical competence and basic competences in science and technology; Digital competence; Learning to learn; Social and civic competences; Sense of initiative and entrepreneurship; Cultural awareness and expression [8].

Key competences for lifelong learning should be carefully integrated in qualifications and occupational standards.

2.7. Lifelong learning and validation of non-formal and informal learning

One of the objectives of the QF-BiH is to facilitate lifelong learning of all citizens and to support the validation and recognition of non-formal learning, which is open for all adults.

As key elements on the QF-BiH, qualifications standards and occupational standards have potential in supporting lifelong learning, including non-formal and informal learning and its validation.

Occupational standards in the QF-BiH give information to all users on the required knowledge, skills and competence for a particular occupation. This means that formal and non-formal learning providers can benefit in providing programmes for the achievement of knowledge, skills and competence. Individuals can benefit by participating in such programmes, including informal and self-learning by using open educational resources. Learning can be effectively organised in different ways. The role and relevance of different cross-sectoral knowledge, skills and competence should be made more transparent to all users.

Qualifications standards in the QF-BiH bring additional support for lifelong learning, giving advice and clear requirements for providers on how to organise formal accredited study programmes leading to a particular qualification. They provide the base also for validation of achieved knowledge, skills and competence achieved by non-formal and informal learning.

The QF-BiH, by effective implementation of qualifications and occupational standards, brings more flexibility to the qualifications system in BiH and at the same time a strong and trustful quality assurance system.

2.8. Recognition and validation of non-formal and informal learning

In general, there are different types of learning modes for the achievement of learning outcomes – formal, non-formal and informal learning, and each of them has a fundamental role and value for learners, employers and benefits all society.

In the QF-BiH, formal education is defined as learning guided by a teacher or an instructor, acquired in educational institutions, in compliance with curricula approved by competent education authorities.

Non-formal learning means an organised process of learning and education focused on improving, specialising or amending learning outcomes in accordance with special programmes implemented by

education and training providers (regular schools, training centres, companies, agencies, etc.). Informal learning means spontaneous learning and acquiring of knowledge and skills through everyday activities.

The EU Council recommendation on the validation of non-formal and informal learning gives the basis for development and implementation of the validation process in EU member states, offering individuals the opportunity to demonstrate what they have learned outside formal education and training and to make use of that learning for further careers and further learning, and with due regard for the principle of subsidiarity.

The purpose of the validation of non-formal and informal learning is to make visible the entire scope of knowledge, skills and competence held by an individual, irrespective of the context where the learning originally took place. For an employer it is a question of human resource management, for individuals a question of having the full range of learning outcomes valued, and for society a question of making full use of existing learning outcomes, thus avoiding waste and duplication.

The validation of non-formal and informal learning is a process of confirmation by an authorized body that an individual has acquired learning outcomes measured against a relevant standard. According to the EU recommendation [3], the validation process should consist of the following four distinct phases:

- Identification of an individual's learning outcomes acquired through non-formal and informal learning, through dialogue of particular experiences of an individual;
- Documentation to make visible the individual's experiences;
- Formal assessment of an individual's experiences;
- Certification of the results of the assessment, which may lead to a partial or full qualification.

An individual can take advantage of any of these phases, either separately or in combination, in accordance with his/her needs [3]. Also, the ESG fully supports the recognition of validation of non-formal and informal learning [7].

According to the Action plan, development of the system for validation of non-formal and informal learning will start at the later stage.

The validation of non-formal and informal learning should be based on qualifications standards in the QF-BiH as well as other learning outcomes identified in individual validated qualifications.

QUALIFICATIONS FRAMEWORK
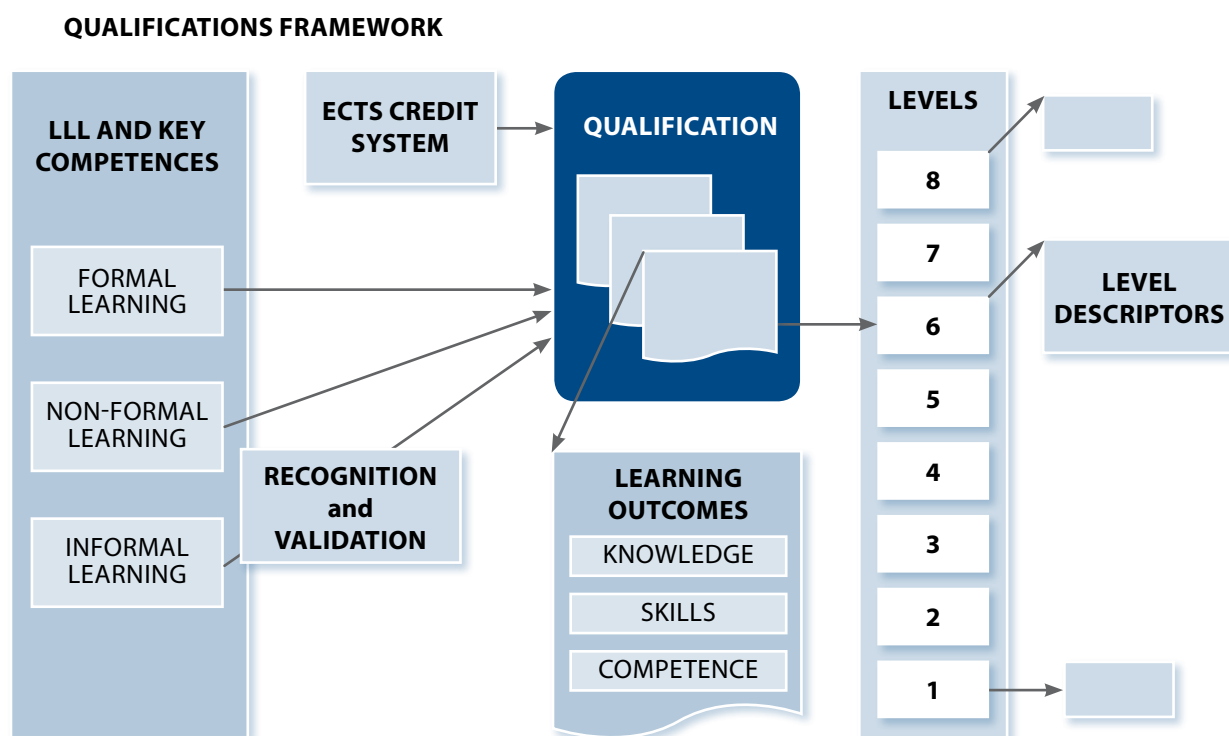
Illustration 2: Key concepts in the QF-BiH.

3. Quality assurance systems in higher education

3.1. University autonomy and quality assurance in higher education

The European University Association (EUA) Lisbon Declaration sets out four basic dimensions of university autonomy [14, 15]:

1. Academic autonomy (deciding on degree supply, curriculum and methods of teaching, deciding on areas, scope, aims and methods of research)
2. Financial autonomy (acquiring and allocating funding, deciding on tuition fees, accumulating surplus)
3. Organisational autonomy (setting university structures and statutes, making contracts, electing decision-making bodies and persons)
4. Staffing autonomy (responsibility for recruitment, salaries and promotions).

University autonomy helps to improve quality standards and improve their response to the needs of society. The European Commission and European governments have also recognised the need for university autonomy strongly linked to university accountability and responsibility.

Successful universities are distinguished by the quality, breadth and depth of their commitment to research, making effective links between research, teaching quality, education and innovation. Modern universities make great contributions to innovative and sustainable social and economic development, focusing on the creation of new jobs, growth, and international attractiveness.

There are several characteristics of effective universities and higher education institutions, such as:

- Excellence across all operations, calibrated through external validation
- Research effort, producing internationally recognized research results
- Commitment to research training, especially through PhD programmes, advancing the frontiers of knowledge and contributing to innovation and development
- Commitment to teaching at all cycles, producing broadly educated students able to contribute to the welfare in the country
- Tolerance, recognition and welcoming of competing views
- Having its own priorities, based on mission and strategic development plan and its assessment of society's needs
- Local and national commitments and internationalization
- Transparent governance structure, which protects and supports commitment to characteristics that define sustainable world-class research universities and public responsibilities
- Commitment to human rights, democracy and social inclusion.

Modernised universities have a set of professionals to support management of the university, usually organised within a set of offices, such as: office for internal quality assurance, office for international affairs; office for innovation and technology transfer; business and technology parks with spin-offs; public relation

office. It is important that universities regularly review their mission and strategic plans in the context of local, regional and international needs.

3.2. The concept of quality assurance

In the QF-BiH the qualifications standards and occupational standards support the quality, relevance and constant improvement of qualifications, study programmes and all processes linked to them, such as teaching and learning, assessment, awarding and recognition. Qualifications standards and occupational standards in QF-BiH aid the implementation of the ESG in higher education and share some common principles for quality assurance for other sub-systems in BiH.

Higher education has a specific role in education systems in all countries, giving a base for research and innovation, which all together play a crucial role in supporting social cohesion, economic growth and global competitiveness of individuals and countries. The role of quality assurance is crucial in supporting higher education systems and institutions in responding to different changes while ensuring the qualifications achieved by students remain relevant and at the forefront of institutional missions.

Quality assurance in the EQF is necessary to ensure accountability and improvement of higher education and vocational education and training in all EU member states and countries linked to the EU. Thus, the EQF recommendations establish common principles for quality assurance in higher education and vocational education and training, as written in the Annex III of the EQF recommendations [1].

Higher education institutions and quality assurance agencies use the ESG as a reference document that they must conform to for internal and external quality assurance systems and processes. The ESG are also important for the European Quality Assurance Register in Higher Education (EQAR), which is responsible for the register of quality assurance agencies that comply with the ESG [7].

The revised ESG, adopted in 2015 by the Ministers responsible for higher education, are fully harmonized with the EQF Common principles.

The draft revised ESG were approved by the Ministerial Conference in Yerevan, on 14-15 May 2015. As stressed in the EQF Common principles, the revised ESG cover all main parts of the quality assurance system:

- Internal quality assurance,
- External quality assurance, and
- Quality assurance agencies.

3.3. Internal and external quality assurance in higher education

In the updated revised ESG, there are standards and guidelines for internal and external quality assurance in higher education, including standards for quality assurance agencies [7].

The standards and guidelines for internal quality assurance include:

- Policy for quality assurance
- Design and approval of study programmes
- Student-centred learning, teaching and assessment
- Student admission, progression, recognition and certification
- Teaching staff
- Learning resources and student support
- Information management
- Public information
- On-going monitoring and periodic review of programmes
- Cyclical external quality assurance.

Standards and guidelines for external quality assurance are fully linked to the internal quality assurance, and include:

- Policy
- Consideration of internal quality assurance
- Designing methodologies fit for purpose
- Implementing processes
- Peer-review experts
- Criteria for outcomes
- Reporting
- Complaints and appeals.

Quality assurance agencies should undertake external quality assurance of all relevant activities at higher education institutions on a regular basis, and the revised ESG give standards and guidelines for them, for the following items:

- Policy
- Activities, policy and processes for quality assurance
- Official status
- Independence
- Thematic analysis
- Resources
- Internal quality assurance and professional conduct
- Cyclical external review of agencies.

Qualifications standards play a crucial role in both internal and external quality assurance, particularly within the standard "*1.2 Design and approval of study programmes*" of the ESG.

It is clear that qualifications standards give the base for design and approval of study programmes in the QF-BiH.

3.4. Role of quality assurance agencies and higher education institutions

To ensure the effective work of external quality assurance, it is important that all higher education institutions and the public, including students, parents and employers, trust quality assurance agencies. Therefore, the goals and objectives of the quality assurance agencies must be described and published along with the nature of interaction between the agencies and relevant stakeholders in higher education. The expertise in the agency is increased by inclusion of international members in agency committees.

Quality assurance agencies carry out a variety of external quality assurance activities to achieve different objectives. Among these activities are evaluation, review, audit, assessment, accreditation or other similar activities at study programme and institutional level. A major facet of their work involves quality enhancement.

Quality assurance agencies can also carry out other activities, but a clear distinction between external quality assurance activities and those other fields of work is needed.

In the course of their core external quality assurance activities, quality assurance agencies gain information on study programmes and institutions that can be useful beyond the scope of a single process, providing material for structured analyses across the higher education system. These findings can contribute to the reflection on and the improvement of quality assurance policies and processes in institutional, national and international contexts. Agencies must undertake external quality assurance activities according to the ESG on a regular basis.

Effective quality assurance agencies have clear and explicit goals and objectives that are part of their publicly available mission statement. These are translated into the daily work of agencies. Agencies must ensure the involvement of stakeholders in their governance and work.

3.5. Qualifications standards and quality assurance in higher education in BiH

Qualifications standards in the QF-BiH provide the base for quality assurance of study programmes, and thus there are direct links between qualifications standards and several of the specific standards in the ESG.

Specifically, the standard 1.2 of the ESG, on design and approval of programmes, which focuses on intended learning outcomes, is a standard, which nicely links to the role of qualifications standards in the QF-BiH. Within that ESG standard it states:

"*Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes. The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area*".

Clearly, the process for development and the content of the qualifications standard supports the above standard in the ESG.

3.6. The use of qualifications frameworks in recognition of foreign qualifications

The main tool governing the recognition of higher education qualifications is the 1997 *'Convention on the recognition of qualifications concerning higher education in the European Region'* known as the Lisbon recognition convention. This directly links to a number of subsidiary texts, codes of good practice and tools, including the Diploma Supplement. In addition the 2013 text, *'The European Recognition Manual for Higher Education Institutions - Practical guidelines for credential evaluators and admissions officers to provide fair and flexible recognition of foreign degrees and study abroad (EAR)'*, provides essential reading and good practice on this topic[14].

Usually, individuals face recognition issues when moving across borders, either when returning home after studies abroad, to continue studies at universities in their own countries or when moving to another country to continue studies or to work there. It means that individuals can have different specific interests when applying for the recognition of foreign qualifications, some examples of which are: general or restricted access to higher education; access to professional training; general access to the labour market or access to a specialized area of the labour market; access to a regulated profession.

There are two main cases of recognition depending upon the purpose for which recognition is sought:

- Academic, and
- Professional recognition.

Academic recognition focuses on recognition of periods of study or qualifications issued by an educational institution with regard to a person wishing to continue or to begin studying or to use an academic title.

In academic recognition the main task is to assess whether the applicant is capable of continuing studies in the chosen direction and at the chosen level.

Professional recognition is the recognition of a foreign qualification for the purpose of employment in a certain profession. Professional recognition is defined by UNESCO as the following:

'Professional recognition is the formal acknowledgement of an individual's professional status and right to practice the profession in accordance with professional standards and subject to professional or regulatory controls.'

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[14]   This can be accessed at: http://eurorecognition.eu/Manual/EAR HEI.pdf

In professional recognition it should be explored as to whether the knowledge, professional skills and competence of the applicant are sufficient to pursue a particular profession in the recei ving country.

There are more and more countries using qualifications frameworks to support recognition of foreign qualifications in the context of the Lisbon recognition convention. To facilitate a broader usage of qualifications frameworks, the Council of Europe and UNESCO adopted the recommendations on the use of qualifications frameworks in the recognition of foreign qualifications [9].

The recommendations ask the competent recognition authorities, and the ENIC/NARIC Network to develop a common understanding on how to use national, European or other overarching qualifications frameworks for the purpose of facilitating the fair recognition of qualifications and should identify the opportunities and challenges they present. It is recommended to use qualifications frameworks to make the process easier for competent recognition authorities to assess foreign qualifications.

In that respect, qualifications frameworks should be used while considering the five key elements of any qualification for the purposes of recognition:

• Learning outcomes
• Level
• Workload or volume
• Profile
• Quality.

Qualifications frameworks support the transparency and the quality of the recognition of foreign qualifications [16, 17].

The above five elements are included directly in the qualifications standards of the QF-BiH.
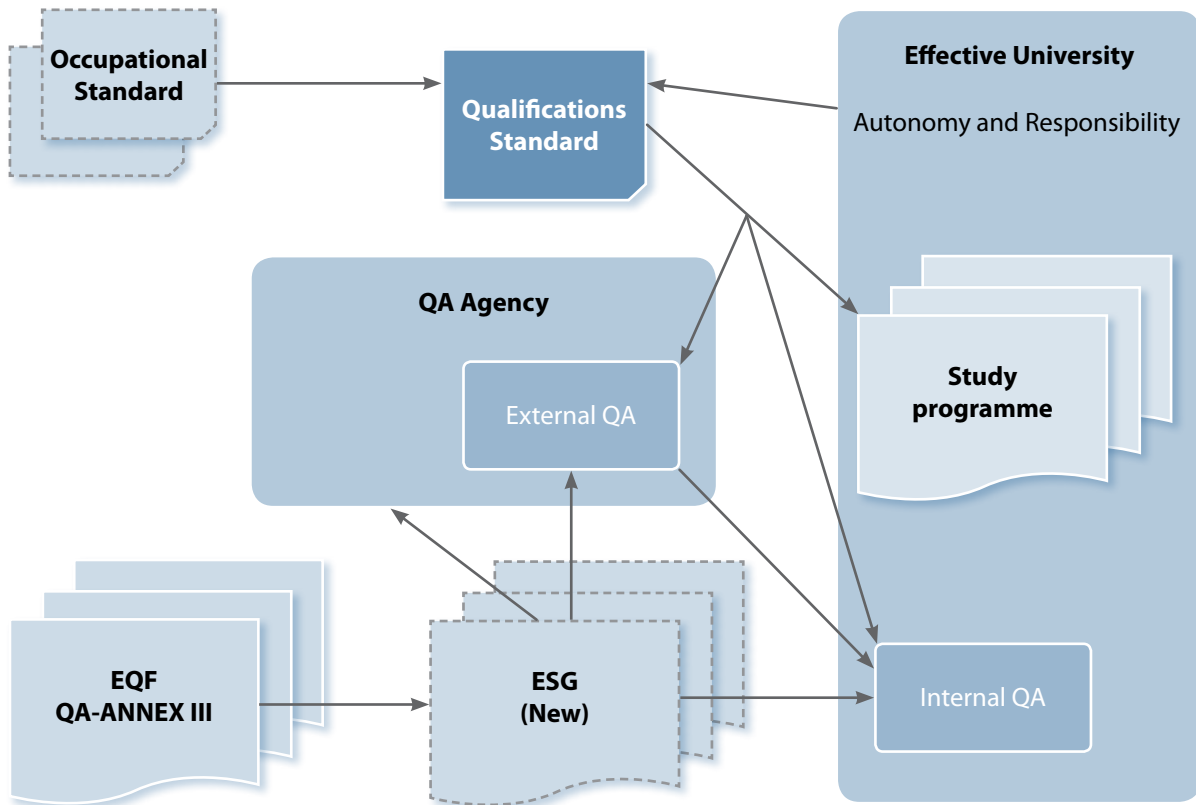
Illustration 3: Quality assurance system in higher education in the QF-BiH.

4. Development of qualifications standards

To meet the expectations about the quality and given standards of qualifications it is important to develop and maintain key documents that will be used by main stakeholders in qualifications systems, including quality assurance bodies and higher education institutions.

There are different documents in use across EU member states and other countries for this purpose in higher education, such as the *'UK Quality Code for Higher Education'* (which includes subject benchmark statements), qualifications standards, national documents based on the *'Tuning Educational Structure in Europe'* project, etc. The purpose of such documents for higher education can be different, for example, to safeguard the academic standards in higher education in a country, to ensure quality of learning opportunities, and to provide transparent information and the consistent use of qualification titles.

In the QF-BiH, such documents are introduced and named as qualifications standards (*standardi kvalifikacija*). They have a similar purpose to the above-mentioned documents in other countries.

The development of a common format for qualifications standards creates consistency and helps different groups of qualifications to be easily understood and used by quality assurance bodies, students, providers, employers and international stakeholders.

Academics from different universities in BiH, and experts, have developed the draft format of qualifications standard (minimum) for the QF-BiH, which has very simple structure, as further described in the section.

4.1. Content of qualifications standards

The QF-BiH has the aim of coordinating and linking together all the elements of the qualifications system in BiH, taking into consideration labour market and the needs of society. For that purpose, the QF-BiH provides criteria and procedures that form the basis of transparency and effectiveness of the qualifications system. This includes access to education, clear progression routes, good assessment of learning outcomes, and high quality qualifications. An important element is the so-called, qualifications standard, the minimum requirements of which are set out below. Examples of qualifications standards can be found in Annex 9.2

The qualifications standard is a document that gives the base for development and validation of effective study programmes in a transparent, simple and responsible way. It includes all the data necessary for determination of the level, minimum number of ECTS credits[15], the core subject profile of the qualification, as well as all the needs for the quality assurance of qualifications.

The minimum and important elements of the qualifications standard in the QF-BiH are drafted as follows:

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[15]   It is very important to distinguish the number of ECTS credits in a particular qualification of 180-240 ECTS for a degree and the total ECTS in a QS - which will always be less to allow some essential freedom/autonomy to curriculum developers.

Minimal elements of qualifications standard

1. BASIC CHARACTERISTICS

1.1 Title(s) of the qualification (Generic + Subject specific)

- *Computer Science Engineer (Generic: Engineer + Subject specific: Computer Science)*
- *Other titles (if necessary)*

1.2 Minimal volume

- *180 ECTS*

1.3 Level

- *QF-BiH: 6*

1.4 Entry routes

- *Completed 4-year secondary education or equivalent (Level 4 qualifications)*

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

Knowledge:

- *Apply basic principles and methods of computer science to a wide range of applications*
- *Apply mathematical and scientific reasoning to a variety of computational problems*
- *Etc.*

Skills:

- *Analyse and compare alternative solutions to computational problems*
- *Apply generally accepted principles to the synthesis and analysis of computer systems*
- *Etc.*

Competence:

- *Work in teams to design and implement solutions to computational problems*
- *Communicate clearly and precisely, both verbally and in writing*
- *Think critically and creatively, both independently and with others*
- *Etc.*

2.2 Ishodi učenja (*Learning outcomes*)

(Groups of learning outcomes; Minimal ECTS; List of learning outcomes)

- *Mathematics; min. 16 ECTS*
    - *Apply the basic concepts of linear algebra, mathematical analysis, discrete mathematics, probability and statistics in complex situations*
    - *Solve problems arising from mathematical situations, providing sound arguments for your view*
    - *Etc.*
- *Theoretical foundations of computer science; min. 10 ECTS*
    - *Apply the basic concepts of data structures and algorithms, theory of computation, formal methods and automata theory in complex situations*
    - *Analyse an algorithm or formal method for solving a specific problem*
    - *Solve problems by using standard algorithms for implementing and manipulating data structures*
    - *Etc.*
- *Programming paradigm and Programming languages, min. 18 ECTS*
    - *Etc.*
    - *Etc.*

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3. RELEVANCE

3.1 Labour market

- *Software Engineer (System Analyst, Software Designer, Programmer/Developer, Software Quality Controller, Maintenance)*
- *Information Systems Administrator*
- *Etc.*

3.2 Further education

- *The second cycle of university education in the field of computing (computer science, software engineering, computer engineering, information technologies, information systems)*
- *The second cycle of university education in a related field*
- *Etc.*

3.3 Other needs

- *General need for the computerization of the society*
- *Etc.*

4. QUALITY ASSURANCE

4.1 Expert Group Members

- *Name of expert 1*
- *Name of expert 1*
- *Etc.*

4.2 Proponent of the qualifications standard and the date

- *Institution 1*
- *Institution 2*
- *Etc.*

4.3 The competent institution(s) and the link to the Sector Council expert opinion

- *xxx*
- *www.xxx*

4.4 The date of entry into the web-portal

- *xx.xx.xxxxx*

4.5 The deadline by which the QS should be reviewed

- *2020*

As indicated in the above template (designed to aid the transparency and better understanding of different types of qualifications, their purpose, quality and relevance, and thus sustainable implementation of the QF-BiH) a simple structure of a qualifications standard has been developed and organised into four groups of information:

1. Basic characteristics of the qualification, including the title(s)
2. Learning outcomes
3. Relevance of the qualification
4. Quality assurance.

The basic characteristics should be written in such way as to be well understood by all stakeholders, since they give the basis for transparent classification of the qualification in the QF-BiH.

This part (the basic characteristics) of the qualifications standard in the QF-BiH consists of:

- Title(s) of the qualification (generic and subject specific parts)
- Minimum volume (or workload or size of the qualification expressed in ECTS credits)
- Level (in the QF-BiH)
- Entry routes to study programmes for achievement of the qualification.

The title (or titles if needed in the QF-BiH) of the qualification is crucial for understanding and its transparent usage, since it brings the first and very important picture of the qualification to the reader. Many users (parents, qualifications authorities, employers, employment services, etc.) very often will read only the titles of qualifications without the intention for detailed reading or the need for other information on the qualification.

Information on the minimum volume of the qualification brings additional transparency to all users, especially to students. Very often there are different approaches by different higher education institutions wishing to deliver study programmes. Some higher education institutions would like to deliver the study programme, for example for Bachelor of Mathematics with 180 ECTS, and other institutions with 240 ECTS, both are consistent with the QF-EHEA agreement.

The level of the qualifications gives explicit information on its complexity and its appropriate learning outcomes. If the title has been effectively written, information on the level of the qualification should be fully understood within the generic part of the qualifications title. For example, in "Bachelor of Mathematics", "Bachelor" should always mean a qualification at the level 6. "Master" should be linked only to the level 7, etc. During the testing phase of the QF-BiH development and implementation, a BiH agreement about the exact nomenclature for combined studies and qualifications (joint and major-minor combination) will need to be agreed by the higher education community and the quality assurance agency.

Entry routes give the basis for establishing whether the applicant is worthy of access (not necessarily admission) to the required qualification. For example, if a qualifications standard states as an entry route to a study programme a "Bachelor of Mathematics", then the qualification being sought entry to is normally at level 7. The EHEA seeks to encourage the creation of multiple entry routes to help promote social inclusion and lifelong learning.

The significant part of the qualifications standard form is the list of learning outcomes, which are logically organised, from the overall qualification learning outcomes, through to module learning outcomes. These provide a complete understanding of the qualification for all users. It is the combination of all the information sections that provides the coherent and complete understanding of the qualification.

The third part of the qualifications standard brings understanding on the relevance of the qualification for the labour market, for further education and other individual or society needs.

The final part of qualifications standards, which is related to the quality assurance, consists of:

- The list of the Expert Group members who created the standard
- Proponent(s) of the qualifications standard, the date and the link to any Sector Council opinion,
- The date of entry into the web-portal and the deadline by which the qualifications standard should be reviewed.

4.2. Role of different stakeholders in the development of qualifications standards

The involvement of stakeholders in the process of development and implementation of the QF-BiH has been in place from the beginning. All international projects on the QF-BiH have involved a wide range of stakeholders in all relevant project activities. Key stakeholders have participated in projects according to their interests and the role in the qualifications system.

The revised ESG emphasises the role of stakeholders in all aspects of the quality assurance of higher education [7]. According to the ESG, the study programmes should be designed by involving students, practitioners and other stakeholders in the work. In addition, various stakeholders should be involved in the design of the methodologies for external quality assurance of study programmes and institutions. The key stakeholders in quality assurance mechanisms in higher education are students, employers, practitioners, academics and other social partners.

Qualifications standard should provide transparent guidance for the design and validation of study programmes at all universities intending to award the qualification defined by that qualifications standard.

Thus, it is important to ensure the quality of the qualifications standard. This is facilitated by the involvement of all key stakeholders in the design, consultation, development, validation or even implementation of qualifications standards.

All relevant universities, which have interests to deliver study programmes for achievement of the respective qualification, should be involved in the development of these standards. A leading university for delivering such study programmes in the country, if possible, should even conduct and initiate the process of qualifications standard development. Other stakeholders should be actively involved in the development. Employers should take care on the relevance of learning outcomes for labour market, linkage to specific occupational standards and the transparency of the qualifications standards. Policy makers and students should take care on effectiveness, sustainability and transparency of quality assurance. Academics and students should take care whether all learning outcomes are well linked to assessment criteria, and correctly written, including appropriate ECTS credit allocation.

All learning outcomes should be clear and understood by all: academics (since they should use them for delivering teaching), employers (since the qualification is intended to be relevant for specific jobs and occupations), quality assurance agencies and policy makers (since they should use learning outcomes for validation of programmes and quality of institutions and their programmes), and students (to choose relevant programmes and be better prepared for any assessments associated with it).

Qualifications standards will be relevant and well accepted by all, only if all relevant stakeholders were correctly involved from the beginning, and if they fully understood the content.

For the validation of qualifications standards, a range of different experts from the key stakeholders could be consulted or involved in the process.

4.3. Grouping of learning outcomes in qualifications standards

Learning outcomes in qualifications standards should be hierarchically organised into logical groups or units. Units include multiple learning outcomes that are required for carrying out core tasks of the qualification. Any group of learning outcomes, if possible, should consist of not too small, neither too large number of statements (preferable between 5 to 10). Groups of learning outcomes should be clearly linked to overall learning outcomes at the level of qualification (or programme level). It is important to ensure that the learning outcomes of the groups relate well to the overall outcomes of the qualification. One of the best ways to ensure an effective link between groups of learning outcomes and overall learning outcomes is by using two-dimensional table, as shown:

Overall learning outcomes at the level of qualification						
Group of learning outcomes	Overall LO-1	Overall LO-2	Overall LO-3	Overall LO-4	Overall LO-5	…	Etc.
Group-1	X				X		
Group-2		X		X			
Group-3			X		X		
Etc.							

Such a table is not a part of the qualifications standards in the QF-BiH, but it brings the evidence about the linkage between overall learning outcomes and groups of learning outcomes. Thus, the table helps to support the validation process of the qualifications standard.

4.4. Writing effective learning outcomes

When writing effective learning outcomes, it is important to bear in mind the timescale within which the learning outcomes are to be achieved by average students.

There is always a danger that one can be over-ambitious when writing learning outcomes. Before finalising the list of learning outcomes, it is important to ask colleagues and experts and possibly former students if the learning outcomes make sense to them, and if it is realistic to achieve the learning outcomes specified within the time and resources available.

Overall learning outcomes at the level of qualifications are broader in nature than those for modules and units. They start, for example, as follows: "*On the successful completion of the study programme, a student will be able to:*

- *Apply advanced concepts of Mathematics and Statistic,*
- *Analyse business problems and propose solutions*
- *Confidently engage in and successfully resolve building services engineering projects in both the technical and managerial aspects and communicate effectively their resolution*
- *Work independently and effectively in a team*
- *Take responsibility for his/her own learning.*"

Learning outcomes at the level of smaller units are linked to assessment criteria and focus on what a student must demonstrate. They define what a student must be able to do in order to pass the assessment. It is important to bear in mind when designing a smaller group of learning outcomes that all learning outcomes should be assessable. As already written above, when writing such learning outcomes, it is important to give consideration as to how the group of learning outcomes fits into the overall qualification (programme) learning outcomes.

An example of a smaller group of learning outcomes: "*On successful completion of the module, a student will be able to:*

- *Identify a wide variety of learning and teaching methods that may be employed effectively in higher education*
- *Evaluate the theories of learning that underpin their teaching approach*
- *Explain the role of accounting information in organisations*
- *Propose and defend effective on-line marketing strategies and incorporate them into a marketing plan.*"

According to recommendations prepared by experts, learning outcomes can be design based on different approaches:

- Learning outcomes based on a theoretical or research formulation (peer learning activities, focus groups, conferences, etc.)
- Learning outcomes based on negotiation between stakeholders (workshops, focus groups, conferences, etc.)
- Learning outcomes adapted from elsewhere (occupational standards, other qualifications standards, other study programmes, etc.).

Using any of these approaches, or in reality a mix of them, in order to design relevant and effective learning outcomes, it is recommended also to engage both experts in the sector, as well as experts in learning outcomes development. Of course, a single person often has expertise in both aspects.

The following questions may help experts and stakeholders to use the outcome-oriented way of thinking. For example:

- What learning outcomes should students possess after completing the programme?
- What learning outcomes help students achieve a successful professional career?
- Describe the qualification to wider society by developing overall learning outcomes (knowledge, skills and competence).
- What knowledge, skills and competence have to be listed in an international and national tender (for example call for project, etc.) for candidates with that qualification?
- Explain the assessment for specific units: what knowledge, skills and competence must a student display in order to successfully pass the examinations?
- What sort of knowledge (theories, principles, formulas, etc.), skills and competence (degree of responsibility and the level of autonomy) are connected to the specific qualification?

Once the learning outcomes are drafted, it is good practice to cross-check them with the principles on how to formulate learning outcomes. The following checklist can be used for that purpose:

- All verbs used in the description of learning outcomes are active verbs
- There are no vague verbs
- All verbs are specified and contextualised to provide adequate information
- Written statements include all characteristics of effective learning outcomes
- Regarding the number, there are neither too many, nor too few learning outcomes, both at qualification and module levels
- The formulations are focused on the outcomes, not the processes (teacher's perspective)
- Learning outcomes are measurable (observable) and can be assessed
- All learning outcomes are aligned with appropriate assessment
- Appropriate conditions for performance are specified, implicitly or explicitly
- Learning outcomes refer to modules or the overall qualification (not to an individual student)
- Learning outcomes are realistic, taking into account prior knowledge, available time and learning opportunities
- Learning outcomes are clear and understandable for students, academics, and where appropriate labour market experts
- Module learning outcomes fit within the overall learning outcomes.

Experts recommend the following practical steps for writing effective learning outcomes:

- Identify the key roles and the content of the qualification (labour market, further education and other needs)
- Classify the overall and group (unit, module) learning outcomes (cognitive, psychomotor, affective)
- Identify the level, level descriptors and type of qualification required
- Draft aims for units of learning outcomes, linking them to overall learning outcomes
- Choose a specific action verb for each learning outcome
- Decide how to measure and assess the achievement of the learning outcomes; design assessment methods, criteria and tasks
- State success criteria, if not implicitly clear
- If necessary review everything with experts and stakeholders until fully satisfied.

Learning outcomes help academics to organise effective teaching. The structure for such teaching comes from creating, managing, and aligning sets of knowledge, skills and competence to teaching and learning resources and assessments, with possibilities to track performance. Such teaching is valuable for all stakeholders. Students can have more opportunities to take ownership of their learning and expand their lifelong learning pathways. Higher education leaders and policy makers focus on new ways of identifying barriers to success and achieving improved outcomes. Employers can participate in modernisation of study programmes.

It is clear that qualifications standards are very important for the entire qualifications system. Thus, development of qualifications standards should be carefully prepared.

4.5. Key steps for the development of qualifications standards

The development of qualifications standards should be started on the basis of the key qualifications roles, which are generally organised into three groups in the QF-BiH – employment, further education and the needs of society.

Based on the key roles, the development of qualification standards benefits by the development of overall learning outcomes and linking them to the modules. Those learning outcomes can be obtained directly from different sources, for example, occupational standards, from other similar qualifications standards, other relevant study programmes, and academic and professional needs. Stakeholders, while developing qualifications standards should also use other sources, research analysis, general and specific strategies, statistical data, and other relevant documents. If there are some other general or specific regulations and needs, they should be consulted while developing all elements of the qualifications standards.

It means that the key steps in development of qualifications standards are related to identification and development of learning outcomes at both qualification and a smaller group (module) levels.

Key steps in development of qualifications standards in the QF-BiH are as follows:

1. Identification of the role of the qualification. The role of the qualification can be a combination of employment, further education or for other interests of individuals and the needs of society.
2. Collecting all relevant documents and information about the qualifications and related elements (occupational standards, similar existing study programmes, relevant strategies, relevant research analysis, etc.). If there are no occupational standards at the QF-BiH (which is currently the case, but proposed in the Action Plan to be developed in the future) and the main role of the qualification is for employment, then occupational standards should be developed parallel to qualifications standards. There are different techniques for collecting information about the qualification. These include review of data-bases of job descriptions, occupational standards from other countries, description of technological process, strategies, research of labour market forecasting and current needs, participation at conferences, interviews, questionnaire, etc. After the establishment of the QF-BiH portal, in addition to occupational standards, this process should include also the review of other similar qualifications standards. All these techniques for collecting information have strengths and weaknesses, advantages and disadvantages. Therefore the use of a combination of them would be most advisable for QF-BiH.
3. Identification of key stakeholders and experts, according to their potential interests regarding the qualification. It is very important to train the stakeholders and to prepare all documents, methodology, etc. needed for their work.
4. Development of effective learning outcomes by using combination of different techniques and in partnership with stakeholders (review of documentation; interviews and questionnaire; events with focus groups; presentation and discussion at conferences; etc.). Learning outcomes should be developed according to the process explained in the above subsection of this manual, taking care of all characteristics of effective learning outcomes. A table, which shows the relationship between overall learning outcomes and group (module) learning outcomes, should be developed.
5. Drafting the complete qualification standard by using the adopted common format.
6. Verification of the qualifications standard (and occupational standard, if needed) by sector experts and learning outcomes experts and recommendation for further improvement.
7. Starting from the beginning of the process until the complete satisfaction.

The process of the development of qualifications standards should include all main aspects of the qualifications standard: the content, technical aspect, and the process.

The content will be relevant if developers focus on the learning outcomes that are in accordance with level descriptors and linked to appropriate assessment. The allocation of QF-BiH levels to the qualification is very important.

Stakeholders need to agree on the common format of qualifications standards, the methodology for their development.

4.6. Qualifications standard checklist

The development of qualifications standards is very complex. Thus, a practical checklist could help effective development and quality of qualifications standards.

The following checklist has been proposed for development of qualifications standards (QS):

1. Are experts from key stakeholders included? What are their specific interests regarding the qualification? Do stakeholders understand their role in development and validation of the qualifications standard? Are all documents, methodology and other resources prepared for the work?
2. Are the roles of the qualifications identified (QS-3)?
   - QS-3.1: Has the qualification a role related to the labour market? Which occupations are focused? Is there a specific occupational standard, or there are more? Is it clearly written and justifiably?

- QS-3.2: Is the qualification relevant for further education? Which study programmes are focused? Is there a specific study programme, or are there more than one? Is it clearly written and justifiably?
- QS-3.3: Are there other roles relevant for individuals and society? Is it clearly written and justifiably?

3. Are learning outcomes stated (QS-2)?
   - QS-2.1: Are the overall learning outcomes effectively written? Are the overall learning outcomes organised into domains according to level descriptors (KSC)? Are overall learning outcomes linked to groups of learning outcomes (is there a relevant table as evidence)? Are overall learning outcomes aligned to level descriptors at the specific level (and there is relevant analysis of levels, one level above and one below). Are overall learning outcomes appropriately linked to relevant occupational standards (if the role of the qualification is linked to labour market needs)
   - QS-2.2: Are the learning outcomes developed, according to guidelines in this manual, employing all the characteristics of effective learning outcomes and organised into groups? Are ECTS credits are specified for each group?

4. Are basic characteristics effectively written (QS-1)?
   - QS-1.1: Is the title(s) of the qualification in line the QF-BiH requirements? Is the general part of the title(s) is linked to the particular type? Do the title(s) transparently represent the level of the qualification? Is the subject specific part of the title(s) well communicated and agreed by experts representing relevant stakeholders? Ensure there are no other qualifications standards using the same title of the qualification?
   - QS-1.2: Are ECTS credits are clearly specified? Are specified ECTS credits in line with the overall learning outcomes?
   - QS-1.3: Is the level specified according to the overall learning outcomes and level descriptors of the QF-BiH?
   - QS-1.4: Are all entry routes clearly stated?

5. Are quality assurance elements stated (QS-4)?
   - QS-4.1: Are the names of all experts involved in the development of the QS provided, including their institutions?
   - QS-4.2: Are the proponent institutions clearly stated?
   - QS-4.5: is the deadline by which QS should be reviewed stated?

4.7. Validation of qualifications standards

For the validation process of qualifications standard, it is important to select relevant institutions and experts for reviewing the draft of any qualifications standard.

The validation as well as the development of qualifications standards should be focused on the same three aspects of the qualifications standard quality (which doesn't mean three different experts):

1. Content quality, which should be validated by relevant sector experts
2. Format quality, which should be validated by qualifications framework or learning outcomes experts
3. Process quality, which should be validated by qualifications framework experts.

The questions that should be addressed by the validation process are the following:

1. Content quality:
   - Does the qualifications standard incorporate all roles of qualifications by using information from occupational standards and further qualifications standards?
   - Does the qualifications standard incorporate underpinned knowledge, skills and competence needed as the basis of learning outcomes of the qualification?
   - Does the qualifications standard incorporate transversal competences and achievements of the qualification and it modules?
2. Format quality:
   - Has the qualifications standard format been agreed and adopted?
   - Are module of learning outcomes statements neither large nor too small in number?
   - Is each module's learning outcomes aligned to appropriate assessment criteria?
   - Are the overall learning outcomes well aligned to the level descriptors of the QF-BiH, and is the volume correctly specified?

3. Process quality:
   - Has the development of qualifications standard been based on research of relevant documents, according to the role of the qualification?
   - Have sector qualifications experts drafted the qualifications standard?
   - Does the validation process involve experts from the sector as well as learning outcomes and qualifications framework experts?
   - Are relevant stakeholders, including those from higher education institutions involved in the drafting process?
   - Recommendation by experts adopted or negotiated?

Important steps for the verification of the allocation of the QF-BiH level in the qualifications standard:

1. Preparation:
   - Looking for the "best fit" between learning outcomes in the qualification and the QF-BiH level descriptors. Level descriptors should not be used as a checklist, expecting to find all domains of the level descriptors (knowledge, skills, competence) in the qualifications standard. All domains will not even be relevant to every learning outcomes of the qualification.
   - Taking time to look at the QF-BiH level descriptors to get feel for some of the differences between the levels. They should be regarded as indicative, not prescriptive. The level descriptors are designed to allow broad comparison to be made between the learning outcomes and quality assured assessment.
   - Identify the distinguishing features between levels. Read carefully competence domain, particularly concerning autonomy and responsibility.
   - Read the learning outcomes of the qualifications standard, and think about their main objectives and if the assessment is of an appropriate level. Active verbs should be appropriate for the level.
2. Mapping the qualification standard using the QF-BiH level descriptors (benchmark learning outcomes of the qualification against the QF-BiH level descriptors):
   - Read overall learning outcomes in full.
   - Review the domains (knowledge, skills, competence) of a main set of levels relevant for the qualification.
   - Identify the intended level of the qualification.
   - Using the intended QF-BiH level of the qualification, look in detail at the QF-BiH level descriptors for the closest levels, one above and one below (e.g. if the intended level may be level 6, then look at the level descriptors for levels 5 and 7)
3. Reviewing the allocation of the QF-BiH level to the qualifications standard
   - Look for the "best fit" between the learning outcomes of the qualification and the level descriptors. , write "best fit" level for each of domains (knowledge, skills competence). This could generate, for example, "Knowledge: level 7; Skills: level 6; Competence: level 6", etc.
   - Ranking the domains (knowledge, skills, competence) in order of importance for the qualification, and decide which level "fits best" to the requirements and importance.[16]
4. Rationale for the level of the qualification:
   - Justify the choice with reference to QF-BiH levels one above and one below.
   - Extract key terms from the learning outcomes of the qualification and respective level descriptors, to support the selection of the QF-BiH level.

4.8. Potentials of qualifications standards in quality assurance

Quality assurance system in the EHEA gives emphasis to learning outcomes. Learning outcomes are the core elements to express the content of qualifications standards in the QF-BiH. Thus, qualifications standards support the quality assurance of qualifications and their relevance to different individual needs and those of society.

Higher education institutions are able to use qualifications standards as an advising tool for the development of relevant study programmes - this should be much easier compared to traditional approaches used in the past. They are able to design very complex and innovative study programmes in a transparent manner. Some useful practical tools were developed in the previous CoE project - SHE III, [18].

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[16] Explore the domains (knowledge, skills, competence) in order of importance for the qualification and decide which level 'fits best.

Internal and external quality assurance systems are fully supported by qualifications standards.

Without qualifications standards the quality assurance agency will find its work difficult even if they engage the best experts in the sector.

4.9. Use of qualifications standards for design of study programmes

Study programmes are the key elements in the qualifications system. In the QF-BiH they should be based on the respective qualifications standard. Thus the process of development and validation of study programmes in the QF-BiH should be based on validated qualifications standards, and relevant occupational standards (if the role of the qualification is labour market related).

The development of study programmes in the QF-BiH starts from the overall learning outcomes intended to be achieved. Drafting the list of those learning outcomes should start directly from the aligned qualifications standard. It is proper and good practice to specify additional learning outcomes not necessarily included in the qualifications standard. Thus, it is clear that the key steps in the development of study programmes are related to the identification and development of learning outcomes at both the study programme level and the module level, as stated in [18].

Practical steps in the development of study programmes in the QF-BiH are as follows:

1. Research society and individual's needs, trends in the labour market and qualifications systems in order to help higher education institutions decide what qualifications they should seek to provide.
2. Research and identify the qualifications standard and occupational standards that are going to be used as a platform for the development of study programmes.
3. Collect all relevant documents and information about the proposed qualifications and related elements (occupational standards, similar existing study programmes in BiH and in other countries, etc.). If there are no relevant qualifications and occupational standards at the web-portal of the QF-BiH, then qualifications standards should be developed parallel to the study programme. Different techniques for collecting information needed for the development of the study programmes, are similar to those written in the section on the development of qualifications standards.
4. Identify key stakeholders and experts, according to their potential interests regarding the study programme. It is very important to train the stakeholders and to prepare all documents, methodology, etc. needed for their work.
5. Develop effective learning outcomes by using a combination of different techniques and in partnership with stakeholders (review of documentation; interviews and questionnaire; events with focus groups; presentation and discussion at conferences, etc.). Start from learning outcomes specified in the respective qualifications standard.
6. Drafting the complete study programme and its components, according to the relevant qualifications standard, the ESG and internal procedures of the university.
7. The title and basic characteristics of related qualifications defined in the qualifications standard should be correctly stated, including the proper ECTS credits totals. According to the interest and profile of the university provider, additional specific and transversal knowledge, skills and competence should be added.
8. The verification of study programmes (according to the qualifications standard) should be done by relevant experts. If needed, recommendation for further improvement should be prepared.
9. Take all steps from beginning to end of the process until satisfactory results is achieved.

All study programmes should be designed in accordance with the quality assurance approaches in the ESG, which are incorporated in the qualifications standard. The process requires that qualifications should be clearly specified and communicated and refer to the correct level of the qualifications framework.

Amongst other, qualifications standards in the QF-BiH are designed to strengthen the basis of levels and aid the curriculum development of qualifications.

4.10. Approval of study programmes and further development

According to the ESG, higher education institutions must have their internal process for the design and approval of their study programmes (1.2 in [7]). The study programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes, their levels and all other characteristics required by the respective qualifications standard.

Validation and approval by internal and external quality assurance should ensure that study programmes are:

- Designed with overall programme objectives that are in line with the institutional strategy/-ies and have explicit learning outcomes
- Designed by involving students and other stakeholders in the work
- Benefit from external expertise and external reference points
- Reflect the four purposes of higher education stated by the Council of Europe (preparation for sustainable employment; preparation for life as active citizens in democratic societies; personal development; the development and maintenance, through teaching, learning and research, of a broad, advanced knowledge base)
- Designed so that they enable smooth student progression and multiple learning pathways
- Define the expected student workload and learning outcomes in terms of ECTS credits
- Include well-structured placement opportunities where appropriate
- Subject to a formal institutional approval process, which includes the reference to qualifications standards in the QF-BiH.

The review of whether the study programme refers well to a qualifications standard benefits all, the designers of the programme and the internal and external validation process.

Institutions should monitor and periodically review all study programmes to ensure that they meet the objectives and respond to the needs of individuals and society.
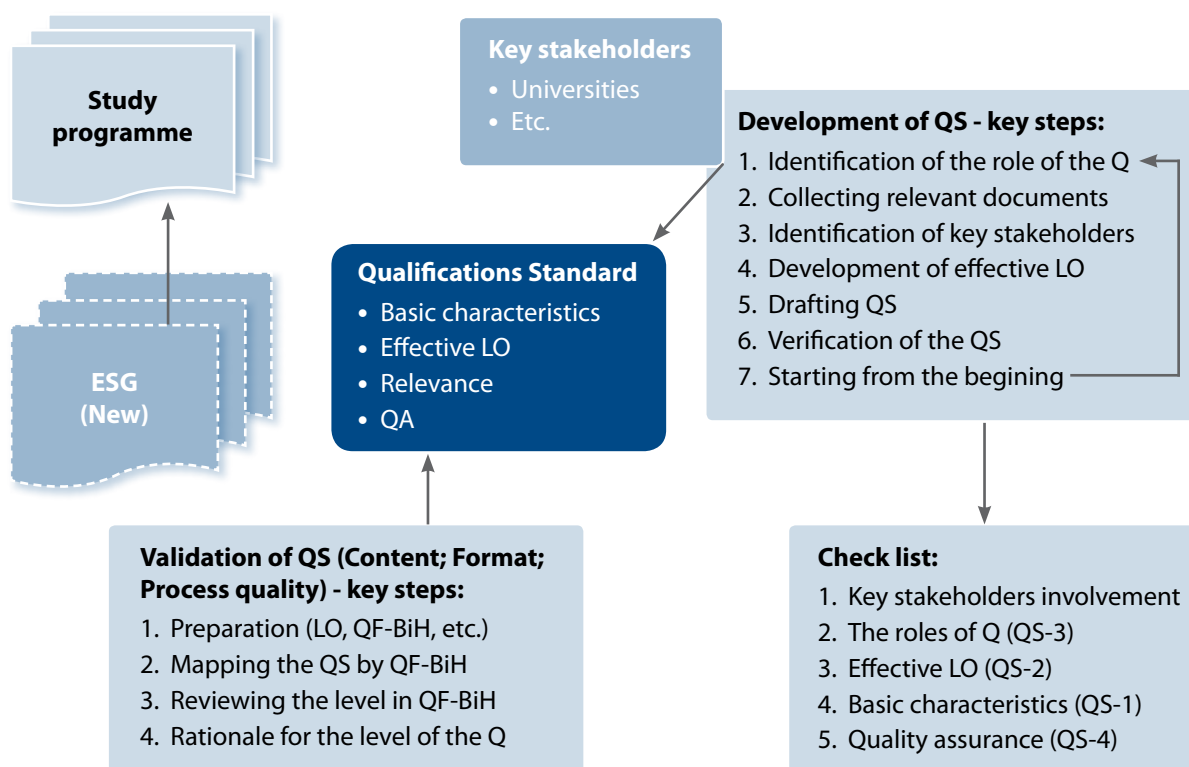
Illustration 4: Development of qualifications standards.

5. Development of occupational standards

Occupational standards denote standards of performance that individuals must achieve when carrying out functions in the workplace expressed in terms of the underpinning knowledge, skills and competences. They classify and define the main functions in the workplace.

In the world of employment these standards focus on what people need to be able to do, how they will do it, and the standards required. Occupational standards exist in all European countries but each country has its own style, organisation, approach and presentation of their standards. Occupational standards provide an important link between the labour market and the national qualifications system.

The development and use of a common format for occupational standards creates a universal consistency in approach that facilitates their easy understanding by the various users: employers, human resource managers, academics, and students.

Labour market professionals, academics from different universities in BiH, and various experts, have drafted a common format for occupational standard associated with the QF-BiH. This simple structure is further described in the section.

5.1 Content of occupational standards

In addition to qualifications standards, the QF-BiH introduces occupational standards, which can help form the basis for some qualifications making them more relevant and explicitly linked to labour market needs. Occupational standards can be very broad or very narrow and specific.

In the QF-BiH Action Plan, the occupational standard is defined as a document with a list of all tasks that an individual performs within a particular occupation (or sub-occupation) and a list of learning outcomes required for their successful performance. The following is an information template for the occupational standard:

Minimal elements of occupational standard
1. BASIC CHARACTERISTICS

1.1 Name(s) of the occupation
- *Software developer engineer*
- *Other names (if necessary)*

1.2 Code of the occupation
- *2512*

1.3 Link to the international classification
- *2512*

1.4 Level of required qualifications
- *QF-BiH 6*

2. KEY TASKS AND REQUIRED KNOWLEDGE, SKILLS AND COMPETENCE

2.1 Description of the occupation

- *This occupation requires expertise in the field of computer science, including competencies to analyse, design programme, make prototype, test and maintain software solutions.*

2.2 Key tasks and required knowledge, skills and competence

(Task groups (key task; key task; etc.) – Knowledge, skills, competence)

- *System analysis (Receive user requests; Etc.)*
    - *Apply basic principles and methods of computer sciences*
    - *Apply mathematical and scientific inference*
    - *Etc.*
- *Software design (Design a system architecture; Etc.)*
    - *Design solutions to significant computational problems*
    - *Design software solutions that meet the specified design and performance requirements*
    - *Etc.*
- *Etc.*

3. QUALITY ASSURANCE

3.1 Justification of the introduction of the occupational standard

- *Labour market demands in Bosnia and Herzegovina, the region and elsewhere*
- *Etc.*

3.2 Expert Group Members

- *Name of expert 1*
- *Name of expert 2*
- *Etc.*

3.3 Proponent of the occupational standards and the date

- *Institution 1*
- *Institution 2*
- *Etc.*

3.4 The competent institution(s) and the link to the Sector Council expert opinion

- *xxx*
- *www.xxx*

3.5 The date of entry into the web-portal

- *xx.xx.xxxxx*

3.6 The deadline by which the OS should be reviewed

- *2020*

4. ADDITIONAL INFORMATION

4.1 Specific regulations directly related to the occupation

- *xxx*
- *etc.*

4.2 Occupational risks and working conditions

- *xxx*
- *etc.*

4.3 Specific requirements

- *xxx*
- *etc.*

As indicated in the above template (designed to aid all users and the sustainable implementation of the QF-BiH), similar to a qualifications standard template, the content of occupational standard has been organised into four main information sections:

1. Basic characteristics
2. Key tasks and required competences
3. Quality assurance
4. Additional information.

Basic characteristics include:

1. Name of the occupation
2. Code of the occupation
3. Link to the international classification
4. Level of required qualification(s).

The correct name of the occupation is crucial for its understanding.

The code of the occupation and links to any international classification reference brings additional transparency to users. This can also be an indicator of the quality of the occupational standard. The level of required qualification gives an indication of the complexity of tasks and activities, and the responsibility of employees within the occupation.

Details of the key tasks and required learning outcomes are described in the second part of the occupational standard – Key tasks and required knowledge, skills and competences.

This part includes:

1. Description of occupation
2. Key tasks and required knowledge, skills and competence, which are logically organised into stand-alone groups.

The third part is related to quality assurance, which includes:

1. Justification of the introduction of the occupational standard
2. Expert Group members
3. Proponent(s) of the occupational standard and the date, the component institution(s) and the link to the Sector Council opinion
4. The deadline by which the occupational standard should be reviewed.

All these components support the quality of the occupational standard and its effective usage.

The final part of the occupational standard is related to all the other important elements – specific regulations related to the occupation, risks and working conditions, and other specific requirements. All regulated professions require this part of the template to be completed. There are occupations where this is not necessary.

5.2. Respective roles of different stakeholders

The key stakeholders in the process of development of occupational standards are experts in the sector. The participation of learning outcomes experts in the validation of drafts also aids understanding and better usage of occupational standards by higher education institutions, students and other users.

It is essential to ensure the quality of occupational standards, which is possible only if the development process involves relevant companies, employer associations, chambers of commerce, skill councils, etc.

Policy makers and agencies should take responsibility for any regulations in a sector. Educational experts should be consulted to aid the understanding of required learning outcomes (knowledge, skills and competence).

All learning outcomes should be understood by academics (if study programmes are focused on labour market needs), employers (since qualifications are intended to be relevant for specific jobs), quality assurance

agencies and makers (who are responsible for approving regulations regarding the occupation), and students and employees (to improve the understanding of the relevance of qualifications to the labour market).

Sector council and key experts from the labour market should be involved in the validation of occupational standards.

5.3. Key steps for the development of occupational standards

Occupational standards indicate the standards of performance individuals must achieve when carrying out functions in the workplace.

The development of an occupational standard requires accurate data on all the knowledge, skills and competence necessary for the appropriate level of performance required. This can be obtained through the detailed analysis of the occupation in a rational and structured way. The initial analysis of any occupational is the most important stage in creating an occupational standard.

There are different techniques for collecting data about an occupation, i.e. observation of work, interviews (individual or group), questionnaires, review of existing documentation (job descriptions, examination of examples of occupational standards from other countries, description of technological process, etc.). These techniques have different strengths and weaknesses, advantages and disadvantages and it is often beneficial to use of a combination of them.

The recommended analysis of occupations in the QF-BiH has the following principles:

• Occupational experts and current practitioners (both, international and local) are the best source of information on the occupation
• Key tasks in the occupation should be directly connected to the required learning outcomes that workers must have in order to perform tasks in the occupation.

The analysis of occupation and development of occupational standards has a focus in two areas: tasks and outcomes in the occupation and on learning outcomes.

Techniques that can be used in collecting information on an occupation can include a combination of the following:

• Analysis of all documentation on the occupation, for example, job descriptions, classification of occupations, international classifications and documentation, etc. (ISCO, ESCO, etc.)
• Interviews and workshops with focus groups (experts, practitioners, supervisors, authorities, etc.)
• Direct observation, which brings better understanding of a job, tasks and required competences
• Questionnaire and conferences.

Key steps in the effective development of occupational standards for the QF-BiH can include the following:

1. Identification and definition of the occupation
2. Collecting information on the occupation, as described above
3. Identification of key stakeholders and experts. It is very important to train the stakeholders and to prepare them for their work (all documents, methodology, etc.)
4. Identify key groups of tasks, functions, and skills relevant to the occupation
5. Identify and analyse learning outcomes (knowledge, skills and competence) for each of key groups of tasks (i.e. to develop a list of both, specific and cross-sectoral competences for specific occupations including attitudes, values and attributes). The learning outcomes should be developed according to the process described for the development of qualifications standard
6. Drafting the complete occupational standard using the adopted common format
7. Verification of the occupational standard by sector experts and recommendation for further improvement.
8. Take all steps from beginning to end of the process until satisfactory results is achieved.

The development of occupational standards should include all the main aspects of the occupational standard: content, technical aspects and processes. The content will be relevant if developers are focused on the outcomes of the occupation. Technical aspects are relevant if all key groups of tasks are linked to required skills, competence and the underpinning knowledge. The process is relevant if all stakeholders use a common format and methodology for developing occupational standards.

5.4. Occupational standard checklist

The development of occupational standards is very complex. Thus, as for qualifications standard, a practical checklist facilitates the effective development and quality of occupational standards.

The following checklist is proposed for the development of occupational standards (OS):

1. Are experts from key stakeholders included, particularly labour market experts? Do stakeholders understand their role in development and validation of the occupational standard? Is documentation on the occupation, for example, job descriptions, classification of occupations, international classifications and documentation (ISCO, ESCO, etc.) prepared? Are interviews and workshops with focus groups (experts, practitioners, supervisors, authorities, etc.) prepared? Are direct observations, questionnaire and conferences organised? Are all documents, methodology and other resources prepared for the work?
2. Is the introduction of the occupational standard justified (OS-3.1)?
   - OS-3.1: Is the occupation is relevant for labour market in BiH? What is the benefit of introducing the standard in the QF-BiH? Are there similar occupational standards in the QF-BiH? Is it clearly written and justified?
3. Are the key tasks and required knowledge, skills and competence identified (OS-2)?
   - OS-2.1: Is the description of occupation clearly written and communicated with experts?
   - OS-2.1: Are the key groups of tasks, relevant for the occupation, clearly written? Are the learning outcomes (knowledge, skills and competence) clearly aligned to each key group of tasks? Are the specific and cross-sectoral knowledge, skills and competence stated? Are relevant attitudes, values and attributes are identified? Are the required knowledge, skills and competence effectively written, according to the process described within the qualifications standard development?
4. Are the basic characteristics effectively written (OS-1)?
   - OS-1.1: Are the name(s) of the occupation clearly written, and well communicated by experts from relevant stakeholders? Are there other occupational standards using the same name(s) of the occupation?
   - OS-1.2: Is the code of the occupation is clearly specified?
   - OS-1.3: Is the link to the international classification included?
   - OS-1.4: Is the level of required qualifications written and justified by the required knowledge, skills and competence in OS-2.2?
5. Are quality assurance elements stated (OS-3)?
   - OS-3.2: Are the names of all experts and their institutions involved in the development of the OS identified?
   - OS-3.3: Are the proponent institutions clearly stated?
   - OS-3.5: Is the deadline by which OS should be reviewed stated?
6. Is any additional information clearly written (OS-4)?
   - OS-4.1: Are any specific regulations related to the occupation stated?
   - OS-4.2: Are any occupational health and safety risks and special working conditions clearly written?
   - OS-4.3: Are any other specific requirements of the occupation, stated?

5.5. Validation of occupational standards

For the validation process of the occupational standard, it is important to select relevant organisations and experts to review the draft of the occupational standard.

The validation of occupational standards should be focused on three main aspects the quality:

1. Content quality - which should be validated by relevant occupational experts
2. Format quality - which should be validated by qualifications framework experts
3. Process quality - which should be validated by qualifications framework experts.

Questions that should be addressed by the validation process include the following:

1. Content quality:
    *   Does the occupational standard incorporate all key groups of tasks?
    *   Does the occupational standard incorporate underpinned knowledge, and not just skills?
    *   Does the occupational standard incorporate transversal competences, and not just sector specific?
2. Format quality:
    *   Has the OS template/form been agreed?
    *   Is each task/function sufficiently precise?
    *   Has each group of tasks a direct reference to its outcome?
    *   Is each group of tasks directly linked to a set of knowledge, skills and competence?
3. Process quality:
    *   Was the development of OS based on research on the occupation?
    *   Was drafting of the OS done by appropriate experts?
    *   Did the validation process involved experts from other occupations?
    *   Have all relevant stakeholders been involved?
    *   Were the recommendations by occupational experts adopted or negotiated?

5.6. Potential of occupational standards in strengthening the relevance of qualifications

Higher education institutions and their partners are able to consult occupational standards when describing the labour market relevance of their qualifications.

Occupational standards can aid business investment in higher education and ensure that study programmes enable students to meet the requirements of the labour market. This in turn can improve the international competiveness of BiH companies.

Occupational standards have a major positive potential to impact students and workers, employers, and higher education institutions in BiH.

The key potential benefit of occupational standards is to facilitate the development of study programmes relevant to the labour market. The main beneficiaries of occupational standards are higher education institutions, quality assurance bodies, policy makers, and indirectly, students, employees, and employers.

Qualifications Standard
*   Basic characteristics
*   Effective LO
*   Relevance
*   QA

Key stakeholders
*   Labour market
*   Etc.

Development of QS - key steps:
1. Identification and definition of the O
2. Collecting information on the O
3. Identification of key stakeholders
4. Identification of key tasks
5. LO
6. Drafting OS
7. Verification of the OS
8. Starting from the begining

ESG (New)

Occupational Standard
*   Basic characteristics
*   Key tasks and LO
*   QA
*   Additional information

Check list:
1. Key stakeholders involvement
2. OS justified (OS-3.1)
3. Key tasks and LO (OS-2)
4. Basic characteristics (OS-1)
5. Quality assurance (OS-3)
6. Additional information (OS-4)

Study programme

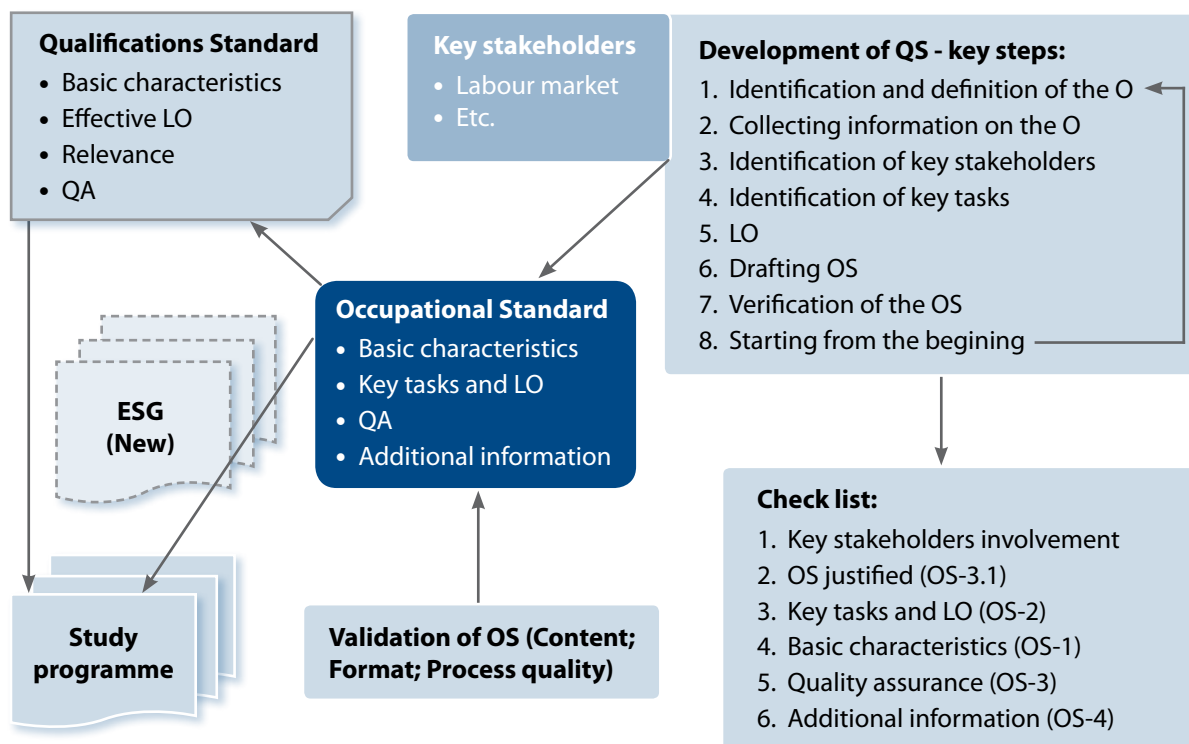**Validation of OS (Content; Format; Process quality)**

Illustration 5: Development of occupational standards.

6. Training of trainers

Experts as trainers from all relevant stakeholders in the BiH are crucial for the development and sustainable implementation of the QF-BiH. This is particularly important for the development of qualifications standards and occupational standards and their effective use for the design and validation of study programmes. The most significant reform and modernisation of higher education has to take place at university level where academic autonomy and the responsibility for the design of the curriculum and its quality assurance takes place. Such changes require a cadre of highly trained local experts to lead the required staff development exercises in BiH higher education institutions.

The *'BiH Training Module'* and the accompanying detailed *'Qualifications and Occupational Standards Training Workshop Agenda'* were developed and piloted 20-24 April 2015 where twenty-one BiH future trainers undertook the full-time training held over five days at Jahorina. Those trained were carefully selected in accordance with the QF-BiH Action Plan 2014-2020. The workshop training agenda, its aims and learning outcomes are presented in the Annexes 9.4 and 9.5. All those trained had to pass a rigorous series of tasks and assessments including practical presentations. Examples of those assessments can be found in the Training module.

The training was intimately linked and supported by the contents of the Manual. The training included all the main aspects of higher education reform with a particular focus on the development and practical application of qualifications standards and occupational standards in BiH. In addition, it covered the: modernisation context in BiH; outcomes of the Yerevan EHEA Ministerial Conference; updated 2015 *'Standards and Guidelines for Quality Assurance in the EHEA'*; updated 2015 *'ECTS Users' Guide'*; curriculum development and learning outcomes. etc. A crucial aspect of the training was the provision to all those being trained of a hard copy compendium of eighteen key documents. All these can be accessed at website of the joint EU/CoE project at www.pjp-eu.coe.int/en/web/bih-higher-education as they are an important set of reference materials that trainers and future trainees will need.

The key purpose of the training was the capacity building of future BiH trainers who can then pass on their skills and abilities to train other staff and thus lay the basis of a BiH-wide capacity building initiative that will firmly embed qualification and occupational Standards.

The Manual, together with the Training Module and Training Workshop Agenda, is designed to support the ongoing modernisation of higher education in BiH. They are intended to be used as valuable resources that can be adapted to support a variety of training activities associated with the QF-BiH Action Plan 2014-2020.

7. Next steps and recommendations

The next steps in the development and implementation of the QF-BiH should be fully in line with the Action Plan, which gives all activities and needs for their effective outcomes. The effective integration and coordination of all activities according to the Action Plan will provide the basis for the success of the implementation of the QF-BiH. International and local experts, all key stakeholders and implementing bodies play a crucial role in the process.

Support by international projects is very important for further development of the QF-BiH and its implementation. They can help in research and identification of the best specific priority areas.

Active international cooperation should improve the quality and provide additional trust and foreign recognition of the BiH qualifications system.

Recommendations to the Action Plan development and implementation of QF-BiH for period 2014-2020

The Action Plan for Development and Implementation of the QF-BiH for the period 2014-2020 is one of the key documents adopted by the Council of Ministries of Bosnia and Herzegovina related to the qualifications system in BiH.

The Action Plan gives all components and activities needed for development and effective implementation of the QF-BiH. It consists of well-defined activities and outcomes, which are structured into five interrelated packages (see the full Action Plan reproduced in the Annex 9.1).

The set of five packages starts from the design of key components and processes, examples and basic instructions, and continues through a testing phase, the development of legal documents and quality assurance improvement, implementation of the QF-BiH, development of human resources to the review and further development of the QF-BiH.

Most of the activities, envisaged within the Activity Package 1, have been completed and all proposed outcomes have been reached, such as analysis of other experiences and EU guidelines, definition of key concepts, design of domains of learning outcomes in the QF-BiH, levels and level descriptors and their link to the EQF and QF-EHEA, basic characteristics for the classifications of qualifications, minimal contents of the qualifications and occupational standards, etc.

Higher education, workload and credit system are already defined. The development of selected examples of occupational and qualifications standards, the training of trainers for the development and implementation of qualifications and occupational standards within the QF-BiH for higher education have also been completed.

In addition to the above, currently there are international projects working on development and implementation of study programmes according to the new qualifications standards, including the simulation of the design and validation processes of those study programmes, and other quality assurance elements in accordance with the ESG.

There are also international projects starting with the self-certification to the QF-EHEA, and also projects associated with the referencing of general education, and vocational education and training to the EQF.

The internationalisation and dissemination of the QF-BiH has been also well developed. BiH is well recognised in the Bologna process, and it is expected that BiH will soon formally participate in the EQF.

Besides the above mentioned success of the Action Plan in BiH, in order to have the full spectrum of benefits for all citizens, stakeholders, social partners and the entire society, it is important to continue with the effective implementation of the Action Plan.

The following recommendations are focused on crucial points, presented here according to the Activity Packages in the Action Plan:

- **P1. Designing the QF-BiH**;
  - **P1-A.** Designing and linking all components / elements of the QF-BiH
    - There are already well-designed and tested QF-BiH concepts and other elements in the higher education and similar results in other sectors (key concepts, domains of learning outcomes, levels and level descriptors, templates of minimum occupational and qualifications standards, basic elements of study programme, use of level descriptors and envisaged links to the EQF and QF-EHEA, basic characteristics of qualifications, etc.)
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission prepare an overview of all important results achieved within different international projects;
      - Communicate with all key stakeholders all the achieved results regarding this part of the Action Plan, to harmonise all results, and to prepare the final report.

- **P1-B.** Defining processes / procedures and the inclusion of relevant implementing bodies
  - There are well-defined concepts as processes in qualifications systems, such as formal, non-formal and informal learning, assessment of achieved learning outcomes and grading, awarding qualifications, etc. Internal and external quality assurance system are well understood as is the role of QF-BiH in terms of quality assurance. The role and responsibility of different implementing bodies (ministries, agencies, universities, etc.) has been well discussed with the higher education sector and some within other sectors.
  - **Recommendations**:
    - After the establishment of the QF-BiH Commission prepare an overview of all important results achieved within different international projects regarding this part (and consider to integrate with the similar overview of P1-A);
    - Communicate with all key stakeholders all the achieved results regarding this part of the Action Plan, to harmonise all results, and to prepare the final report (integrated with the P1-A report);
    - Prepare a report on partnerships established, including the role and responsibility of implementing bodies.
- **P1-C.** Developing examples and work instructions
  - There are well-developed examples of all components, including simulation of some procedures. Instructions and guidelines are developed for some specific parts of the QF-BiH implementation.
  - **Recommendations**:
    - After the establishment of the QF-BiH Commission review and prepare a document of relevant examples of the QF-BiH components, the simulation of processes and a review and a list of prepared instructions and guidelines and manuals for different implementing bodies and stakeholders.

- **P2. Testing the QF-BiH**;
  - **P2-A. P2-B. P2-C.** Development of selected examples of occupational standards, qualifications standards; and appropriate education/study programmes
    - There are well-developed examples of occupational and qualifications standards and appropriate study programmes within the higher education, and also similar results in other sectors.
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission review of all examples of occupational and qualifications standards and study programmes. Prepare a list of all well-prepared examples, making them available for next steps
      - Communicate to all key stakeholders all examples.
  - **P2-D.** Testing processes / procedures of implementing bodies for selected examples
    - There are quality assurance bodies and adequate procedures in qualifications system. There are also well-prepared guidelines, instructions and manuals.
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission review and analyse existing quality assurance mechanisms
      - Review planned procedures and how to implement them effectively in the system
      - Communicate with all key stakeholders all planned procedures
      - Analyse existing instructions, guidelines and manuals, and prepare any missing instructions for internal and external quality assurance of all processes, ensuring a harmonisation throughout the qualifications system.
  - **P2-E.** Developing and testing of the IT platform, including the QF-BiH website
    - **Recommendations**:
      - Analyse examples in other countries, and to develop and to test IT base and QF-BiH website
      - Communicate with all key stakeholders the proposed IT base and QF-BiH website.

- **P2-F.** Analysing, testing and, if needed, changes and amendments to elements / components and processes / procedures of implementing bodies
  - **Recommendations**:
    - After the establishment of the QF-BiH Commission analyse the QF-BiH design, its components and all processes
    - According to the above analysis and findings make any necessary changes and amendments in the QF-BiH to make it transparent, easy to use and effectively implemented
    - Analyse organisation of sectors in different countries (there are examples in the Region (SI, HR, MN, MK, in EU, and worldwide, international organisations - ISCO-08, ESCO, etc.); analyse also existing organisation of sectors in BiH, particularly sectors that exist in higher education (research and scientific areas, etc.) and sectors in the vocational education and training sector; if possible consider to merge them; For example, within the NQF Croatia has introduced 25 sectors and one interdisciplinary group (http://www.kvalifikacije.hr/Default. aspx), ESCO introduces 27 sectors and one cross-sector group (http://ec.europa.eu/social/ main.jsp?catId=1042&langId=en);
    - The mandate and the role of sector councils in the QF-BiH should be carefully defined; Consider to use sector councils only for validation (not for development) of standards and some other sector related strategic documents. Create effective and sustainable sector councils; There is no need to start the work to create all councils at the same time. Organise some of their activities off site;
    - According to their mandate, the role, and the organisation of their work, define the effective and relevant structure of sector councils; Consider the balance of interests from education, labour market and general society interests, using experts from relevant stakeholders in the sector
    - Communicate with all key stakeholders proposed mandate, the role, the structure of sector councils and organisation of their work.

- **P3. Development of the QF-BiH documents and implementation**;
  - **P3-A.** Developing proposals and adoption of legal documents at appropriate levels of authority.
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission, if needed propose relevant changes of the QF-BiH and amendments at appropriate levels of authority
      - Communicate with all key stakeholders proposed changes.
  - **P3-B.** Improving the quality assurance system
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission, analyse existing legislation related to quality assurance at all levels
      - According to the above analysis and findings, if needed, consider how to adapt existing quality assurance bodies; consider to train staff in bodies responsible for internal and external quality assurance
      - Communicate with all key stakeholders proposed improvement of the quality assurance system.
  - **P3-C.** Development and presentation of self-certification and referencing reports to the EQF and QF-EHEA
    - There are current international projects related to the referencing and self-certification to the EQF and QF-EHEA;
    - **Recommendations**:
      - After the establishment of the QF-BiH Commission, analyse existing activities and results regarding referencing and self-certification;
      - Develop one comprehensive report by integrating all outcomes of current international projects in BiH related to referencing and self-certification. The report will need

harmonisation of all results from different projects. Particularly, one part is missing, which is related to higher education. According to the projects in BiH, two IPA projects are related to referencing of general and VET sub-systems, and Tempus project to self-certification to QF-EHEA. The missing part is related to referencing (according the EQF criteria) of higher education. All parts should be integrated into one harmonised document;

- **P3-D.** Establishment and adaption of the work of relevant bodies (at appropriate levels) in the purpose of implementing the QF-BiH

    - **Recommendations**:

        - After the establishment of the QF-BiH Commission, relevant and effective QF-BiH authorities (council, QF-BiH Commission, and sector councils) should be established, according to all precious analysis and findings. Before that, the mandate and their role should be clear and well-prepared;

        - Communicate with all key stakeholders proposed authorities;

- **P3-E.** Preparation of the IT base and website

    - **Recommendations**:

        - The IT platform and QF-BiH website should be developed and communicated to key stakeholders;

- **P3-F. P3-G. P3-H.** Developing of occupational and qualifications standards, along with the development of new and the modernising of existing study programmes

    - **Recommendations**:

        - According to the existing examples, guidelines, instructions, manuals, and effective trainings, relevant bodies and institutions in partnership with key stakeholders should design and validate occupational and qualifications standards and programmes;

- **P3-I.** Improving the system of recognition of foreign qualifications in BiH and BiH qualifications abroad using the QF-BiH in accordance with the principles of the Lisbon Convention and accompanying documents

    - **Recommendations**:

        - Use the QF-BiH, and self-certification and referencing to the EQF and the QF-EHEA, including evidence on effective quality assurance, for improvement the system of recognition of qualifications;

        - Train the staff working in competent bodies.

- **P4. Developing human resources and assuring quality of implementation of the Action Plan and the QF-BiH**;

    - **P4-A.** Training

        - This group of activities, as the whole package, lasts from the beginning to the end of the Action Plan implementation period. This package is focused on the training of staff at partner institutions in BiH and of implementing bodies and experts. There have been already well prepared training of experts within international projects (for example, within this project[17]).

        - **Recommendations**:

            - Continue with training and ensure the effective use of trained experts; develop criteria for selection of experts and transparent organisation of trainings;

    - **P4-B.** International cooperation and building of the reputation of the QF-BiH

        - There is already good, active international cooperation.

        - **Recommendations**:

            - The NCP in BiH should continue with the co-operations and active international participations in all relevant international bodies, networks and events.

    - **P4-C.** Dissemination of lifelong learning and the QF-BiH

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[17] Joint EU/CoE project "Strategic Development of Higher Education and Qualifications Standards"

- **Recommendations**:
  - For benefits to all citizens, stakeholders and the society, it is important to motivate all individuals to use QF-BiH effectively and to benefit from lifelong learning. It is important to create and to use all possible communication channels to promote this (conferences, round tables, focues groups, ICT, and others).

- **P4-D.** Quality assurance of the implementation of the Action Plan and the QF-BiH

  - **Recommendations**:
    - For the effective implementation of the Action Plan, as to all projects, it is important to establish internal QA system for the implementation of the Action Plan
    - The monitoring and regular report on all activities and results is very important - publish appropriate reports.

- **P5. Review and further development of the QF-BiH**
  - **P5-A.** Analysis of the level of success of the implementation of the QF-BiH
  - **P5-B.** Changes and amendments to the QF-BiH related documents
  - **P5-C.** Implementation of the validation of non-formal and informal learning
  - **P5-D.** Developing revised / amended self-certification and referencing reports.

    - **Recommendations**:
      - The above groups of activities should start in a couple of years, and effective recommendations should be prepared before that. In general, it is important to define methods and parameters of success, including transparent reports.
      - The system for validation of non-formal and informal learning should be developed according to the EU Recommendations and Guidelines, but after the successful implementation of the QF-BiH and quality assurance system.
      - New experts and staff should be trained on the validation of non-formal and informal learning.
      - An appropriate testing of the validation system should be in place before the full implementation.
      - Revised and updated self-certification and referencing reports should be prepared and presented.

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9. Annexes

9.1. BiH Action plan for development and implementation of the Qualifications Framework in BiH for the period 2014-2020

9.2. Examples of five qualifications standards

9.3. Examples of two occupational standards

9.4. Training module

9.5. Training agenda

9.6. List of BiH trainers on development and use of Qualifications and Occupational Standards

9.1. Action Plan for the Development and Implementation of the Qualifications Framework in BiH for the period 2014-2020

ABBREVIATIONS

APOSO	Agency for Pre-primary, Primary and Secondary education
BD	Brčko District
BiH	Bosnia and Herzegovina
CIP	Centre for Information and Recognition of Documents in Higher Education
CoE	Council of Europe
EC	European Commission
ECVET	European system of credit points in vocational education and training
EKO (English: EQF)	European Qualifications Framework
ENIC/NARIC	European Network of Information Centres in the European Region/National Academic Recognition Information Centres
ENQA	European Association for Quality Assurance in Higher Education
EQAR	European Quality Assurance Register for Higher Education
EQAVET	European Quality Assurance System in Vocational Education and Training
ESCO	European system of skills, competences/qualifications and occupations
EU	European Union
ETF	European Training Fund
EUA	European University Association
HEA	Agency for the Development of Higher Education and Quality Assurance in BiH
HEAARS	Agency for the Accreditation of Higher Education Institutions in RS
QF BiH	Qualifications Framework in Bosnia and Herzegovina
MCA	Ministry of Civil Affairs
NKO	State Qualifications Framework
NPP	Teaching Curriculum
NQF	State Qualifications Framework
QF-EHEA	Qualifications Framework of the European Higher Education Area
RS	Republika Srpska
UNESCO	United Nations Education, Science and Culture Organisation
VŠU (English: HEI)	Higher Education Institutions

9.1.1 Introduction

The rapid development of modern technology and markets in Europe and aging population have created numerous challenges for the education systems of European Union member states, as well as those that wish to join the EU – including Bosnia and Herzegovina. One of the main requirements is the necessity of a systemic appraisal of education and training in each state and its comparison with education systems in other countries through common European reference meta-frameworks: the European Qualifications Framework for Lifelong Learning and the European Higher Education Area.

The necessity for education to prepare experts, who can respond successfully to the continuously changing economic challenges and the dynamic labour market, terminates definitely the view of education as a single, initial period of life, which has a its beginning, end and application stage. In modern times, education becomes a lifelong process.

Following several years of preparation, in April 2008, the European Parliament and the Council of the European Union adopted the European Qualifications Framework for Lifelong Learning, in order to promote mobility and lifelong learning for all European citizens. A proposal to amend and expand the role of the European Qualifications Framework followed in May 2013, primarily in the purpose of supporting and accelerating the implementation of national qualification frameworks, and assisting the development and implementation of evaluation and recognition of non-formal and informal learning in EU member states.

The European Qualifications Framework for Lifelong Learning is aimed at facilitating the recognition and comparison of qualifications, thereby facilitating citizens' mobility, the establishment of a lifelong learning concept and quality assurance for education and acquired qualifications. The strategic goal of the European Qualifications Framework is to ensure that the qualifications acquired by the citizens meet the social and economic needs of individual countries and the European Union as a whole. This includes quality assurance for all qualifications, access to education for all citizens, and horizontal and vertical advancement/progression through the education system.

The European Qualifications Framework introduces eight common reference levels, described through a generic presentation of the complexity of knowledge, skills and competences, achieved on the basis of learning outcomes. The eight levels include all types and classes of qualifications and all learning modes. They serve as an instrument for recognition, understanding and comparison of qualifications on the basis of quality, within EU countries and beyond.

Understanding the significance of the European Qualifications Framework for its further socio-economic reform, and its education reform in particular, Bosnia and Herzegovina is undertaking activities aimed at developing its Qualifications Framework. The Council of Ministers of Bosnia and Herzegovina has adopted a series of decisions, which are necessary for the development of a Qualifications Framework in Bosnia and Herzegovina.

On 24 March 2011, the BiH Council of Ministers rendered the Decision on Adoption of the Baseline of the Qualifications Framework in BiH. On 11 January 2013, it rendered the Decision on the Appointment of a Commission for the Development of the Qualifications Framework in BiH. The Commission was tasked to develop and propose a work plan for all major activities related to the development of a Qualifications Framework in Bosnia and Herzegovina.

9.1.2. Glossary

European Qualifications Framework for Lifelong Learning (EQF) - an instrument for the establishment of levels of qualifications, structured to act as a means of identifying and understanding qualifications among national qualifications frameworks.

National Qualifications Framework (NQF) - an instrument for the classification of qualifications acquired in a particular country, which provides the basis for clarity, accession, progression, acquisition and quality of qualifications.

Qualifications Framework in Bosnia and Herzegovina (QFBIH) - an instrument for the classification of qualifications acquired in Bosnia and Herzegovina, which provides the basis for clarity, accession, progression, acquisition and quality of qualifications.

Qualifications Framework for the European Higher Education Area (QF-EHEA) - a document adopted by the Conference of European Ministers of Education, held in Bergen in 2005. It defines the generic descriptors for each of the three cycles of higher education and it is applied in all signatory states to the Bologna Process.

Qualifications - a formal title of the result of a process of assessment and validation obtained once a competent body determines that an individual has achieved the learning outcomes as per the defined standards.

Learning outcomes - a description of what a student/learner knows, understands and is able to perform on the basis of a completed learning process, defined through knowledge, skills and competences.

International Standard Classification of Education (ISCED) - an international standard classification of education.

Knowledge - a set of facts, principles, theories and practices, which are related to a particular field of work or study, resulting from the adoption of information through the learning process. Within the context of the European Qualifications Framework for Lifelong Learning, knowledge is described as theoretical and/or factual.

Skills - the ability to apply knowledge and use the "know how" principle to perform a certain task. They help in the problem solving process aimed at solving a problem. Skills can be cognitive (including the use

of logical, intuitive and creative thinking), practical (including physical agility and use of methods, materials, devices and instruments) and social (communication and cooperation skills, emotional intelligence, etc.)

Competence - the ability to apply knowledge, skills and personal, social and methodological abilities at work or while learning, both in private and in professional development. Within the context of the European Qualifications Framework, competences are described as responsibility and independence.

Lifelong Learning - linking formal, non-formal and informal learning in order to acquire the ability for continuous improvement of quality of life.

Formal Education - learning led by a teacher or an instructor, acquired in educational institutions and in accordance with curricula approved by responsible education authorities. It ends with the awarding of an official document.

Non-formal Education/ Learning - an organised process of learning and education focused on improving, specialising or amending knowledge, skills and competences in accordance with special programmes implemented by education and training providers (regular schools, training centres, companies, agencies, etc.)

Informal Learning - spontaneous learning and acquiring of knowledge and skills through everyday activities.

Inclusive Education - the right of every person to equal opportunity during education. This particularly includes the right of children with developmental difficulties and gifted children to develop their potential to the maximum through support which includes flexible programmes, adequately prepared teachers, expert support and welcoming, aimed at developing tolerance, acceptance of differences and later social inclusion.

Validation of Non-formal and Informal Learning - a series of procedures aimed at assessing the competences acquired through non-formal or informal learning, including the issuance of a certificate by a responsible institution in accordance with pre-defined and accepted criteria and standards.

Quality Assurance - a system and procedures applied in order to preserve the agreed standards of products and services, including their continued improvement.

Workload - the estimate time for all learning activities, which is necessary for the achievement of certain learning outcomes.

Credit point - a measurement unit for the range/volume of competences acquired. It is determined on the basis of the average total time successful students/learners require for acquiring such competences. Example: ECTS point (European Credit Transfer and Accumulation System) in higher education.

Level Indicators/ Descriptors - a generic description of learning outcomes of a particular level.

Reference Level of Qualification - the complexity of competences acquired, which is described by a set of descriptors.

Qualification Standard - the standard which establishes the conditions for the acquisition of an official document on a particular qualification. It includes all data necessary for determining the level, the credit points and the profile of a qualification, as well as data required for quality assurance of the qualification standard.

Occupational Standard - a list of all jobs which an individual performs within a particular occupation and a list of competences required for their successful performance.

9.1.3. Vision

The Qualifications Framework in Bosnia and Herzegovina (QFBiH) will allow every citizen the acquisition of identifiable, reliable and recognised qualifications, which are comparable to the European Qualifications Framework (EQF. It will provide access to lifelong learning, increase competitiveness and social inclusion and enable links to the European labour market and education area. It will also contribute to the development of an education system linked to the labour market, as well as economic and social development of Bosnia and Herzegovina.

9.1.4. Mission

The Qualifications Framework in Bosnia and Herzegovina establishes and develops reliable and identifiable qualifications, based on quality and lifelong learning, relevant for the labour market and comparable to qualifications in other countries in Europe and the world.

The implementation of the Qualifications Framework in Bosnia and Herzegovina supports the development of education based on learning outcomes and a system of internal and external quality assurance at all levels of education, mechanisms for the evaluation and recognition of non-formal and informal learning, increased access to education, social inclusion of all participants and coherence of the education system.

Through the introduction of transparent qualifications within eight levels, the Qualifications Framework in Bosnia and Herzegovina builds public confidence in the value of education documents and contributes to easier employability.

The Qualifications Framework in Bosnia and Herzegovina creates the conditions for the society's progress towards European integration by fulfilling the goals of the EU 2020 Strategy through increased mobility, flexibility and competitiveness of the labour force, and better links between the education system and the labour market, thereby allowing the citizens a European and regional progression of their qualifications.

9.1.5. Goals

The Qualifications Framework in Bosnia and Herzegovina is an instrument necessary for assuring equal use and application of standards: education and occupations, learning outcomes, qualifications, professional competence and certification of education service providers. The Qualifications Framework determines the standards of learning outcomes expected from students and adults that acquired a certain qualification. At the same time, the Qualifications Framework guarantees equality and reliability of qualifications both for the employers and for the learners.

The general goals of the Qualifications Framework in Bosnia and Herzegovina are identified through four key lines of action:

1. Linking, facilitating communication and creating partnerships between all the relevant stakeholders;
2. Linking with the **European Qualifications Framework for Lifelong Learning** (EQF) and the **Qualifications Framework for the European Higher Education Area** (QF-EHEA), and consequently with the qualifications frameworks of other countries. This creates the basis for simpler recognition of BiH qualifications in other countries and recognition of qualifications from other countries in BiH;
3. Reform of the BiH education system, including development and introduction of learning outcomes into the curricula, establishment and improvement of the quality assurance system, relating to the needs of the labour market, mobility and other needs of individuals and the society;
4. Development of a system of evaluation and recognition of non-formal and informal learning within the lifelong learning process.

The specific goals of the Qualifications Framework in Bosnia and Herzegovina are:

- Understanding different types of qualifications and their relationships;
- Comprehensible presentation of education achievements to employers, learners and parents;
- Guiding individuals in the selection of education and career; facilitating mobility and more transparent access to education throughout the life of an individual;
- Facilitating identification and recognition of national qualifications abroad and of foreign qualifications in Bosnia and Herzegovina;
- Creating the pre-conditions for introducing a quality assurance system for existing and new qualifications;
- Contributing to quality employability;
- Creating the pre-conditions for the development of a system of evaluation and recognition of competences acquired through non-formal and informal education / learning;
- Improvement of co-operation with all social partners;
- Promoting education.

9.1.6. SWOT Analysis

In the purpose of an easy preparation of all activities related to the achievement of pre-defined general and specific objectives, it is very important to analyse all internal and external, as well as positive and negative factors, during the development of project tasks. An analysis of all internal strengths and weaknesses in BiH, as well as external opportunities and threats, is presented in the table below:

ADVANTAGES / STRENGTHS	WEAKNESSES / SHORTCOMINGS
• Expressed political will and BIH commitment to develop a qualifications framework • Existence of starting documents required for further work • QFBiH Commission appointed by the Council of Ministers of BiH • Long tradition and huge experience in implementing formal programmes in general, vocational and higher education • Experience in implementing the Bologna process • Existence of good examples of internal and external quality assurance systems • Involvement in international activities and projects • Involvement in the work of European bodies which coordinate the development and implementation of qualifications frameworks • Reform of all curricula based on learning outcomes • Existence of examples of learning outcomes, occupational standards and qualifications standards.	• Learning outcomes not visible enough to the user • Formal education still mainly based on "input" (contents) and not on learning outcomes • Rare good examples of implementation of learning outcomes • Insufficient involvement of competent persons from BiH in the education reform process • Insufficient flexibility of the formal education • Insufficient level of development of internal and external quality assurance systems at levels of education • Absence of a system of evaluation and recognition of informal and non-formal learning • Insufficient experience/practices in certification of education service providers • Insufficient links between the education sector and the labour market
OPPORTUNITIES	THREATS
• EU and other financial and expert assistance in the development of a qualifications framework • Awareness of the need to reform education, develop a transparent quality assurance system • Awareness of the need for an increased mobility of citizens and lifelong learning • Awareness of the need for better links with employers and other stakeholders, and for the development of mutual partnerships in the interest of all • Awareness of the need for better international identification and comparability of qualifications from BiH • Existence of good regional links and support, as well as possibilities for further co-operation • Good co-operation with international experts, particularly those coming from countries with experience in developing and implementing qualifications frameworks • Availability of good and bad practice examples from other countries • Influence and positive pressure resulting from international student and teacher mobility	• Formal education which is not based on learning outcomes • Insufficient willingness of key stakeholders to transform education towards a knowledge-based society • Most of the key stakeholders still perceive the process of development and implementation of a qualifications framework as a purely bureaucratic process • Presence of interest-based groups which are slowing down the process of development and implementation of a qualifications framework • Lack of confidence of individuals, groups and institutions towards frequent education reforms • Insufficient understanding and absence of adequate capacities of the business sector for the development of a qualifications framework • Lack of information and lack of understanding among students, parents, employers and the public about the benefits of a qualifications framework • Impact of the economic situation • Absence / inability to provide adequate financial means for the development and implementation of a qualifications framework

9.1.7. Activities

The implementation of all activities towards the achievement of the above goals and adequate results will be conducted through a series of activities, organised in five major activity packages (P1-P5), as follows:

Activity Package 1
P1. Designing the QFBiH
  A. Designing and linking all components / elements of QFBiH:
   I.   Analysis of EU instructions / conclusions and experiences from other countries in developing and implementing qualifications frameworks (their strengths, weaknesses, challenges and solutions) and learning about the current solutions in BiH
   II. Defining, developing and incorporating domains of learning outcome (knowledge, skills, competences) into the curricula
   III. Designing the structure of sets of learning outcomes[18]
   IV. Defining characteristics for the classification of qualifications
   V.   Defining workloads, credit points and learning outcomes[19]
   VI. Designing the structure and the contents of qualification standards
   VII. Designing the structure and the content of occupational standards
   VIII. Designing the basic structural elements of education / study programmes
   IX. Designing the structure of the BiHQF website
   X.   Links with the European Qualifications Framework for Lifelong Learning (EQF) and the Qualifications Framework for the European Higher Education Area, in the interest of identification and recognition of BiH qualifications abroad and of foreign qualifications in BiH
  B. Defining processes / procedures and inclusion of relevant implementing bodies
   I.   Education and learning (formal, non-formal, informal)
   II. Examination and grading
   III. Awarding qualifications
   IV. Developing a proposal of qualification standards, occupational standards and programmes
   V.   Recognition of previous learning, including evaluation of non-formal and informal learning
   VI. Evaluation, accreditation, licensing
   VII. Quality assurance (internal and external: of education, examination and grading, awarding of qualifications, evaluation of occupational and qualification standards, evaluation of the programmes and work of institutions, accreditation and licensing of programmes and institutions)
   VIII. Defining the role and responsibilities of implementing bodies (ministries, agencies, schools, universities, boards, commissions, teams, etc.) in the purpose of greater employment
   IX. Promoting co-operation of implementing bodies, labour market stakeholders and social partners in the purpose of better quality employment and increased mobility
  C. Developing examples and work instructions
   I.   Developing examples of all components / elements of the QFBiH
   II. Simulation of defined processes / procedures
   III. Developing instructions for the work of implementing bodies, including instructions for internal and external quality assurance of all processes / procedures

Activity Package 2
P2. Testing the QF BiH:
  A. Development of selected examples of occupational standards
   I.   Development of occupational standards and, for some examples, co-ordinated with the development of qualification standards
  B. Development of selected examples of qualification standards
   I.   Development of selected examples of qualification standards for all levels of the Qualifications Framework, possibly for different profiles

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[18] In the future, learning outcomes and sets of learning outcomes should be carefully elaborated, as key elements of a qualifications framework.

[19] See Annex: Baseline of the QF in BIH.

C. **Development of adequate education / study programmes**
   I. Development of adequate programmes in co-ordination with the development of qualification standards
D. **Testing processes / procedures of implementing bodies for selected examples**
   I. Process analysis and development of instructions for internal and external quality assurance for all processes / procedures
E. **Development and testing of the IT platform, including the QFBiH website**
F. **Analysis, testing and, if needed, changes and amendments to elements / components and processes / procedures of implementing bodies**
   I. Analysis of the QFBiH and, if needed, changes and amendments to elements / components and processes/procedures
   II. Analysis, grouping and proposing the structure of sector councils.

Activity Package 3
P3. Development of QFBIH documents and implementation:
   A. **Developing proposals and adoption of legal documents at appropriate levels of authority**
      I. Decision on Changes and Amendments to the Decision on the Appointment of the QF BiH Commission – adoption by the Council of Ministers of BiH
      II. Decision on the Adoption of the Action Plan for the Development and Implementation of the QF BiH 2014-2020 – adoption by the Council of Ministers of BiH
      III. Decision on the Adoption of the QFBiH – adoption by the Council of Ministers of BiH
   B. **Improving the quality assurance system**
      I. Improve legislation related to quality assurance at all levels of education and qualification (to be performed by: responsible education authorities)
      II. Adapt the existing internal and external quality assurance bodies (to be performed by: responsible education authorities in co-operation with HEA, APOSO and education institutions)
      III. Education and training of persons working in internal and external quality assurance bodies
   C. **Development and presentation of self-certification reports and referencing reports in relation to EQF and QF-EHEA**
      I. Self-certification report for QFBiH in relation to QF-EHEA(to be performed by: the Ministry of Civil Affairs (MCA), responsible education authorities, experts)
      II. Referencing report for QF BiH in relation to EQF (to be performed by: MCA, responsible education authorities, experts as ordered by education authorities)
   D. **Establishment and adaptation of the work of relevant bodies (at appropriate levels) in the purpose of implementing the QFBiH:**
      I. Establishing the QFBiH Implementation Council (to be performed by: authorities responsible for education and employment, to be appointed by the Council of Ministers of BiH)
      II. Extension of the mandate of the QF BiH Commission and its adaptation to new tasks
      III. Establishing sector councils
   E. **Preparation of the IT base and website**
      (to be performed by: MCA in co-operation with relevant education and other authorities)
   F. **Developing occupational standards**
      I. Preparation of work and training of staff of relevant partners and bodies
      II. Co-ordinated development of occupational standards depending on strategic interests and harmonised with the development of qualification standards
      III. Evaluation of proposals and enabling access through the QFBiH website
   G. **Developing qualification standards**
      I. Preparation of work and training of staff of relevant partners and bodies
      II. Co-ordinated development in relation to the development of occupational standards and programmes
      III. Evaluation of proposals and enabling access through the QF BiH web page
   H. **Development of new and modernisation of existing education / study programmes**
      I. Preparation of work and training of staff of relevant partners and bodies
      II. Co-ordinated development in relation to the development of qualification standards
      III. Evaluation of proposals and enabling access through the website, including evaluation of institutions implementing the programmes (accreditation and licensing)

I.   **Improving the system of recognition of foreign qualifications in BiH and national qualifications abroad using the QFBiH in accordance with the principles of the Lisbon Convention and accompanying documents**
  I.   Improve legislation related to the recognition of foreign qualifications in BiH and to national qualifications abroad (to be performed by: relevant education authorities)
  II. Adapt the existing bodies for recognition of foreign qualifications in BiH and national qualifications abroad
  III. Education and training of staff working in bodes for recognition of foreign qualifications in BiH and national qualifications abroad

Activity Package 4

P4. Developing human resources and assuring quality of implementation of the Action Plan and the QFBiH:
  A. **Training**
    I.   Training of staff of implementing bodes and partner institutions in BiH
    II. Determining criteria and selecting experts
    II. Training of experts
  B. **International co-operation and building of the reputation of the QF BiH**
    I.   Active international co-operation, monitoring of and participation in the work of bodies in Europe and monitoring of the work of other countries of interest
  C. **Dissemination of lifelong learning and the QFBiH**
    I.   Promotion of lifelong learning to stakeholders and the public
    II. Open communication (via the website and other) with individuals and the public
    III. Dissemination and promotion of the QFBiH within BiH and in other countries and bodies in Europe
  D. **Quality assurance of the implementation of the Action Plan and the QFBiH**
    I.   Preparing reports on regular activities by all activity implementers
    II. Monitoring activities and preparation of periodic reports
    III. Submission of reports

Activity Package 5

P5. Review and further development of the QFBiH:
  A. **Analysis of the level of success of the implementation of the QF BiH**
    I.   Analysing the level of success in implementing the QF BiH (methods, parameters of success, etc.)
    II. Drafting proposed changes and amendments to the QF BiH and relevant legal documents, including draft proposals for the evaluation of non-formal and informal learning
  B. **Changes and amendments to the QF BiH-related documents**
  C. **Implementation of the evaluation of non-formal and informal learning**
    I.   Determining criteria, selection and training of experts
    II. Training representatives of relevant bodies, partner institutions
    III. Implementation of evaluation of non-formal and informal learning
  D. **Developing revised / amended self-certification and referencing reports**
    I.   Revised / amended self-certification report on QF BiH in relation to the QF-EHEA
    II. Revised / amended referencing report on QF BiH in relation to the EQF.

Table of activities:

Activity	2014				2015				2016				2017				2018				2019				2020			
P1-A	x	X	X	x	x	x	x	x																				
P1-B			x	x	x	x	x	x	x	X	x																	
P1-C			X	x	x	x	x	x	x	X	x																	
P2-A		X	x	x	x	x	x	x	x	x																		
P2-B		X	x	x	x	x	x	x	x	x																		
P2-C		X	x	x	x	x	x	x	x	x	x																	
P2-D		X	x	x	x	x	x	x	x	x	x																	
P2-E					x	x	x	x	x	x	x	x																
P2-F					x	x	x	x	x	x	x	x																
P3-A		x	X	x	x	x	x	x	x	x	x	X																
P3-B					x	x	x	x	x	x	x	X																
P3-C					x	x	x	x	x	x	x	X	x	x	x	x												
P3-D		x	X	x	x	x	x	x	x	x	x	X																
P3-E									x	x	x	X	x	x	x	x												
P3-F									x	x	x	X	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	X
P3-G									x	x	x	X	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	X
P3-H									x	x	x	X	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	X
P3-I									x	x	x	X	x	x	x	x												
P4-A	x	x	X	x	x	x	x	x	x	x	x	X	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	X
P4-B	x	x	X	x	x	x	x	x	x	x	x	X	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	X
P4-C	x	x	X	x	x	x	x	x	x	x	x	X	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	X
P4-D	x	x	X	x	x	x	x	x	x	x	x	X	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	X
P5-A												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	X
P5-B																	x	x	x	x	x	x	x	x	x			
P5-C																					x	x	x	x	x	x	x	X
P5-D																X	x	x	x	x	x	x	x	x	x	x	x	X

Activity Package: P1 - Designing the QFBIH

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implement-ation)	Results achieved (indicate also the activity that depends on the result cited)
P1-A	QF BiH Commission; MCA and relevant ministries of education and labour; HEI; education agencies[20] and pedagogic institutes; employers' associations and labour unions	01.2014-12.2015	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Action Plan • Results of previous QF BIH activities • Results of previous projects	• Overview and description of QF BiH elements • Template for Learning Outcome Sets • Template for Occupational Standards • Template for Qualification Standards • Basic elements of programme structure • Structure of the QF BiH website • Overview of results achieved in developing QF BIH aimed at identification and recognition of BiH qualifications abroad and foreign qualifications in BiH
P1-B	QF BiH Commission; MCA and relevant ministries of education and labour; HEI; education agencies[21] and pedagogic institutes; employers' associations and labour unions	09.2014-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Action Plan	• Overview and description of all processes / procedures and inclusion of relevant bodies • Report on partnerships established and promoting further development
P1-C	QF BiH Commission; MCA and relevant ministries of education and labour; HEI; education agencies[22] and pedagogic institutes; employers' associations and labour unions	09.2014-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Action Plan • Working results and final results of P1-A, B • Working results and final results of P2-A, B, C, D, E, F	• Examples of QF BiH elements • Simulation of processes / procedures • Instructions for the work of implementing bodies

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[20] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

[21] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

[22] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

Activity Package: P2 - Testing of QFBIH

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implement-ation)	Results achieved (indicate also the activity that depends on the result cited)
P2-A	QF BiH Commission; HEI; education agencies[23]; relevant ministries; professional associations; chambers; projects and schools	06.2014-06.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Working results and final results of P1-A, C	• Examples of occupational standards
P2-B	QF BiH Commission; HEI; education agencies[24]; relevant ministries; professional associations; chambers; projects and schools	06.2014-06.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Working results and final results of P1-A, C	• Examples of qualification standards
P2-C	QF BiH Commission; HEI; education agencies[25]; relevant ministries; professional associations; chambers; projects and schools	06.2014-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Working results and final results of P1-A, C	• Examples of education / study programmes
P2-D	QF BiH Commission; relevant ministries, HEA; HEARS; APOSO; HEI; schools and projects	06.2014-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Working results and final results of P1-A, B, C • Working results and final results of P2-A, B, C	• Analysis of processes / procedures planned • Instructions for internal and external quality assurance of all processes / procedures

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[23] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

[24] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

[25] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

Activity		Period: from-to	Resources	Results of previous activities	Results achieved
P2-E	QF BiH Commission;	01.2015-12.2016	Int'l donors; IT experts and equipment	• Working results and final results of P1-A, B, C • Working results and final results of P2-A, B, C, D, F • Working results and final results of P3-A, B, D	• IT base and QF BiH website
P2-F	QF BiH Commission; MCA; relevant ministries of education and labour; HEI; education agencies[26]; employer associations and labour unions	01.2015-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Working results and final results of P1-A, B, C • Working results and final results of P2-A, B,C, D, E	• Analysis of components and processes / procedures of QF BiH and proposal for changes and amendments of QF BiH, if needed • Proposal of sector councils

Activity Package: P3 - Development of QF BIH Documents and Implementation

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implement-ation)	Results achieved (indicate also the activity that depends on the result cited)
P3-A	QF BiH Commission; MCA; Council of Ministers of BiH	06.2014. (adopt decision on Commission status); 06.2014 (adopt Action Plan); 12.2016 (adopt QF BiH)	Commission members; national experts; projects and MCA	• Working results and final results of P1-A, B, C • Working results and final results of P2-A, B, C, D, E, F	• Decision on Changes and Amendments to the Decision on the Establishment of the Commission • Decision on the Adoption of the Action Plan • Decision on the Adoption of QF BiH

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[26] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

P3-B	QF BIH Commission; relevant authorities; HEA; HEAARS; APOSO; RS Higher Education Council; higher education institutions; schools	01.2015-12.2016	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012 Int'l donors, budgets at appropriate levels of authority; national and int'l experts and IPA 2	• Working results and final results of P1-B, C • Working results of P2-D, F • Working results and final results of P3-A	• Legislation related to QA at all levels of education • Bodies adapted to internal and external QA • Education and training of staff in bodies responsible for internal and external QA systems-completed
P3-C	HEA; HEAARS; APOSO; MCA; relevant education authorities; experts and QF BIH Commission	01.2015-12.2017	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012; Int'l donors, budgets of appropriate levels of authority; national and int'l experts and IPA 2?	• Working results and final results of P1-B • Working results and final results of P2-A, B, C, D, E, F • Working results and final results of P3-A, B	• Report on the improvement of the QA system in BiH • *Self-certification report* • *Referencing report*
P3-D	Relevant authorities	03.2014-12.2016	National experts; projects	• Working results and final results of P1-C • Working results and final results of P2-A, B, C, D, E, F • Working results and final results of P3-A, B	• Council for QF BIH Implementation established • Extension and adaptation of mandate of QF BiH Commission • Establishment of sector councils
P3-E	QF BiH Commission	01.2016-12.2017	Int'l donors; IT experts and equipment	• Results of P1-C • Results of P2-E • Results of P3-A, B, D	• IT platform and QFBIH website prepared
P3-F	Sector councils; QF BiH Commission; Higher education institutions; higher education agencies[27]; relevant ministries; professional associations; chambers; projects and schools	01.2016-12.2020	BHQFHE TEMPUS; IPA 2012; Int'l donors; BiH institutions budget; national and int'l experts and IPA 2	• Results of P1-C • Results of P2-A, F • Results of P3-A, B, D, E	• Occupational standards

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[27] Agency for Pre-school, Primary and Secondary education of BiH, Agency for the Development of Higher Education and Quality Assurance of BiH, BiH Centre for Information and Recognition of Documents in the Field of Higher Education, Republika Srpska Agency for Accreditation of Higher Education Institutions

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implement-ation)	Results achieved (indicate also the activity that depends on the result cited)
P3-G	Sector councils; QF BiH Commission; Higher education institutions, agencies[28]; relevant ministries; professional associations; chambers; projects and schools	01.2016-12.2020	BHQFHE TEMPUS; IPA 2012; Int'l donors, budgets of app. levels of authority, national and int'l experts and IPA 2	• Results under P1-C • Results f P2-B, F • Results of P3-A, B, D, E	• Qualification standards
P3-H	Higher education institutions; schools; education agencies[29]; pedagogical institutes and relevant ministries	01.2016-12.2020	BHQFHE TEMPUS; IPA 2012 Int'l donors, budgets at appropriate levels of authority, national and int'l experts and IPA 2	• Results of P1-C • Results of P2-C, F • Results of P3-A, B, D, E	• Programmes
P3-I	Relevant authorities and CIP	01.2016-12.2017	BHQFHE TEMPUS; IPA 2012; Int'l donors, budgets at appropriate authority level; national and int'l experts and IPA 2	• Results of P1-C • Results of P2-F • Results of P3-A, B, C, D	• Improved system of recognition of foreign qualifications in BiH and national qualifications abroad

Activity Package: P4 - Developing human resources and quality assurance of the implementation of the Action Plan and the QF BiH

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implement-ation)	Results achieved (indicate also the activity that depends on the result cited)
P4-A	Projects (in collaboration with the QF BIH Commission), national experts; education institutions; labour unions	01.2014-12.2020	EU/CoE SDHEQS; BHQFHE TEMPUS; IPA 2012 Int'l donors; national and int'l experts and IPA 2	• Working results and final results of P1-C • Working results and final results of P2-A, B, C, D, E, F • Working results and final results of P3-A, B, C, D, E, F, G, H, I	• Workshops for staff of institutions implementing QF BiH and of partner institutions • Criteria for the selection of experts • Workshops for new experts

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[28] Agency for the Development of Higher Education and Quality Assurance of BiH, Republika Srpska Agency for Accreditation of Higher Education Institutions, Agency for Pre-school, Primary and Secondary education of BiH and BiH Centre for Information and Recognition of Documents in the Field of Higher Education

[29] Agency for the Development of Higher Education and Quality Assurance of BiH, Republika Srpska Agency for Accreditation of Higher Education Institutions, Agency for Pre-school, Primary and Secondary education of BiH and BiH Centre for Information and Recognition of Documents in the Field of Higher Education

P4-B	QF BIH Commission and QF BIH Council	01.2014-12.2020	EQF (ETF, European Commission; projects etc.); QF-EHEA (CoE, projects, etc.) and support through other related initiatives (ESCO, EQAVET, Europass, ECVET, etc.)	• Action Plan • All working results and final results	• Active int'l cooperation • Participation and monitoring of work of QF-EHEA bodies (Network of NC on QF-EHEA, BFUG, ENIC / NARIC, ENQA, EQAR, ERA, EUA, EURASHE, UNESCO-CEPES, regional networks, etc.) • Participation and monitoring of work of EQF bodies (National Contact Points; Advisory Group, etc.) • Observation and exchange of experiences during development and implementation of NQF in other countries in the region and the EU
P4-C	QF BIH Commission; QF BIH Council; national experts; HEA; HEAARS; APOSO; CIP; The media and the public	01.2014-12.2020	Projects and int'l donors	• All working results and final results	• Dissemination of importance of LLL among all stakeholders and partners (conferences, round tables, etc.) • Communication with partners and the public, using modern technologies • Dissemination of QF BiH in BiH and in other countries • National and int'l statements at public events and publications
P4-D	QF BIH Commission	01.2014-12.2020	Donors; projects; national and int'l experts	• Action Plan • All working results and final results	• Establishment and operation of internal QA system for the implementation of the Action Plan • Monitoring and regular reporting on all activities and results to relevant bodies and the public on the development and implementation of QF BiH

Activity Package: P5 - Review and further development of the QFBIH

Activity	To be performed by: (who takes the lead, who participates)	Period: from-to (start and end of work)	Resources (people, financial means, premises, equipment)	Results of previous activities (as a precondition for successful further implementation)	Results achieved (indicate also the activity that depends on the result cited)
P5-A	QF BIH Commission All implementers from P1 to P4	01.2017-12.2020	Donors; projects; int'l and national experts	• All working results and final results	• Defined methods and success parameters • Report on success level analysis in implementing QF BiH in accordance with defined methods and success parameters • Proposed system of evaluation of non-formal and informal learning
P5-B	QF BIH Commission; relevant authorities; HEA; HEAARS;APOSO;RS Higher Education Council; Higher education institutions; schools	01.2018-12.2019	IPA 2012; Int'l donors; budgets at relevant levels of authority; National and int'l experts	• Working results and final results of P5-A	• Changes and amendments to legislation on QF BiH including incorporation of a system of evaluation of non-formal and informal learning into legislation at different levels of authority
P5-C	QF BIH Commission; quality assurance bodies; education institutions	01.2019-12.2020	Donors; projects; national and int'l experts and education institutions	• Working results and final results of P5-A, B	• Criteria for the selection of experts • Preparation and implementation of education and training of experts in relevant institutions for the implementation of evaluation of non-formal and informal learning • Start of implementation of evaluation of non-formal and informal learning
P5-D	HEA; HEAARS; APOSO; MCA; relevant education authorities; experts and QF BIH Commission	01.2018-12.2020	IPA 2012 ;int'l donors; budgets at relevant levels of authority; national and int'l experts	• Results under P3-C • Working results and final results of P4-D • Working results and final results of P5-A, B, C	• Revised *Self-certification report* • Revised *Referencing report*

9.1.8. The Action Plan prepared by the Commission for developing Qualifications Framework in Bosnia and Herzegovina, which is appointed by the decision of the Council of Ministers on 11.1. 2013 ("Official Gazette", No. 9/13 and 84/13), composed of:

1. MSc. Daria DUILOVIĆ[30], Ministry of Civil Affairs,
2. Mira GRBIĆ, Ministry of Education and Culture of the Republic of Srpska,
3. Marko NEDIĆ, PhD, Ministry of Education, Science, Culture and Sport, Posavina Canton,
4. Lamija HUSIĆ, Ministry of Education, Science and Youth, Sarajevo Canton,
5. MSc. Mara Matkić, Department of Education in the Government of Brčko District of Bosnia and Herzegovina,
6. Nina BIJEDIĆ, PhD, University of "Džemal Bijedić" Mostar, the Rectors' Conference of Bosnia and Herzegovina,
7. MSc. Đorđe MARKEZ, University of Banja Luka, the Rectors' Conference of Bosnia and Herzegovina,
8. Dražena GAŠPAR, PhD, University of Mostar, the Rectors' Conference of Bosnia and Herzegovina,
9. Slavica Škoro, the Agency for Development of Higher Education and Quality Assurance (HEA),
10. Dragana DILBER, Centre for Information and Recognition of Qualifications in Higher Education (CIP),
11. Marija NALETILIĆ, Agency for preschool, primary and secondary education (APOS),
12. Vedrana ĐERIĆ, Agency for Statistics of Bosnia and Herzegovina,
13. Haris KARAČIĆ, FBiH Institute for Statistics,
14. Dolores PEULIĆ, RS Institute for Statistics,
15. Zibija HODŽIĆ, Ministry of Civil Affairs,
16. Jasmina HERCEGOVAC, Ministry of Labour and Social Policy FBiH,
17. Rajko KLIČKOVIĆ, Ministry of Labour, War Veterans and Disabled Persons' Protection RS,
18. Ranko MILIĆ, Association of Employers of RS,
19. Đevad HADŽIĆ, Alliance f Trade Unions of Bosnia and Herzegovina - The Confederation of Trade Unions of Bosnia and Herzegovina.

9.1.9. Annex

Baseline of the Qualifications framework in Bosnia and Herzegovina[31]

Introduction

The document "Baseline of the Qualifications Framework in Bosnia and Herzegovina" is based on the educational tradition and current educational framework in Bosnia and Herzegovina, the needs of economic development, individuals and society as a whole, and prepared in compliance with the provisions of the European Qualifications Framework (EQF) and respective European and international regulations.

This document provides foundations for the development of the "Qualifications Framework in Bosnia and Herzegovina", which should establish a link between the previous, current and future learning outcomes and position them in the context of mutual relations in Bosnia and Herzegovina, but also within the European Qualifications Framework and European Education Area, and which should be established at latest by 2015. The foundations laid down in this document represent guidelines for the harmonisation of regulations governing elementary education, secondary education and research and higher education, i.e. lifelong learning, and for the establishment of better linkages between the labour market changes and needs and educational programmes in Bosnia and Herzegovina.

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[30] The Commission unanimously elected the representative of the Ministry of Civil Affairs Ms Daria Duilović for the chairperson at its first meeting

[31] "Official Gazette", number 31/11

Implementation of the strategic objectives of the European Union member countries, from the objective of becoming the most competitive economy to establishing a widely accepted European system of values, resulted in a new approach to education. Education in the European Union is treated as one of the key factors for achievement of the above strategic objectives.

Rapid technological changes and development of the European market place numerous requirements on educational systems of all EU member countries, and also on the systems of the countries aspiring to join the European family, including Bosnia and Herzegovina. One of the first requirements is related to a necessity of systematic evaluation of education and training in all countries and ability of comparison with educational systems of other countries, on the basis of a jointly established European reference framework.

A demand that education should generate experts, able to successfully respond to constantly changing economic challenges and dynamic and expanding job market, moves away from the opinion that education represents just one period of life which has its beginning and its end. Education has become a lifelong process and a constant in human life.

In 2008, after several years of working on the material, the European Parliament and Council of the European Union adopted the European Qualifications Framework for Lifelong Learning to facilitate lifelong learning, whereby fulfilling the requirements stipulated by the Lisbon Strategy for Growth and Jobs.

The European Qualifications Framework for Lifelong Learning aims to provide for easier comparison of transparent qualifications and qualification levels, thus enabling the greater mobility of labour market and development of the notion of lifelong learning, and ensuring the quality of education. The strategic objective of the European Qualifications Framework is to ensure that the qualifications meet social and economic needs of each individual country and the EU as a whole, that each qualification is backed by the quality and that each individual is, in a flexible manner, enabled both horizontal and vertical mobility through the qualifications scale.

The core European Qualifications Framework comprises eight reference levels which classify knowledge, skills and competences acquired as learning outcomes. These eight levels of the qualifications framework generically cover all levels and types of education and serve as a means of recognition, understanding and comparison of the qualifications within the EU member countries.

Being aware of the significance of this European document for its social and economic reforms, in particular, for the education sector reform, Bosnia and Herzegovina has been undertaking certain activities over the past five years with the objective of establishing the qualifications framework based on the European Qualifications Framework.

There are two strategic documents adopted by the Council of Ministers of BiH indicating necessity of adoption of the Qualifications Framework in BiH: Strategy for Development of Vocational Education and Training in BiH 2007-2013 (Official Gazette of BiH no. 65/07); Strategic Directions of Education Development in BiH 2008-2015 (Official Gazette of BiH no. 63/08).

In addition, the Council of Ministers of BiH in December 2008 adopted the Decision on Adoption of the Documents for Further Implementation of the Bologna Process in BiH (Official Gazette of BiH no. 13/08). These documents also include the "Higher Education Qualifications Framework in BiH", "National Action Plan for Recognition of Qualifications in BiH" (for higher education) and "Implementation of the Higher Education Qualifications Framework in BiH".

Higher Education Qualifications Framework in BiH was prepared on the basis of the Framework for Qualifications of the European Higher Education Area. This Framework provides generic descriptors of learning outcomes for three cycles of higher education and it is further elaborated within the current reform projects.

Once having the Higher Education Qualifications Framework, it was easier to initiate the development of qualifications frameworks for all levels of education. The Higher Education Qualifications Framework in BiH is integrated in the Baseline of the Qualifications Framework in BiH.

Glossary of Terms of Qualifications Framework

European Qualifications Framework (EQF) means an instrument for the classification of levels of qualifications designed to act as a means of recognition and understanding of different national qualifications frameworks.

National Qualifications Framework (NQF) means an instrument for the classification of qualifications in a certain country, which provides for transparency, access, progression, acquiring and quality of qualifications.

Qualifications framework in BiH means an instrument of is an instrument for the classification of qualifications earned in the Bosnia and Herzegovina, which provides the basis for transparency, access, progression, acquiring and quality of qualifications.

European Higher Education Qualifications Framework means a document adopted by the Conference of European Education Ministers in Bergen in 2005 which defines generic descriptors for each of the three higher education cycles applied in all countries signatories to the Bologna Process.

Qualification means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.

Learning outcomes means a statement of what a elementary and secondary school student/university student/person knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence

International Standard Classification of Education (ISCED) means an international standard classification of education.

Knowledge means the outcome of the assimilation of information through learning process. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework for lifelong learning, knowledge is described as theoretical and/or factual.

Skills means the ability to apply knowledge and use know-how to complete certain tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments) and social skills (communication and co-operation skills, emotional intelligence, etc).

Competence means the ability to use knowledge, skills and personal, social and methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy.

Lifelong learning denotes integration of formal, non-formal and informal learning, with the aim of creating possibilities for permanent improvement of the quality of life.

Formal education means learning directed by teachers or instructors in educational institutions as per curricula prescribed by responsible educational authorities.

Non-formal education means an organised process of learning and education directed at professional development, specialisation and enhancement of the knowledge, skills and abilities, in accordance with specialised programmes organised at educational intuitions (regular schools, education centre, companies, agencies, etc).

Informal learning means an unplanned learning and gaining of knowledge through everyday activities.

Inclusive education means the right to education of every person during their entire life, in particular, the right of children with developmental disabilities to be involved in regular instructions and the right of gifted children to a maximum development of their potential.

Objectives and Principles of the Baseline of the Qualifications Framework in BiH

The Qualifications Framework in BiH is a required instrument to ensure equal use and application of standards of: education, knowledge, qualifications, competences and certification of education providers. The Qualifications Framework stipulates standards of achievement which are expected from students and adults who earned a degree/certificate. Simultaneously, it guarantees equality and credibility both for employers and education participants.

Objectives of the Qualifications Framework in BiH are the following:

- understanding of different types of qualifications and their mutual relations;
- creation of a comprehensive and understandable overview of educational achievements for employers, education participants and parents;
- provision of guidance to individuals with regard to the education and career choices; facilitation of mobility and more transparent lifelong access to education;
- facilitation of recognition and award of domestic qualifications abroad and foreign qualifications in our country;
- facilitation of high-quality employability; creation of preconditions for establishment of the system of verification and recognition of competences acquired in non-formal and informal education;
- creation of a quality management system for the existing and new qualifications;
- improvement of co-operation of education sector with all social partners;
- promotion of education.

It should be added that the qualifications framework serves as a reference point for co-ordination of the development of curricula, learning methods and assessment, and of the methods of education process monitoring. Therefore, the transparency of qualifications is of key importance, not only within the country, but in regional and international context, in particular. All the elements above imply intensive preparations of our society for European integration in the area of education.

The main **principles** used in the development of the Baseline of the Qualifications Framework in BiH are the following:

- respect for the tradition and the existing state of education in BiH;
- observing the guidelines of the European Union, other countries' experiences in creation of their own qualifications levels and preparing the society for European integration;
- transparency of the existing and new qualifications;
- precise specification of levels and types of qualifications;
- horizontal mobility and vertical progression of competences between different sub-systems of education;
- building partnership with all stakeholders: responsible educational authorities and institutions, statistical agencies, employers, trade unions, education providers, academic community, civil society, etc;

Each of the objectives and principles above entails further development and elaboration through the very process of development of the Qualifications Framework in BiH.

Adoption of the Baseline of the Qualifications Framework in BiH is of particular importance for our country considering the lack of adequate links between qualifications and competences for any working position and lack of coherence in the existing qualifications systems in BiH. Therefore, Bosnia and Herzegovina should be predominantly open for further development and continuous improvement of the qualifications framework.

Baseline of the Qualifications Framework in BiH

Baseline of the Qualifications Framework in BiH is the first document in Bosnia and Herzegovina dealing with the qualifications framework for all levels of education, and it requires further development over the coming years.

This document is in compliance with the European Qualifications Framework for Lifelong Learning. It defines, co-ordinates, manages and places qualifications within eight reference levels (some being further divided in sub-levels). Each reference level captures defined combination of knowledge, skills and competence, i.e. achievement standards for each qualifications level, whereby it can be concluded that each qualifications level higher on the scale implies that a person has better knowledge, skills and competence as learning outcomes.

Framework levels define achievement in any field of education and training, regardless of the type of education, thereby enabling the comparison of qualifications on the basis of the same systematic values and providing the higher level of objectivity in evaluation. This makes vertical and horizontal mobility through the entire system of education and training easier, both in the country and abroad.

Learning outcomes are defined by descriptors describing expected knowledge, skills and competence for each qualifications level (and potential sub-levels) from the level of elementary education to doctorate.

The framework is designed in a manner to serve as a description of different qualifications in BiH, regardless of the type of education in educational institutions, training centres, work places, private life, etc. This means that the Baseline of the Qualifications Framework in BiH describes learning outcomes achieved in formal and non-formal education and informal learning. The Framework will help link results of different forms of learning through evaluation of learning outcomes.

Levels in the Baseline of the Qualifications Framework in BiH

Level	Type of education and training	Qualifications titles (position in the labour market)	Award type (Diploma / Certificate / Education Level)
1	Elementary education	Unskilled worker	Certificate on completed elementary education
2	Occupational training programmes	Low-skilled worker	Certificate on completed programme or education for lower level occupational qualifications, which contains the following information: - duration of education; - knowledge, skills and competence acquired; - field of work a person is trained for.
3	Vocational education and training	Skilled worker for a certain occupation	Diploma/Certificate of Final Examination (matriculation) with practical work, including a supplement which contains the following information: - level of qualifications; - knowledge, skills and competence acquired; - field of work a person is trained for.
4	Secondary technical education	Specialised skilled worker for technical and related occupation	Diploma/Certificate of Secondary Graduation with a supplement which contains the following information: - level of qualifications; - field of major study, specific knowledge, skills and competence acquired; - field of work a person is trained for.
	Secondary general education	Generally skilled worker	Secondary School Graduation Diploma with a supplement containing the following information: - level of qualifications; - major field of study with specific knowledge, skills and competence acquired; - other knowledge, skills and competence acquired by a person.
5	Postsecondary education, including master craftsman exams and similar exams	Highly skilled worker specialised for a certain occupation	Diploma/Certificate of completed post-secondary education or passed master craftsman exam and/or similar exam for a certain occupation, with a supplement containing the following information: - level of qualifications; - duration of education; - major field of study or a type of exam passed, indicating specific knowledge, skills and competence acquired; - other types of knowledge, skills and competence acquired; - field of work a person is trained for.

6	First cycle of higher education	Titles of qualifications and contents of diploma and diploma supplement for levels 6, 7 and 8 will be elaborated by adoption of the "Rulebook on Use of Academic Titles and Acquisition of Scientific and Professional Titles"[32]	- Diploma issued by the institution of higher education - Diploma supplement
7	Second cycle of higher education		- Master's level diploma - Diploma supplement
8	Third cycle of higher education		- Doctorate diploma - Diploma supplement

Levels of the baseline of the qualifications framework in Bosnia and Herzegovina (Tabular survey)

Reference to the ISCED and EQF levels		Baseline of the Qualifications Framework		Earlier system in BiH based on educational levels			
ISCED level	EQF	Qualification	Education completed	Level	Educational level	School completed	Qualification
1 i 2A	1	Unskilled worker	Elementary education	1	I.	Elementary school	Unskilled worker
2B	2	Low-skilled worker	Occupational training programmes	2	II.	Elementary school and occupational training	Semi-skilled worker
3C	3	Skilled worker	Secondary vocational education and training	3	III.	Three-year secondary school	Skilled worker (secondary education) level III
3A 3B	4	Generally or specialised skilled worker	Secondary general and technical education	4	IV.	Four-year secondary school	Secondary education – level IV
4A 4B	5	Highly skilled worker specialised for certain occupation	Post secondary education, including master craftsman exams and related exams	5	V.	Specialization based on secondary school competences	Highly skilled worker
5B	6	Bachelor or Baccalaureate	First cycle of higher education	6	VI.	Two/three year postsecondary education	Associate's degree

[32] Title of the bylaw is defined under Article 6 of the Framework Law on Higher Education in BiH (Official Gazette of BiH no. 59/07).

5A	7	Master	Second cycle of higher education	7	VII./1	Faculty – undergraduate studies	University degree
					VII./1	Specialisation	Master specialist degree
5 ——— 6	8	Doctorate	Third cycle of higher education	8	VII./2	Master degree	Master of Philosophy[33]
					VIII.	Doctorate	PhD

It should be noted that the relations between the existing system in BiH, based on educational levels, and qualifications defined by the European Qualifications Framework will be further elaborated and defined through amendments to the existing legislation, and where applicable, separate legal regulations and by-laws.

Generic descriptors of qualifications levels based on learning outcomes

Level	Knowledge (factual and theoretical)	Skills (cognitive, physical and social)	Competence (autonomy and responsibility)
1	This person: • has elementary general knowledge and demonstrates its understanding.	This person: • possesses elementary skills and is capable of simple concrete logical thinking (necessary for performance of basic tasks) in a familiar environment; has elementary skills in ITC technologies • is able to apply general elementary knowledge in practice; • is able to gather and organise given information and clearly present them in oral and written form	Professional competence: This person: • demonstrates capacity to perform basic tasks in a familiar environment under permanent and professional supervision; Personal competence[34]: This person: • displays readiness to apply knowledge and assume limited responsibility for performance of simple tasks in a familiar environment.
2	This person: • has <u>narrow</u> theoretical and practical knowledge related to a certain field and capacity to apply it in performance of tasks within the area of work or learning (including correct use of professional vocabulary).	This person: • demonstrates <u>narrow</u> range of practical skills for a certain field (e.g. the use of simple methods, tools, instruments and materials) in a familiar environment; • demonstrates <u>simple concrete logical thinking</u> necessary for application of relevant information in performance of a sequence of simple and/or less-complex routine tasks in a familiar environment.	Professional competence: This person: • has a capacity to find solutions and perform simple and/or less-complex tasks for familiar problems with direct professional supervision in a familiar environment; Personal competence: This person: • takes limited responsibility for performance of simple and/or less complex tasks in a familiar environment and for own learning

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[33] The level 8 qualification, Master of Philosophy cannot be used for acquisition of new qualifications, but only for recognition of the existing qualifications, or the qualifications which were acquired or will be acquired abroad.

[34] Including key competences for lifelong learning

| 3 | This person:
• possess practical and theoretical knowledge for certain field (facts, principles, processes and general concepts related to the field of work or learning)
• demonstrates capacity to analyse facts within the field of work or learning. | This person:
• demonstrates a wider range <u>of practical skills</u> in certain field in a changing environment;
• demonstrates <u>concrete creative and simple abstract thinking</u> and ability to perform complex actions, tasks and problem resolution and use basic methods, tools, information and materials in a changing environment;
• is able to collect, select and utilise relevant information from different sources. | Professional competence:
This person:
• demonstrates limited practical experience in work and learning;
• demonstrates capacity to perform tasks by directing and adjusting its own behaviour within the given guidelines in a changing environment.

Personal competence:
This person:
• assumes limited responsibility for performance of simple and/or less complex tasks in a changing environment and for his/her own learning;
• participates in work as a team member
• demonstrates positive attitude towards key competences of lifelong learning – such as learning of foreign languages
• demonstrates sense of initiative and entrepreneurship and civic competences |
| 4 | This person:
• demonstrates significant theoretical and practical knowledge in a certain field.
• demonstrates capacity to analyse facts and theoretical knowledge within the field of work or learning. | This person:
• demonstrates ability to apply general and specialised knowledge and skills in a changing environment.
• demonstrates ability <u>of simple abstract logical and creative thinking</u> and performance of complex actions and of the complex use of methods, instruments, tools and materials, necessary for selection and application of relevant information in performance of a group of complex, specific tasks in a changing environment:
• demonstrates ability to collect, select and utilise relevant information from various sources. | Professional competence:
This person:
• demonstrates practical experience in work or learning;
• demonstrates capacity to perform complex tasks and independently solve problems;
• has capacity to supervise others.

Personal competence:
This person:
• assumes partial responsibility for evaluation and enhancement of activities in a changing environment;
• demonstrates self-directed learning, and will and positive attitude towards key competences of lifelong learning, e.g. learning to learn, etc. |

| 5 | This person:
• demonstrates wide theoretical and factual knowledge, as well as specialised practical knowledge in a specific field of work or learning;
• has ability to analyse and synthesise facts and theoretical knowledge, and to evaluate them;
• demonstrates ability of practical application of theoretical knowledge and facts and their analysis, synthesis and evaluation. | This person:
• demonstrates a wide range of theoretical and practical skills related to a certain field.
• demonstrates ability of simple abstract creative thinking necessary for creation of solutions of abstract problems in partially unpredictable situations.
• demonstrates ability of the complex use of methods, instruments, tools and materials and performance of complex moves in a partially unpredictable environment, as well as of the development of simple methods, instruments, tools and materials. | Professional competence:
This person:
• demonstrates wide and practical experience in work or learning;
• demonstrates capacity to apply knowledge and skills to find strategic solutions for well-defined abstract and concrete problems;
• has capacity to assume full responsibility in management/ co-ordination functions related to staff and projects in partially unpredictable situations;
• assumes limited responsibility for evaluation of improvement of activities in partially unpredictable situations.

Personal competence:
This person:
• demonstrates autonomy in learning and positive attitude towards key competences in life-long learning, such as learn to learn, communication in foreign languages, digital competences, sense of initiative and entrepreneurship. |
| 6 | This person:
• demonstrates knowledge and understanding in a field of study that builds upon their secondary education and which is typically at a level, whilst supported by appropriate learning resources (texts, information and communication technologies), which includes some aspects that will be informed by knowledge of the forefront in a given field of study. | This person:
• is able to apply acquired knowledge and critical understanding of the principles relating to the given field of study/discipline in a manner to demonstrate professional approach to their work or vocation, and has competences typically demonstrated through devising and sustaining arguments and solving problems within a given field of study;
• is able to apply main methods of acquiring new knowledge and applicative research in a given discipline, and is able to decide on which approach to use in solving a given problem and is aware of the extent to which the selected approach is suitable for solving such a problem;
• is able to communicate in one or several foreign languages and by using communication technologies, information, ideas, problems and solutions to both specialist and non-specialist audiences for given area of study | Professional competence:
This person:
• demonstrates ability to gather and interpret relevant data (usually within the given field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues.

Personal competence:
This person:
• has developed learning skills to undertake further study, with a high degree of autonomy and academic skills and attributes necessary to undertake research work, comprehend and evaluate new information, concepts and evidence from a range of sources;
• possesses a foundation for future self-directed and lifelong learning;
• has acquired interpersonal skills, teamwork skills adequate for employment and further study. |

| 7 | This person:
• is able to demonstrate a systematic understanding and mastering of knowledge in his/her field of study/discipline, that is founded upon and extends and/or enhances the undergraduate-level studies (first cycle), and tht provides a basis or opportunity for originality in developing and/or applying ides, usually within a research context. | This person:
• demonstrates ability to apply knowledge and understanding, and problem solving abilities in new and unfamiliar environment within broader (or interdisciplinary) contexts related to their field of study;
• has ability to apply conceptual and abstract thinking with a high level of proficiency and creativity whereby enabling:
- critical evaluation of current research and academic work at the forefront of the discipline,
- evaluation of different methodologies, development of critical opinion and raising of alternative solutions. | Professional competence:
This person:
• has ability to integrate knowledge and handle complex problems, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge or judgements;
• is able to communicate the conclusions, and the knowledge and rationale underpinning these using appropriate language(s), to specialist and non-specialist audiences, clearly and unambiguously;

Personal competence:
This person:
• is able to take own knowledge to a higher level, deepen the understanding of their field of study/discipline and continuously develop their own new skills through individual learning and self-development;
• has the learning skills to allow them to continue to study in a manner that may be largely self-directed and autonomous;
• has acquired interpersonal and teamwork skills appropriate to a variety of learning and employment contexts and also demonstrates leadership and/or initiative and makes a contribution to change and development. |
| 8 | This person:
• has demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field; | This person:
• has demonstrated the ability to design research project and then, implement the research in accordance with the methodology of a given science;
• has made a scientific contribution through original research that extends the frontier of knowledge;
• will continue scientific research and development and be initiators and implementers of development of knowledge-based society, constantly contributing to development of new techniques, ideas, or approaches. | Professional competence:
This person:
• capable of critical analysis, evaluation and synthesis of new and complex ideas;

Personal competence:
This person:
• can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise; |

Upcoming Tasks

The document "Baseline of the Qualifications Framework in BiH" is titled so because it represents only a beginning of a long process of the development and establishment of the qualifications framework in our country. Even when the Qualification Framework in BiH, synthesising strategic objectives of education and of all social partners in education, i.e. society as a whole, is in place, we will still have to be aware that there is no such thing as the final qualifications framework, due to the fact that the qualifications framework necessarily changes with the changes in the production procedures, and in particular with introduction of new technologies.

Baseline of the Qualifications Framework in BiH represents our strategic commitment to the development of such a qualifications framework that would enable our country to pursue faster social and economic development and ensure its sustainability.

In order for this commitment to be realised, it is necessary to continue with further work on the Qualifications Framework in BiH, both on its development and prediction of legal and institutional requirements for its application in practice.

It is necessary to ensure that the qualifications are responsive to the needs of the present time and to the needs of the labour market and in compliance with the international standards, i.e. to develop quality assurance mechanisms, including also a systematic defining of the instruments of internal and external quality evaluation which should eliminate unacceptable disparities in the quality, currently present in our country.

This also raises the issue of accreditation of educational institutions offering qualifications. It is of particular importance to equally involve all social partners in education and other relevant stakeholders in all activities. The ultimate goal is the development of a system which will enable companies in Bosnia and Herzegovina to find skilled workers and facilitate mobility of our workers in the European labour market.

Future activities also include the development and establishment of a system of recognition of knowledge, skills and competence previously acquired through non-formal and informal education. In addition to planning of infrastructure, regulation of procedures, methodologies and certification manner of earlier learning, this new institute requires solution of other problems, one of the most important ones being the introduction of a credit system in secondary education on the basis of the European Credit Transfer System for Vocational Education and Training (ECVET), similarly to how the Bologna Process regulated this issues in higher education. In addition, it is necessary to initiate development of concrete learning descriptors for all occupations, on the basis of a generic framework, and reform of curricula on all levels of education with the objective of making them a basic tool for achievement of defined learning outcomes. This opens up the issue of modularisation of curricula in secondary and higher education, redesign of the existing and introduction of new qualifications, as well as the issue of certification and recognition of partial qualifications (this already exists in a form of verification of knowledge of foreign languages and information technologies).

The process of development of the Qualifications Framework in BiH necessarily implies the activities on adoption of international qualifications standards, primarily of ISCED.

The Qualifications Framework in BiH should include all forms of the development of human resources in our country. Therefore, it represents a long-term and serious task which should be approached in a defined manner, with a distinct skill of anticipation of time to come.

Baseline of the Qualifications Framework in BiH represents a strategic commitment of our country to the development and maintenance of high standards of the qualifications earned in BiH.

The text above specifies only the relevant key activities to be undertaken in the forthcoming period with the objective of the establishment and development of the Qualifications Framework in BiH. Considering the fact that the Qualifications Framework should establish an internationally recognised standard of qualifications in BiH, i.e. a new system, it is necessary to review our legal regulations in the field of education, in order to analyse their adequacy to meet the specified requirements and to consider institutional prerequisites for implementation of the qualifications framework.

Considering the fact that this is a long-term task, there is a need to promptly establish an inter-sectoral **commission which will develop and propose a work plan of all main activities for the development of the Qualifications Framework in BiH** (including methodology, standards, necessary resources, deadlines, operational teams, etc.).

The intersectoral Commission for the development of the Qualifications Framework in BiH comprises 19 members, 6 members from each of the constitutional peoples and one member representing the Others, with appropriate regional representation.

Commission members should be representatives of the sectors of education, statistics, labour and employment sectors, and of employers, academic community and other social partners.

The Commission should comprise representatives of the following sectors/institutions: 5 representatives of educational sector (Ministry of Civil Affairs – Education Sector; Co-ordination of Education Ministers of Federation of BiH: 2 representatives of cantons; Ministry of Education and Culture of RS; Education Department of the BD Government); 3 representatives of Rectors' Conference; 3 representatives of the education agencies in BiH (Agency for Pre-school, Elementary and Secondary Education, Agency for Deevelopment of HE and QA, Centre for Information and Recognition of Qualifications in Higher Education); 3 representatives of the statistical sector (Agency for Statistics of BiH, Federation Institute for Statistics, RS Institute for Statistics); 3 representatives of labour and employment sector (Ministry of Civil Affairs – Department of Labour and Employment, Federation Ministry of Work and Social Policy, Ministry of Labour and Veterans of RS); 1 representative of employers in BiH (Association of Employers of BiH) and 1 representative of trade unions (Confederation of Trade Unions of BiH)

The Ministry of Civil Affairs is tasked with implementation of procedures for the establishment of the Commission on the basis of the proposal of members nominated by responsible educational and other authorities, with the Ministry of Civil Affairs/Sector of Education appointing their representative in the Commission.

The Commission will make decisions by majority of votes of the total number of members, provided that the majority includes at least two thirds of votes of representatives of each constituent people.

The Commission will, by majority of votes of the total number of commission members, elect a chair-person of the commission.

The Commission, at the proposal of the Ministry of Civil Affairs (which was earlier approved by the Conference of Education Ministers in BiH), is appointed by the Council of Ministers of BiH for a one-year mandate.

9.2. Examples of 5 qualifications standards[35]

Example of qualification standard from Agriculture and Food Processing

Minimal elements of qualifications standard
1. BASIC CHARACTERISTICS

1.1 Title(s) of the qualification (Generic + Subject specific)

- *Food Technology Engineer*

1.2 Minimal volume

- *180 ECTS*

1.3 Level

- *QF-BiH: 6*

1.4 Entry routes

- Completed four years of high school

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[35]   Examples are made for 5 subject areas: Agriculture and food processing, engineering, ICT, economy and teacher education.

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

- Planning, organising, and monitoring the work within the food processing plants - production technologist
- Working in the laboratories for food analysis as a professional associate
- Working at the scientific and research institutes as a professional associate
- Planning and controlling of raw materials and final products as a quality control technologist

* Monitoring in the food industry factories pertains to small industrial plants

* NOTE: The learning outcomes should be further divided into categories of knowledge, skills and competencies.

2.2 Learning outcomes

Groups of learning outcomes; Minimal ECTS; List of learning outcomes

- Unit 1. Fundamental disciplines, minimum 50 ECTS
  - Solving of tasks and problems in the field of mathematics, computing operations, algebra, differential equations, probability and statistics (including the modelling and practical designing of experiments)
  - Interpreting and performing critical analysis of the basic physical phenomenon and laws in the field of mechanics, electricity and magnetism, nuclear physics and the basics of quantum mechanics
  - Solving tasks and problems in the general, inorganic, organic, physical and analytical chemistry
  - Providing critical explanations of the functioning of the cell and its organelles, being able to discuss the genetic laws and tendencies in genetic research
  - Presentation and explanation of biochemical processes with practical execution of basic biochemical laboratory tests
  - Effective use of standard IT equipment, commercially available general use software and a limited number of specific software packages
  - Speak, read, and write in foreign language at least at an intermediate level
  - Prepare and execute written and oral-visual presentations
- Unit 2. Food chemistry and analysis, including nutrition basics, minimum 15 ECTS
  - Sampling and executing of basic laboratory and instrumental methods for food analysis in accordance with predetermined protocols
  - Critically analyse chemisms and mechanisms, chemical, biochemical and physical transformations of ingredients of food during the production of food
  - Analyse with arguments the functional and nutritional properties of the most important groups of ingredients in food
  - Determine the physical properties of food and analyse the samples and processes which form a base for their different levels of expression
  - Classify and functionally analyse the most important groups of food additives
- Unit 3. Microbiology and food safety, minimum 10 ECTS
  - Sampling, isolating, and identifying the microbiological cultures significant for food processing technologies and microbiological spoilage of food through the application of knowledge in the field of general and industrial microbiology
  - Draft a programme for maintenance of adequate hygiene of a model and real plant within the food industry
  - Functionally differentiate between the elements of GMP and GHP
  - Design the elements of the HACCP plan for a model and real plant within the food industry
  - Determine the causes and consequences of the most frequent food poisoning
- Unit 4. Environment protection, minimum 5 ECTS
  - Categorise the air, water, and soil pollution originating from the food industry
  - Identify and characterise the most frequent pollutants originating from food industry
  - Elementary designing of the environmental protection system and a system for waste management through the implementation of various models of food industry plants
- Unit 5. Food engineering and technology, minimum 50 ECTS
  - Critically analyse technological quality parameters of the basic raw materials in the food processing industry

- – Explain and present the most important transformation processes in food production through the use of flow charts
- – Analyse the structure and the basic elements of the process equipment and control in the various food industry plants and practically demonstrate the measuring, recording, processing and interpreting of data obtained through measuring
- – Classify, functionally differentiate and perform process analysis of the preservation technology and techniques (including: cooling, freezing, thermal processing, dehydration, radiation and chemical protection)
- – Analyse the ways of packing of food products, elements of their labelling and the interaction of the packaging materials with the food
- – Model the storing conditions for various groups of food products
- – Calculate, solve problems, and perform simulations and modelling in the field of process engineering
- – Create conceptual designs of model plants in the food processing industry with necessary energetic and installation environments
- Unit 6. Economics and management, minimum 5 ECTS
  - – Calculate and interpret the microeconomic indicators in food processing industry
  - – Make the production cost calculations for the most important food products
  - – Model the management systems in the food processing industry through the use of organisation schematics and charts
  - – Perform critical analysis of the mechanisms and factors existing at the food products market
- Unit 7. Professional practise and student's project (final paper/project), minimum 10 ECTS
  - – Perform critical analysis of the production organisation and the technological flow in specific production conditions (practical work may be performed in other systems (laboratories, institutions, catering industry, etc.)
  - – Perform functional analysis and selection of the literature and sources, use scientific methods in the processing of obtained research results with written and oral-visual presentation of the project.

3. RELEVANCE

3.1 Labour market

- Food processing industry (production technologist, quality control technologist)
- Institutions for quality control of food and beverages (professional associate)
- Educational and health care institutions (practical education, research associate)
- Scientific-research institutes (professional associate)
- Managerial bodies (sanitary inspector, professional associate)
- Catering industry (quality control technologist, hygiene technologist)
- Non-governmental organisations (professional associate)

3.2 Further education

- Further education in the next study cycle in the field of food processing technology and similar field of study
- Potential for professional advancement (improvement)

3.3 Other needs

4. QUALITY ASSURANCE

4.1 Expert Group Members

- Dr.sc. Zemira Delalić, Univesity of Bihać
- Dr.sc. Suzana Jahić, Univesity of Bihać
- Dr.sc. Delić Duška, University of Banja Luka
- Mr.sc. Vučić Goran, University of Banja Luka
- Dr.sc. Elvis Ahmetović, Univesity of Tuzla
- Dr.sc. Milica Vilušić, Univesity of Tuzla
- Dr.sc. Milenko Blesić, Univesity of Sarajevo
- Dr.sc. Hamid Čustović, Univesity of Sarajevo
- Dr.sc. Đikić Mirha, Univerzitet Sarajevo
- Dr.sc. Salih Tandir, Univesity of Zenica

- Dr.sc. Hajrudin Skender, Univesity of Zenica
- Dr.sc. Hanadija Omanović, University Džemal Bijedić Mostar
- Dr.sc. Semira Sefo, University Džemal Bijedić Mostar
- Dr.sc. Višnja Vasilj, University of Mostar, Mostar Faculty of Agriculture and Food Technology University of Mostar
- Saima Sajković-Kaljanac, quality control technologist, Atlantic grupa/Argeta d.o.o.
- Behisa Selimović, quality control technologist, Atlantic grupa/Argeta d.o.o.
- Dino Bačvić, production manager, Atlantic grupa/Argeta d.o.o.
- Željka Ćosić, secretary of the Association, Association of farmers of RS
- Slavko Inić, president, Association for Rural development of Bosnia and Herzegovina
- Božana Vranješ, senior professional associate, Ministry of agriculture RS
- Brankica Tomas, senior professional associate, Ministry of agriculture RS
- Edin Ibrahimpašić, direktor i vlasnik, Pivovara Bihac (Bihac Brewery)
- Alija Šehović, head of the quality control sector, Menprom d.o.o. Tuzla

* The learning outcomes presented in this document are based on the recommendations of the International Union of Food Science and Technology (IUFoST) for the food processing study programme.

4.2 Proponent of the qualifications standard and the date

4.3 The competent institution(s) and the link to the Sector Council expert opinion

4.4 The date of entry into the web-portal

4.5 The deadline by which the QS should be reviewed

Example of qualification standard from Engineering

Minimal elements of qualifications standard

1. BASIC CHARACTERISTICS

1.1 Generic + Subject specific

- *Bachelor of Civil Engineering*

1.2 Minimal volume

- *180 ECTS*

1.3 Level

- *QF-BiH: 6*

1.4 Entry routes

- Completed four years of high school

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

- Observe, recognise, describe and solve professional construction problems while observing the moral principles;
- Design structures at the basic level;
- Sizing of a smaller building structures in the field of construction, hydro-construction, and building;
- Lead a minor construction project;
- Participate in the planning, designing, execution, supervision, and maintenance of major construction projects;
- Use the common computer tools for drafting of documents, presentations, making of calculations, and simulations;
- Recognise mutual relationships between designing, building and the user's requirements.
- Prepare and conduct and experiment, and analyse and interpret the results;
- Critically evaluate the arguments, presumptions and data during decision making process, and solve professional problems in a creative manner;
- Understand the influence of building on the society and the environment;
- Communicate and exchange information and ideas about the problems pertaining to the construction business with relevant experts working in and out of the construction business;

- Cooperate with the professional groups and adjust to the requirements of the work environment;
- Understand the influence of building on the society and the environment, and have a developed moral and ethical position while solving professional problems;
- Prepare and conduct an experiment, and analyse and interpret the results;
- Independently perfect and further develop the competencies acquired during studies, as well as the possibility of active participation at the specialist professional meetings.

* NOTE: The learning outcomes should be further divided into categories of knowledge, skills and competencies.

2.2 Learning outcomes

Groups of learning outcomes; Minimal ECTS; List of learning outcomes

- Mathematics and physics (min 30 ECTS)
  - Understand and apply the basic and advance notions of the analyses, algebra and numeric mathematics required for modelling and optimisation, but also for solving of practical engineering problems;
  - Evaluate the quality of obtained solutions, their potential for practical implementation and feasibility, as well as monitoring of their implementation;
  - Describe, understand and apply the basic notions of probability and statistics and the advanced methods required for solving and describing of problems existing in the profession;
  - Describe and analyse the basic laws of physics in the areas covered by the lectures, as well as apply the acquired knowledge in practice through solving of simple problems and tasks, with special accent on the contents which make the acquisition of knowledge in professional subject easier;
  - Evaluate and apply the basic knowledge in spatial geometry, drafting of projections with connection of 2D and 3D representation applicable in practice;
  - Describe the examples of non-methodological approaches of descriptive statistics and probability analyses; differentiate the methods for error evaluation, testing of hypothesis and similar in the field of construction practice.
- Foreign language (min 3 ECTS)
  - Able to communicate (read, speak, write) in a foreign language, general and at the level of the profession.
- ICT, min. 6 ECTS
  - Create independent program solutions for mathematical problems in some of the programming languages;
  - Use the basic knowledge and use of software drawing packages;
  - Use of computers in designing and performing of structural calculations.
- Construction theory I (min 30 ECTS)
  - Differentiate and analyse the basic theoretical laws of statics and a part of mechanics, and define the longitudinal forces of the statically determined structures;
  - Describe and analyse the theoretical laws in the field of kinematics and dynamics of a point and rigid body, and essential notions of the oscillation system theory with one degree of freedom;
  - Comment and analyse the stress theory, strength and stability of engineering structures. Calculate and size a simple statically determined and statically undetermined structure;
  - Solve various problems in the field of rigid deformable body mechanics;
  - Describe the geometric stability and the rules of the kinematic stability of linear structures;
  - Define, analyse, and calculate the statics of line and plate structures, as well as of walls and rocks.
- Construction structures I (min 12 ECTS)
  - Differentiate and describe the basic stages of historical development of the building industry;
  - Analyse and draft the parts of the main and detailed architectural design of a simple building.
- Construction materials (min 10 ECTS)
  - Distinguish basic construction materials and their properties;
  - Examine the properties of the construction materials;
  - Design and conduct an experiment analyse and interpret the results.
- Theoretical and applied hydromechanics (min 4 ECTS)
  - Comment on the stationary motion of liquid, hydraulics of open flows and underground waters;

- Make minor engineering calculations of the flow in pipelines, channels and water intake.
- Geology and geotechnics (min 6 ECTS)
    - Describe the properties of soil required for the calculation;
    - Make the calculation for the bearing power of the foundations, consolidation, stability of slopes, soil pressure to the support structures;
    - Describe and analyses of the structure of the Earth, in particular the lithosphere, differentiate the processes and occurrences on the surface of the lithosphere, comment on the occurrence of the earthquakes, volcanoes, and orogeny;
    - Description of the basic elements of the load calculation and sizing of the geotechnical structures (support wall, dike dam rocks, construction pit, excavation and fills);
    - Sizing of the shallow and deep foundations
- Construction theory II (min 5 ECTS)
    - Describe the dynamic properties of the structures;
    - Create a dynamic calculation of simple structures in accordance with the valid Rulebook on construction of the building structures in seismic areas;
    - Participate in the drafting of dynamic calculations for simple structures.
- Construction structures II (min 30 ECTS)
    - Detail construction of a classic reinforced concrete structure;
    - Sizing of the cross-sections exposed to bending, shearing and torsion, slender compressed members, biaxial structural slab, point support slab;
    - Determine the condition of usable cracks;
    - Describe the basic theoretical postulates in structures made of different materials (concrete, wood, metal and masonry);
    - Sizing of the cross-sections and the connections and joints of simple structures;
    - Design the systems, components or processes required for designing, taking into consideration the economy, environment, social, political, ethical, health and safety elements and sustainability.
- Communal and process water engineering (min 5 ECTS)
    - Examine and evaluate the functions of water supply and sewage systems and their elements
    - Select the best option during the planning, designing, construction and management process of water supply and sewage systems and their functional elements.
- Water engineering structures and plants (min 4 ECTS)
    - Evaluate and examine the basic functions of water engineering structures, basic accompanying processes and use the basic methods while designing and construction of water engineering structures.
- Hydrology and water management (min 4 ECTS)
    - Examine and analyse the components of the hydrology cycle
    - Apply the mathematical and statistical methods for solving of engineering and hydrology problems.
    - Create the elementary hydrology calculations in water engineering.
- Roads (min 3 ECTS)
    - Describe, analyse and argument the procedures of designing and building of railroads.
    - Classify the basic elements of the railroads, as well as the modes of planning, designing and maintenance.
    - Create a design for a road outside the populated area up to the level of the detail design with thorough understanding of the conditions for the selection of optimal elements (geometry, alignment).
- Geodesy (min 3 ECTS)
    - Differentiate and use plans and maps
    - Perform the basic geodetic activities such as measuring of angles and detail levelling.
- Organisation of the building (min 4 ECTS)
    - Differentiate the essential principles and methods of organisation, planning and management, as well as the execution of construction projects.
    - Comment on the legal regulations pertaining to the execution and contracting of the construction projects.

- – Draft and amend the building organisation design and plans in practice.
- Economy and law (min 3 ECTS)
  - – Describe and define: the market principles, laws of supply and demand, economic organisation of the company, entrepreneurship.
  - – Differentiate the expenses, analyse the business results in production and determine the benchmarks for measuring of the success of the business.
  - – Expanding the knowledge required for understanding of the influences of engineering solutions to the global, economic, social and the environment.
- Professional practice (min 3 ECTS)
  - – Describe, analyse and critically evaluate the possibility of solving a specific practical problem.
  - – Communicate and work within a multidisciplinary team
  - – Confirm professional and ethical responsibility
  - – Recognise the need for lifelong learning

3. RELEVANCE

3.1 Labour market

- Working position of the site engineer,
- Associate designer at an engineering bureau,
- Professional consultant within the statutory authorities (urban planning, inspection),
- Professor at the construction or architectural high school (against successful passing of the pedagogy courses)

3.2 Further education

- Further education at the second cycle for an adequate profile

3.3 Other needs

4. QUALITY ASSURANCE

4.1 Expert Group Members

- Univesity of Eastern Sarajevo: prof. dr Mitar Perušić
- Univesity of Eastern Sarajevo: prof. dr Goran Tadić
- University of Bihać: prof. dr Ifet Šišić
- University of Banja Luka: mr. Bojana Grujić
- University Džemal Bijedić Mostar: prof. dr Dragi Tiro
- University of Sarajevo: doc. dr Naida Ademović
- University of Tuzla: prof. dr. Sandira Eljšan
- University of Tuzla: prof. dr. Suad Halilčević
- University of Zenica: prof. dr Edin Berberović
- University Džemal Bijedić Mostar: prof. dr Vahida Žujo
- UNBI: prof. dr Atif Hodžić

* During the drafting of the qualification standards, a comparison was made with the universities in the region: Zagreb, Belgrade, Vienna as well as the University of Kentucky, Department Engineering, USA

* Criteria for the institution awarding the qualification:

The Institution has to meet all the conditions prescribed by the Law on Higher Education, as well as the norms and standards.

4.2 Proponent of the qualifications standard and the date

4.3 The competent institution(s) and the link to the Sector Council expert opinion

4.4 The date of entry into the web-portal

4.5 The deadline by which the QS should be reviewed

Example of qualification standard from ICT

Minimal elements of qualifications standard

1. BASIC CHARACTERISTICS

1.1 Title(s) of the qualification (Generic + Subject specific)

- Computer Science Engineer

1.2 Minimal volume

- *180 ECTS*

1.3 Level

- *QF-BiH: 6*

1.4 Entry routes

- Completed four years of high school or equivalent
- The entry routes are defined by the Framework Law on Higher Education in Bosnia and Herzegovina.

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

- Application of basic principles and methods of computer sciences in the wide field of application
- Application of mathematical and scientific deduction to various IT problems
- Designing, adequate implementing and documenting of solutions to complex problems in the field of IT
- Analysing and comparing of alternative solutions of the problems in the field of IT
- Applying of generally accepted principles to the synthesis and computer system analyses
- Application of advanced algorithmic and mathematical concepts in software designing and analyses
- Designing and implementing of software in accordance with the system requirements
- Participating in the team work on designing and implementation of the solution of the problem in the field of computer sciences
- Communicating clearly and precisely in both oral and written communication
- Critical and creative thinking, both independently and as part of a team
- Recognise social and ethical responsibilities of professional work
- Monitoring of development and application of new achievements in the field of computer sciences

* NOTE: The learning outcomes should be further divided into categories of knowledge, skills and competencies.

2.2 Learning outcomes

Groups of learning outcomes; Minimal ECTS; List of learning outcomes

- Mathematics; min. 16 ECTS
    - Describe and explain the basic notions in linear algebra, mathematical analysis, discrete mathematics, probability and statistics
    - Formulate and solve problems in the field of mathematics through argumentation of one's thoughts
    - Select and recommend an adequate model, structure and method for solving of problems and statistical deduction
- Theoretical basics of computer sciences; min. 10 ECTS
    - Describe and explain the basic notions pertaining to the structure of data and algorithms, calculation theory, formal methods and automata theory
    - Select, model and analyse the algorithm or formal method for solving of a specific problem
    - Solve problems through the application of standard algorithms for implementation and manipulation of data structures
- Programming paradigm and programming languages, min. 18 ECTS
    - Describe and explain the basic programming paradigms: structural programming, object-oriented programming

- – Select an adequate programming paradigm and a programming language for solving of problems
- – Independently create an application through the use of various programming languages
- Operative systems and system programming, min. 6 ECTS
  - – Describe and explain the architecture of the operative system
  - – Describe and explain the basic algorithms for: distribution of the memory and peripheral devices management processes, file system organisation, safety
  - – Select and implement an adequate operative system for various applications
- Computer architecture and organisation of computers, min. 10 ECTS
  - – Describe and explain the basic principles of the digital system building, their analysis and designing
  - – Describe and explain the basic elements of the computer architecture and organisation of computers at the level of the set
  - – At the logical level, design the combination and sequential sets
  - – Develop a simple program at the level of assembly /machine
- Computer networks and communication, min. 6 ECTS
  - – Describe the network standards, concepts, topologies and media, network hardware, network safety and different protocols
  - – Explain the organisation of the internet and describe the directing and forwarding of packages in IP networks
  - – Use critical judgment to evaluate the factors that affect the performances of the protocol and implement a simple reliable protocol, compare and differentiate between static and dynamic allocation techniques and identify the problem of multiple access
- Databases and data management, min. 8 ECTS
  - – Describe and explain the basic terms, technologies, and principles of organisation of relation databases, including the safety aspect
  - – Design a database at the conceptual, logical and physical level
  - – Use declarative languages to create and manipulate the database
- Software engineering and software development, min. 20 ECTS
  - – Describe and explain the basic notions in the field of software engineering and software development: software processes and methodologies, software life cycle, project management, software architecture and technologies, user interface
  - – Independently apply various techniques for gathering and analyses of requests, designing, implementation, testing and evolving of software solutions
  - – Perform a specific role within a team for development of a large software system
  - – Participate in the development of software systems for various applications (desktop, client-server, web, mobile, installation, real-time applications)
- Computer and information safety, min. 5 ECTS
  - – Describe and explain the basic elements of cryptography and key aspects of safety (confidentiality, integrity, availability), the concept of risk, threats, attacks, authentication, authorisation, access control
  - – Independently apply, use, monitor, and maintain various methods techniques and tools for safety of computer and information systems
- Foreign languages, min. 5 ECTS
  - – Functional use of basic terminology and syntax of a foreign language in written and oral communication
  - – Demonstrate the knowledge and skill in terms of use of a foreign language relevant for the field of IT in written and oral communication
- Final paper/project, min. 10 ECTS
  - – Independently solve (design, implement, document and present) a simple engineering problem in the field of computer sciences, through the synthesis of acquired knowledge, skills and competencies, with the use of adequate professional literature

* At least 114 ECTS must come from the mandatory Units of learning outcomes listed in the table.

At most 30 ECTS must come from the units not listed in the table.

The remaining number up to 180 ECTS must belong to the units pertaining to the field of computer sciences, electrical technology, and mathematics.

3. RELEVANCE

3.1 Labour market

- Software engineer (system analyst, software designer, programmer/developer, software quality controller, maintenance)
- Information system administrator
- Computer system administrator
- Technical support engineer for computer systems
- Teacher in the field of computer sciences and IT in primary school (with prior successful passing of the group of courses in the field of pedagogy and didactics)

3.2 Further education

- Further education in the second cycle of studies in the field of computing (computer sciences, software engineering, computer engineering, information technologies, information systems)
- Further education in the second cycle in a related field
- Progression to higher professional positions through the acquisition of informal and formal qualifications

3.3 Other needs

- *General need for informatisation of society.*

4. QUALITY ASSURANCE

4.1 Expert Group Members

- Academic community:
- Samra Mujačić, PhD, associate professor, University in Tuzla
- Suad Kasapović, PhD, associate professor, University in Tuzla
- Samim Konjicija, PhD, associate professor, University in Sarajevo
- Dražen Brđanin, PhD, assistant professor, University in Banja Luka
- Dragan Matić, PhD, assistant professor, University in Banja Luka
- Jasminka Hasić, PhD, assistant professor, International University of Sarajevo
- Zanin Vejzović, PhD, assistant professor, University "Džemal Bijedić" in Mostar
- Samir Lemeš, PhD, assistant professor, University in Zenica
- Nina Bijedić, PhD, assistant professor, University "Džemal Bijedić" in Mostar
- Mr Amir Hajdar, senior assistant, University in Sarajevo
- Employers in IT sector:
- Mr. Muhdin Mujačić, Procom d.o.o., Tuzla
- Ferid Ajanović, B.Sc.E.E, AtlantBH d.o.o., Sarajevo

4.2 Proponent of the qualifications standard and the date

4.3 The competent institution(s) and the link to the Sector Council expert opinion

4.4 The date of entry into the web-portal

4.5 The deadline by which the QS should be reviewed

Example of qualification standard from Economy

Minimal elements of qualifications standard

1. BASIC CHARACTERISTICS

1.1 Title(s) of the qualification (Generic + Subject specific)

- The Bachelor of Economics, Subject area: Management

1.2 Minimal volume

- *180 ECTS*

1.3 Level

- *QF-BiH: 6*

1.4 Entry routes

- Completed four years of high school (in accordance with the legal regulations)

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

- Be able to work independently and in a team, in both national and international context;
- Be able to identify, establish and resolve concrete organization-related problems;
- Be able to systematically collect, process and analyse data from various sources by applying modern information technologies;
- Be able to apply the obtained managerial knowledge and skills in practice i.e. in the profit, non-profit and public sectors;
- Be able to create and implement business policies in an organization;
- Have the capacities to generate new business ideas;
- Be able to apply quantitative methods and models in business decision-making.

* NOTE: The learning outcomes should be further divided into categories of knowledge, skills and competencies.

2.2 Learning outcomes

(Groups of learning outcomes; Minimal ECTS; List of learning outcomes)

- Management; min. 30 ECTS
  - Explain and critically analyse the theory and practice of organisation, management, and entrepreneurship
  - Analyse, plan, manage the human resources, manage the organisation, supervise and evaluate the achieved business goals
  - Analyse the interior and exterior environment, recognise one's own potential, formulate and implement an adequate strategy of the company
  - Identify and analyse the business problems within the organisation and offer and implement the solution
  - Identify the need for education and development of human resources and implement the adequate plans and programmes
  - Critically evaluate the ethical and social responsibility of the management and organisation in business operations
- Economic theory and policy; min. 15 ECTS
  - Describe and analyse the basic factors that affect the changes in supply and demand
  - Identify and analyse the specifics of various market structures
  - Apply the microeconomic techniques while analysing the problem at the level of the company, consumer, and industry
  - Describe and explain the basic macroeconomic aggregates
  - Recognise the current and foresee the potential influences of the economic policy to the macroeconomic tendencies in the national economy and the consequences thereof in terms of business operations

- Marketing, min. 6 ECTS
    - Recognise and solve simple problems in the field of marketing
    - Apply the key skills and techniques to market research.
    - Identify and critically analyse the elements of the marketing mix
    - Create a marketing plan
    - Identify and apply marketing strategies in special areas
- International economy, min. 5 ECTS
    - Analyse international economic tendencies in the global economy
    - Describe and explain the significance and the role of international economic and financial institutions
    - Identify and apply the trade policy instruments
- Quantitative economy, min. 15 ECTS
    - Gathering of primary and secondary data relevant for the business decision-making process, through the use of adequate statistical methods, process such data and interpret the results of the processing.
    - Selecting and using of adequate statistical methods and models for solving of practical problems and monitoring of business events.
    - Application of acquired mathematical knowledge in solving of real problems of the decision-making process.
    - Identifying and applying of adequate quantitative methods and models aiming to analyse and solve the business problems and reach business decisions in real situations.
    - Identifying and using of adequate software for support to the business decision-making.
- Finance and financial policy, min. 15 ECTS
    - Describe and explain the structure, functioning, and regulation of financial markets and institutions
    - Evaluate the influence of monetary policy instruments on the economy
    - Recognising the current and foreseeing the potential influence of fiscal policy instruments on the economy and business operations
    - Evaluate the risk and cost effectiveness of the investment
- Accounting, min. 8 ECTS
    - Record the business events in accounting
    - Identify and critically analyse the influence of business events on the financial situation and the successfulness of the organisation's business operations
    - Draft and analyse the basic financial reports
- Digital economy, min. 8 ECTS
    - Apply information technologies in business operations.
    - Select and use adequate software in business operations
- Other (business law and foreign languages), min. 10 ECTS
    - Explain different legal forms of organisation of legal entities and the basics of business law. Applying of basic professional terminology for economists in foreign language.
- Specialized practice, min. 2 ECTS
    - Relating and applying the acquired theoretical and practical knowledge
- Diploma paper, min. 6 ECTS
    - Explore and analyse the relevant literature falling within the scope of research
    - Apply adequate methodology during research and writing of the paper
    - Apply the acquired theoretical and practical knowledge to solving of specific problems
    - Present and interpret the results of the research

3. RELEVANCE

3.1 Labour market

- A broad spectrum of occupations in:
- the private sector (e.g. sales officer or sales manager, procurement manager, etc.)
- the public sector (e.g. civil servant, clerk, expert assistant, head of the department, head of the sector, head of the unit and other jobs)
- Non-profit sector (e.g. project manager, advisor, officer, executive director and other jobs)

3.2 Further education

- Further education in the second study cycle in economics and other fields of study

3.3 Other needs

4. QUALITY ASSURANCE

4.1 Expert Group Members

- doc.dr. Vaso Arsenović, University Slobomir P
- doc.dr. Saša Tomić, University Slobomir P
- doc.dr. Anita Duraković, University Džemal Bijedić
- doc.dr. Azra Bajramović, University Džemal Bijedić
- mr. Dajana Radović, University of East Sarajevo
- doc.dr. Mladen Rebić, University of East Sarajevo
- doc.dr. Nermin Oruć, International University of Sarajevo
- prof.dr. Zdenko Klepić, University of Mostar
- dr. Josipa Grbavac, University of Mostar
- doc.dr. Jasmin Halebić, University of Zenica
- doc.dr. Petković Saša, University of Banja Luka
- doc.dr. Jelena Poljašević, University of Banja Luka
- doc. dr. Sabina Đonlagić, University of Tuzla
- doc.dr.sc. Jasmina Okičić, University of Tuzla
- doc.dr. Jasmina Selimović, University of Sarajevo

4.2 Proponent of the qualifications standard and the date

4.3 The competent institution(s) and the link to the Sector Council expert opinion

4.4 The date of entry into the web-portal

4.5 The deadline by which the OS should be reviewed

Example of qualification standard from Teacher education

Minimal elements of qualifications standard

1. BASIC CHARACTERISTICS

1.1 Title(s) of the qualification (Generic + Subject specific)

- *MSEdu English language and literature*

1.2 Minimal volume

- *60 ECTS (total 300 ECTS with the 1st cycle)*

1.3 Level

- *QF-BiH: 7*

1.4 Entry routes

- Completed 1st cycle of studies in the field of English language and literature or related equivalent studies (240 ECTS)

2. LEARNING OUTCOMES

2.1 Overall learning outcomes

- Knowledge of background theories for learning and teaching English as a foreign language, teaching principles and underlying linguistic and cognitive theories, in particular the theory of second-language acquisition;

- Knowledge of literature, culture and civilization of the English-speaking countries;

- Ability to apply the most important methods and procedures in teaching children, youth and adults, with special focus on communication approach and innovative forms of learning and teaching;

- Ability to evaluate textbooks, make their own teaching materials, apply new media; familiar with research techniques in view of learning and teaching English language, literature and culture;

- Relevant knowledge of social sciences, psychology, pedagogy and didactics required to professionally and critically reflect on the process of learning and teaching of a foreign language and literature and act independently and creatively.

* NOTE: The learning outcomes should be further divided into categories of knowledge, skills and competencies.

2.2 Learning outcomes

Groups of learning outcomes; Minimal ECTS; List of learning outcomes

- Learning outcomes in linguistic and literature courses (10 ECTS)
  - Analyse complex linguistic notions, from basic linguistic disciplines to specific, like discourse analyses;
  - Interpret and linguistically analyse certain complex aspects of language use;
  - Write more demanding text independently, from longer essays to literary analyses;
  - Analyse and perform critical analyses of different works of literature;
  - Analyse different periods in the history of English language.

- Learning outcomes in the educational and pedagogy and methodology group (Acquisition of the second and foreign language, glotodidactics, English language and literature teaching methodology, school practice, general pedagogy, psychology in education) (30 ECTS)
  - Independently analyse the areas of English language and literature teaching;
  - Being familiar with and able to critically evaluate the basics of didactic and methodological learning and teaching theory;
  - Design, prepare and organise the classes for students of different age and physical and psychological background;
  - Implementation of various methods and teaching processes;
  - Solving of complex teaching problems in new and unknown environments within a wider (or interdisciplinary) context in relation with the field of English language and literature teaching;
  - Drafting of one's own teaching materials adjusted to different groups formed based on the age and capabilities of the students;
  - Being familiar with and able to critically evaluate the basic principles of English language acquisition;
  - Critically evaluate and select adequate ideas for English language, literature, and culture teaching;

- Generic learning outcomes (upbringing and education philosophy, Information and communication technology, IT used in education, Scientific methodology) (10 ECTS)
  - Apply the ideas for research in the area of English language and literature teaching;
  - Independent use of various methodologies for examination and research of
  - English language and literature teaching, in particular by following the tendencies pertaining to the use of IT in the classroom;
  - Independent use of various methodologies research in the field of English language and literature teaching;
  - Prepare, conduct, process the data and present the research on a selected aspect of English language and literature teaching.

- Solve complex research problems;
- Skilfully investigate problems in the English language and literature teaching process, both independently and as part of a team;
- Present one's conclusions, knowledge and thoughts on which they are based, with the use of adequate language, to a non-specialised and specialised audience, in a clear and concise manner;
- Skilful use of computers, i.e. data processing software, word processing tools, tools for making of presentations for the purpose of data processing and presenting of results;
- Learn about innovations in teaching, both independently or as part of a team
- Continue the studies in the manner which would primarily be self-guided and autonomous;
- Skilful use of computers for data processing purposes;
- Respecting and developing of professional ethics;
- Engage in team work adjusted to different learning and employment contexts, and guiding and/or initiating and giving one's contribution to the change and development of English language and literature teaching.

• Final (master) paper (10 ECTS)

- Identify a research problem in the English language and literature teaching process;
- Analyse the available relevant literature;
- Conduct empirical investigations;
- Write a paper in accordance with the standards for academic writing;
- Present and defend the paper in public.

NOTE: All ECTS credits have been associated with the learning outcome units based on the experiential similarities with the universities in Bosnia and Herzegovina, not based on some valid and binding documents that regulate the volume of ECTS credits according to the learning outcome units!

3. RELEVANCE

3.1 Labour market

• Upon the completion of the second cycle, the students shall be ready to conduct a teaching process at different levels of education: (preschool, primary school, high school and higher education). Potential professions: English language teacher in preschool and primary schools; English language teacher in high school; English language teacher in private schools; assistants at the institutions of higher education; translators at the State-owned and private institutions, non-governmental organisations, domestic and foreign agencies, etc.

3.2 Further education

• Further education on the third cycle of interdisciplinary studies in the field of anglistics and linguistic methodology.

3.3 Other needs

• Raising the level of knowledge of English language and literature in the entire society (in the light of integration and globalisation processes).

4. QUALITY ASSURANCE

4.1 Expert Group Members

• Edina Špago Ćumurija – University Džemal Bijedić Mostar
• Samra Međedović – University Džemal Bijedić Mostar
• Marijana Sivrić – University of Mostar
• Ivan Madžar – University of Mostar
• Vanes Mešić – University of Sarajevo
• Draženko Jorgić – University of Banja Luka
• Svetlana Mitić - University of Banja Luka
• Alma Dizdarević – University of Tuzla
• Selma Porobić – University of Tuzla

- Nevzet Veladžić – University of Bihać
- Haris Muhić – World University Service Bosnia and Herzegovina

4.2 Proponent of the qualifications standard and the date

4.3 The competent institution(s) and the link to the Sector Council expert opinion

4.4 The date of entry into the web-portal

4.5 The deadline by which the QS should be reviewed

9.3. Example of 2 occupational standards[36]

Example of occupational standard from Agriculture and Food Processing

Minimal elements of occupational standard

1. BASIC CHARACTERISTICS

1.1 Name(s) of the occupation

- Food Technology Engineer

Statistics Agency of Bosnia and Herzegovina, Law on Statistics of BIH ("Official Gazette of BIH" Nos. 26/04 and 42/04), Decision on the introduction and implementation of the classification of professions ("Official Gazette of BIH" No. 100/10)

1.2 Code of the occupation

- 2145 (Statistics Agency of Bosnia and Herzegovina, Decision on the introduction and implementation of the classification of professions ("Official Gazette of BIH" No. 100/10)

1.3 Link to the international classification

International standard classification in accordance with the recommendation of the ILO - International Labour Organisation, (Decision on the introduction and implementation of the classification of professions ("Official Gazette of BIH" No. 100/10)

International standard classification in accordance with the recommendation of the ILO - International Labour Organisation) (Decision on the Classification of professions "Official Gazette of the FBIH" No. 60, 2014)

1.4 Level of required qualifications

- QF-BiH 6

2. KEY TASKS AND REQUIRED KNOWLEDGE, SKILLS AND COMPETENCE

2.1 Description of the occupation

- Planning, organising, and monitoring* of the work within the food processing plants
- Planning and organising of work in the laboratories for food analyses
- Working at the scientific and research institutes
- Planning and controlling of raw materials and final products

*Monitoring in the food industry factories pertains to small industrial plants

2.2 Key tasks and required knowledge, skills and competence

(Task groups (key task; key task; etc.)

- Planning and preparation of production (Short-term and long-term planning, optimisation of costs)
  – Analyses of the documents and databases, drafting of a production plan
- Production process (Guiding of the production process, classification according to the type of products)
  – Drafting of working orders, planning of manning, monitoring of the parameters within the production process and responding to emergency situations during the production process
  – Application of the stoichiometry calculations of the quantitative composition of the standardised

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[36] Examples of occupational standards are made for 2 subject areas: Agriculture and food processing and ICT.

- Quality Control (Control of raw materials, initial materials and packaging materials, process control, control of the packaging process and final products, quality assurance, control of the storing conditions for the final products)
  - Taking samples in accordance with the working orders ,determining of physical (temperature, pH, density, etc.), chemical (relative acidity, content of ingredients) and microbiological properties (total number of microorganisms, pathogen microorganisms and somatic cells),responding to discrepancies in the raw materials, initial materials and packaging materials
  - Controlling of the production process (use of raw materials, packaging material, initial materials, hygiene of the equipment, working areas and the employees, supervising of the critical control points, etc.)
  - Controlling of the packaging, declarations, labelling, etc.Controlling of the organoleptic, microbiological, physical and chemical properties of the final products
  - Implementation of the legal regulations and quality management systems ISO, HACCP, HALAL, KOSHER, etc.
  - Controlling of the hygiene and sanitary conditions in accordance with the legal regulations and the standards of production.
- Environmental protection and healthcare (Coordinate the activities pertaining to healthcare and environmental protection, Manage the environmental protection)
  - Implementation of the legal regulations pertaining to occupational health and safety (fire protection, noise protection, hygiene minimum, sanitary examinations, systematic medical examinations), as well as the OHSAS standards
  - Implementation of the legal regulations pertaining to environmental protection (waste water management, solid and liquid waste management, air emissions, etc.), as well as the ISO 14001 standard
- State administration (ministries, agencies) and local government (cities and municipalities) (Drafting of laws and by-laws, performing the analyses of the economic position, proposing of measures, gathering of data, drafting of information and analyses of business operations, registration of the entities in the food processing industry)
  - Knowledge about and implementation of legal regulations in the field of food processing industry

3. QUALITY ASSURANCE

3.1 Justification of the introduction of the occupational standard

3.2 Expert Group Members

- Dr.sc. Zemira Delalić, Univesity of Bihać
- Dr.sc. Suzana Jahić, Univesity of Bihać
- Dr.sc. Delić Duška, University of Banja Luka
- Mr.sc. Vučić Goran, University of Banja Luka
- Dr.sc. Elvis Ahmetović, Univesity of Tuzla
- Dr.sc. Milica Vilušić, Univesity of Tuzla
- Dr.sc. Milenko Blesić, Univesity of Sarajevo
- Dr.sc. Hamid Čustović, Univesity of Sarajevo
- Dr.sc. Đikić Mirha, Univerzitet Sarajevo
- Dr.sc. Salih Tandir, Univesity of Zenica
- Dr.sc. Hajrudin Skender, Univesity of Zenica
- Dr.sc. Hanadija Omanović, University Džemal Bijedić Mostar
- Dr.sc. Semira Sefo, University Džemal Bijedić Mostar
- Dr.sc. Višnja Vasilj, University of Mostar, Mostar Faculty of Agriculture and Food Technology University of Mostar
- Saima Sajković-Kaljanac, quality control technologist, Atlantic grupa/Argeta d.o.o.
- Behisa Selimović, quality control technologist, Atlantic grupa/Argeta d.o.o.
- Dino Bačvić, production manager, Atlantic grupa/Argeta d.o.o.

- Željka Ćosić, secretary of the Association, Association of farmers of RS
- Slavko Inić, president, Association for Rural development of Bosnia and Herzegovina
- Božana Vranješ, senior professional associate, Ministry of agriculture RS
- Brankica Tomas, senior professional associate, Ministry of agriculture RS
- Edin Ibrahimpašić, direktor i vlasnik, Pivovara Bihac (Bihac Brewery)
- Alija Šehović, head of the quality control sector, Menprom d.o.o. Tuzla

3.3 Proponent of the occupational standards and the date

3.4 The competent institution(s) and the link to the Sector Council expert opinion

3.5 The date of entry into the web-portal

3.6 The deadline by which the QS should be reviewed

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4. ADDITIONAL INFORMATION

4.1 Specific regulations directly related to the occupation

- Food Act ("Official Gazette of the Republic of Srpska" No. 49/09);
- Law on wine and brandy ("Official Gazette of the Republic of Srpska" No. 71/09);
- Rulebook on the contents and implementation of the general and specific conditions for food hygiene (Official Gazette of the Republic of Srpska" Nos. 111/09 , 10/11, and 89/13);
- Rulebook on the procedure for determining the fulfilment of the conditions for the work of testing laboratories ("Official Gazette of the Republic of Srpska" Nos. 111/09 , 10/11, and 89/13);
- Food Act ("Official Gazette of Bosnia and Herzegovina" No. 50/04);
- The Rulebook on food hygiene ("Official Gazette of Bosnia and Herzegovina" No. 04/13);
- The Rulebook on the hygiene of the food of animal origin ("Official Gazette of BiH" Nos. 03/12 and 28/14);
- The Rulebook on the disclosure of information about the food to the consumers ("Official Gazette of BiH" No. 68/13).

4.2 Occupational risks and working conditions

- Working in the food processing industry implies spending time in the production plants with artificial lights, with increased noise level, different temperature regimes, and odours.

4.3 Specific requirements

- *Hygiene minimum in accordance with the Law on Protection of Citizens from infectious diseases ("Official Gazette of the Republic of Srpska" No. 14/10) and the Rulebook on the contents and the manner of organising of special education ("Official Gazette of the Republic of Srpska" No. 128/10);*
- *Successfully passed examination for the work in the Administration of the Republic of Srpska, in accordance with the Law on State Officials.*

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Example of occupational standard from ICT

Minimal elements of occupational standard

1. BASIC CHARACTERISTICS

1.1 Name(s) of the occupation

- Software Engineer

1.2 Code of the occupation

- *251X*

1.3 Link to the international classification

- *251*

1.4 Level of required qualifications

- *QF-BiH 6*

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2. KEY TASKS AND REQUIRED KNOWLEDGE, SKILLS AND COMPETENCE

2.1 Description of the occupation

- Software Engineer is an expert in the field of computer sciences who is capable of performing the analyses, designing, programming, making of prototypes, testing, and maintaining the software solutions.

2.2 Key tasks and required knowledge, skills and competence

(Task groups (key task; key task; etc.) – KSC)

- System analyses (Gathering of user's requests, Modelling of business processes, Drafting of specifications of system requirements)
  - Applying of basic principles and methods of computer sciences
  - Applying of mathematical and scientific deduction
  - Analysing and comparing of alternative solutions of the problems
  - Applying of generally accepted principles to the system analyses
  - Applying of advance logarithms and mathematical concepts in the software analyses
  - Participating in the team work
  - Communicating clearly and precisely in both oral and written communication
  - Critical and creative thinking, both independently and as part of a team
  - Recognise social and ethical responsibilities of professional work
  - Monitoring of development and applying of new achievements
- Software design (System architecture design, Object-oriented system design, Designing of user interface, Designing of database)
  - Designing of solutions to complex problems
  - Designing of software solutions in accordance with the system requirements specification
  - Applying of advance algorithm and mathematical concepts in software designing
  - Participating in the team work
  - Communicating clearly and precisely in both oral and written communication
  - Critical and creative thinking, both independently and as part of a team
  - Recognise social and ethical responsibilities of professional work
  - Monitoring of development and applying of new achievements
- Software programming (Implementation of system components, Programming of web applications, Programming of mobile applications)
  - Applying of basic principles and methods of computer sciences
  - Adequate implementation and documenting of solutions to complex problems
  - Implementation of software solutions
  - Implementation of algorithmic concepts
  - Participating in the team work
  - Communicating clearly and precisely in both oral and written communication
  - Critical and creative thinking, both independently and as part of a team
  - Recognise social and ethical responsibilities of professional work
  - Monitoring of development and applying of new achievements
- Development of prototypes (Drafting of prototype specifications, Design of prototypes, Implementation of prototypes, Presentation of solutions)
  - Applying of basic principles and methods of computer sciences
  - Analysing and comparing of alternative solutions of the problems
  - Applying of generally accepted principles to the system analyses
  - Designing and implementing of prototypes in accordance with the specification
  - Participating in the team work

- – Communicating clearly and precisely in both oral and written communication
- – Critical and creative thinking, both independently and as part of a team
- – Recognise social and ethical responsibilities of professional work
- – Monitoring of development and applying of new achievements
- Software testing (Drafting and executing of test plans and scripts)
  - – Applying of basic principles and methods of computer sciences
  - – Participating in the team work
  - – Communicating clearly and precisely in both oral and written communication
  - – Critical and creative thinking, both independently and as part of a team
  - – Recognise social and ethical responsibilities of professional work
  - – Monitoring of development and applying of new achievements
- Software maintenance (Execution of regular activities pertaining to software maintenance)
  - – Adequate implementation and documenting of solutions
  - – Participating in the team work
  - – Communicating clearly and precisely in both oral and written communication
  - – Recognise social and ethical responsibilities of professional work
  - – Monitoring of development and applying of new achievements

3. QUALITY ASSURANCE

3.1 Justification of the introduction of the occupational standard

- The existence of the demand on the labour market in Bosnia and Herzegovina, in the region and worldwide.
- The existence of a large number of study programmes which significantly differ from each other and which are used for educating of these professions.

3.2 Expert Group Members

- Academic community:
- Samra Mujačić, PhD, associate professor, University in Tuzla
- Suad Kasapović, PhD, associate professor, University in Tuzla
- Samim Konjicija, PhD, associate professor, University in Sarajevo
- Dražen Brđanin, PhD, assistant professor, University in Banja Luka
- Dragan Matić, PhD, assistant professor, University in Banja Luka
- Jasminka Hasić, PhD, assistant professor, International University of Sarajevo
- Zanin Vejzović, PhD, assistant professor, University "Džemal Bijedić" in Mostar
- Samir Lemeš, PhD, assistant professor, University in Zenica
- Nina Bijedić, PhD, assistant professor, University "Džemal Bijedić" in Mostar
- Mr. Amir Hajdar, senior assistant, University in Sarajevo
- Employers in IT sector:
- Mr. Muhdin Mujačić, Procom d.o.o., Tuzla
- Ferid Ajanović, B.Sc.E.E, AtlantBH d.o.o., Sarajevo

3.3 Proponent of the occupational standards and the date

3.4 The competent institution(s) and the link to the Sector Council expert opinion

3.5 The date of entry into the web-portal

3.6 The deadline by which the OS should be reviewed

4. ADDITIONAL INFORMATION
4.1 Specific regulations directly related to the occupation
4.2 Occupational risks and working conditions
• Health risks resulting from prolonged sitting, frequent use of fine motor skills and eye fatigue.
4.3 Specific requirements
• None

9.4. Training module

9.4.1. Introduction

This training module is planned as a series of ten sessions delivered over five days designed to provide intensive training for BiH higher education staff (predominantly academic) on the development and implementation of Qualifications Standards (QS) and Occupational Standards (OS). It is a capacity building module for the preparation of future trainers (BiH staff) who, following the instruction will be equipped to provide high quality guidance and instruction in BiH Higher Education Institutions (HEIs). Trained staff will then be able to pass on their skills and abilities to train other staff and thus lay the basis of a BiH-wide capacity building initiative that would firmly embed effective practical and useful QS and OS as well as facilitate the development of new external reference point standards, the implementation of the BiH baseline qualifications framework (QF-BiH) and its associated action plan.

This work originates from the earlier work undertaken in several past joint European Commission/Council of Europe BIH projects including the *'Strengthening Higher Education in BiH (SHE)'* projects 1 (2003-2005), II (2006-2008), III (2009-2011), and is part of the current *'Strategic Development of Higher Education and Qualification Standards in BiH'* 2013-2015. The development of new experts and trainers, assuring quality of implementation of the baseline QF-BiH at all institutional and system levels, is of the utmost importance. This directly links to the future implementation of the BiH Action plan for QF-BiH and Higher Education (HE) reform in general. Both QS and OS have a vital role in making the QF-BiH a live practical and useful tool and ensuring the relevance and quality of education and training. Furthermore, the training module is intrinsically linked to the draft '*Manual for the development and use of qualifications and occupational standards in Bosnia and Herzegovina'*. This manual is being refined alongside the training module and both will form a valuable set of tools for to support the BiH trainers in their future activities.

The training will take place in Jahorina at Hotel Board in the week of 20-24 April: two sessions per day delivered over five working days. It will be delivered mainly in English.

9.4.2. Access profile

The selection of candidates for training will be based on strict criteria, which would normally include:

- Relevant experience of previous active and relevant project participation. The training is designed as an advanced course for those with prior appropriate knowledge and experience. Trainees should be well known within the sector and should have appropriate cross-sectoral (transferable/transversal) knowledge and skills;
- Firm commitments from their respective superiors that their newly trained staff will be expected (and supported/resourced) to undertake appropriate staff development activities and therefore to take a major role in curriculum development and institutional change;
- Training will be mainly delivered in English so all staff for training should have good English language skills.

Staff to be trained should have prior exemption from teaching and administrative duties at their home institution(s). The criteria for the selection of staff to be trained include the following:

- An application form signed by the appropriate authority at the home institution that indicates exemption from all duties at the home institution for the full training week;
- Some priority will be given to staff that have participated in the current EU/CoE project;
- Submission of a brief CV that includes their current institutional role and a list indicating relevant experience, knowledge and skills associated with the proposed training.

The maximum number of staff for training should be 20. All participants will be provided in advance with an extensive list of materials, with which they should familiarise themselves prior to the training (see the list of 'essential resource material' below).

9.4.3. Aims[37]

This module aims to:

1. Place the development and implementation of Qualifications Standards (QS) and Occupational Standards (OS) in the context of the European Higher Education Area (EHEA) and the European Qualifications Framework for Lifelong Learning (EQF); specifically the aspects associated with quality assurance, standards, curriculum development and the effective implementation of qualifications frameworks;
2. Train participants as trainers in their own right for the ongoing, effective development, use and implementation of QS and OS in BiH;
3. Provide BiH participants with the appropriate tools, materials and techniques to support them in the future creation and dissemination of QS and OS, linked to BiH higher education reform, and the capacity building of other BiH staff;
4. Create an autonomous self-sustaining network of QS and OS BiH experts able to train their colleagues;
5. Refine the training module so it can effectively support the '*Manual for the development and use of qualifications and occupational standards in Bosnia and Herzegovina*'.

9.4.4. Learning outcomes[38]

On completion of the training module (all units + assessment) successful participants will be able to:

1. Train colleagues as trainers in the use, development and successful application of BiH Qualifications Standards and Occupational Standards (QS and OS);
2. Explain, justify and critically analyse the role of QS and OS within the context of the QF-BiH, the European Higher Education Framework (EHEA) and the European Qualifications Framework for Lifelong learning (EQF);
3. Evaluate the function of QS and OS in any future referencing/self-certification of the BiH Baselines Qualifications Framework (QF-BiH) to the EQF and/or the Framework of Qualifications of the European Higher Education Area (QF-EHEA);
4. Promote QS and OS (including the BiH templates) and effectively communicate persuasive arguments to colleagues of the advantages and importance of their use in the context of BiH quality assurance, standards and recognition;
5. Apply QS and OS in the creation of new curricula (and the review and modernisation of old curricula) at QF-BiH levels 5, 6 and 7, EHEA first and second cycles and EQF levels 5, 6 and 7;
6. Justify, analyse and present the new processes of curriculum development using external reference points (including QS and OS), and create and recognise appropriate learning outcomes, delivery and assessment at the level of the qualifications (including their components units/modules);

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[37] NB. These aims are the intentions and aspirations of those responsible for delivering the training.
[38] NB. These learning outcomes are the knowledge, skills and competences that the successful participants will (proven by appropriate assessment) acquire.

7. Distinguish between learning outcomes, aims and competences, and identify and write suitable outcomes for transferable skills/employability skills in terms of appropriate ECTS credit weightings and allocations[39];
8. Independently act as an effective autonomous trainer (capacity building) and support/resource person able to disseminate and explain materials (including case studies), and practically support BiH staff in the development and application of QS and OS, linked to higher education institutional reform.

9.4.5. Indicative content and sessions

This is an indicative listing of content. The five-day training agenda (see separate document) provides full details of the delivery and sequence of topics. The actual training sessions may vary in length and there may be minor changes in the order and content to accommodate the requirements of the participants (level of background knowledge, etc). The sessions will:

- cover the context of European higher education reform and recent HE/VET reforms within BiH;
- explore all aspects of Qualifications Standards and Occupational standards including their nature, role and development;
- demonstrate good practice associated with curriculum development related to external reference points (including QS and OS), level descriptors, student-centred learning, and the employability agenda;
- investigate and show the fundamental role of learning outcomes in educational reform, curriculum development, standards and assessment;
- examine all the quality assurance dimensions associated with QS, OS and the reform agenda;
- explore the implications of new 2015 '*ECTS Users' Guide*';
- relate QS, OS and overall HE reforms to the modernisation agenda challenges confronting BiH higher education institutions.

9.4.6. Teaching and learning delivery methods

The module is to be delivered in a series of intensive highly interactive sessions run over five days. Two experts will deliver the sessions. Where appropriate practical exercises will be used to explore the materials provided and apply them to real world situations likely to be faced by local disseminators.

The formal imparting of information will be, where possible, kept to a minimum as the required pre-reading should deliver much of the background factual content. In addition, essential materials for the following day's activities will be identified at the end of each daily session.

A series of tasks for individuals will augment the training, while small group activities will allow participants to report back solutions, issues and challenges. The various in-module sets of 'tasks' will be undertaken by all participants and are designed to embed the required skills, understanding and knowledge base.

9.4.7. Assessment rationale

In addition to the set of five in-module tasks there are two main assessment points. The first comes almost midway during the training and is of a formative nature. The main assessment takes place at the end of the training and is summative in nature.

The assessment is designed to allow participants to demonstrate that they can successfully and convincingly answer key questions and demonstrate appropriate skills concerning QS and OS in the context of the new European reform structures and devices.

In addition to the more formal assessment the module facilitators will observe the participants during the training sessions in terms of their: active contribution, input to the set tasks, and positive team interactions.

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[39]   Consistent with the updated material and emphasised in the new 2015 '*ECTS Users' Guide*'.

9.4.8. Essential resource materials

Those undertaking the module will be expected to read in advance selected materials from the following. This list will be further developed and some particular reading(s) will be identified for use during the following day's training.

- The draft '*Manual for the development and use of qualifications and occupational standards in Bosnia and Herzegovina*';
- The Bologna Follow-up group (BFUG) endorsed new (2015) ECTS Users' Guide (electronic version)[40];
- The BFUG endorsed new (2015) '*Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*'[41];
- The 2011 BiH '*Curriculum Development Good Practice Guide*';
- The BiH Baseline Qualifications Framework;
- Examples of QS and OS developed previously on the current project;
- The '*Action plan for the development and implementation of the Qualifications Framework in Bosnia Herzegovina for the period 2014-2020*' as adopted by the Council of Ministers on 11th February 2015;
- Previous project outputs including the EU IPA publication - '*Roadmap for the development of occupational Standards for all occupations*', the EU IPA publication - '*Handbook: Development of Occupational Standards*', the European Training Foundation (ETF) publication - '*BiH Impact assessment of Vocational and Training Reform*' and the current TEMPUS '*BHQFHE*' project?[42]

9.4.9. Workshop assessment (including possible answer points):

Assessment 1:

Short answer questions on Qualification Standards (QS), Occupational Standards (OS) and the QF BiH and European reform context

INSTRUCTIONS:
- *Answer all questions*
- *Write on the paper provided and print your name on it*
- *You have 60 minutes to complete the assessment*
- *Please do not confer*
- *Spend approximately 5 minutes on each question - just make a list of points for each answer*
- *All questions carry equal weighting*
- *Please write your answers answer in English*

QUESTIONS:
1. What role should QS play in future BiH Higher Education?
   - Create excellent study programmes – enhance standards
   - Aids different stakeholders in different ways
   - Key role associated with quality assurance/common standards
   - Crucial for curriculum development/design/validation
   - Important for recognition
   - Improve quality and relevance of studies
   - Produce more uniform standards across BiH
   - Supports BiH Baseline QF – essential to it?
   - Important for university qualifications

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40 Still to be approved by the EHEA Ministerial meeting in May 2015. This document can be accessed at: http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CDIQFjAC&url=http%3A%2F%2Fwww.kvalifikacije.hr%2Ffgs.ax-d%3Fid=653&ei=erkjVYz8M8iwUfbygqAN&usg=AFQjCNG54UmU7papxBc37tuj-gewqMgObQ&bvm=bv.89947451,d.d24

41 Still to be approved by the EHEA Ministerial meeting in May 2015. These can be accessed at: http://issuu.com/revisionesg/docs/esg_-_draft_endoresed_by_bfug .

42 Details can be accessed at: http://www.cip.gov.ba/index.php/en/vijesti-eng/159-zapoceo-tempus-projekat-bhqfhe-eng

2. List five future ways that BiH HEIs need to adapt to EHEA/EQF reforms.
   - Institutional reform – more autonomy, transparency + democracy?
   - University policies, structures, organisation, priorities, etc.
   - Develop new qualifications, flexible pathways, LLL, access,
   - Modernisation agenda + internationalisation
   - Introduce robust quality assurance - agency + institutional
   - Implement recognition, mobility reforms
   - Welcome/Implement Action plan
   - Fulfil self-certification/referencing criteria – successfully complete process
   - Use trained trainers + promote/recognise them
   - See Action Plan 2014-2020
   - Improve stakeholder involvement with universities

3. Distinguish between QS and OS.
   - Different functions
   - QS-establishes standards/guidelines for qualifications + employs ECTS + more direct link to BiH Baseline QF
   - OS-statements of performance associated with jobs/workplace functions

4. List the main advantages of QS - what are they for?
   - Establish common standards
   - See advantages in terms of different stakeholders
   - List all significant information thus aids transparency
   - Grounds for recognition (institutional, regional, national, international)
   - Support curriculum development
   - Facilitates student centred learning + active role for students
   - Aide quality enhancement
   - Reflects (grows from) BiH Baseline QF
   - Improve the employability of graduates
   - Promote university-business links + cooperation

5. What are the main difficulties you foresee in introducing QS in BiH?
   - Multi level challenges to institutions, government agencies, individuals etc.
   - Failure to fully adopt/implement ESG – difficult implications
   - Resource issues – trainers need recognition + support
   - Political realities – fragmentation (legal issues?)
   - Getting stakeholder involvement
   - Staff reluctance/animosity/inertia/attacks traditional thinking
   - Insufficient support (institutional/senior management, etc.)
   - Top down-bottom-up tensions?
   - Project fatigue?
   - Corruption?

6. What role do Learning Outcomes play in QS?
   - Central function providing clarity, transparency to them
   - Provides precision in terms of knowledge, skills, competences
   - Establish common standards
   - Impact on programmes and units/modules
   - Aid/basis for curriculum development
   - Supports education paradigm change
   - Basis for qualification measurement/evaluation and recognition
   - Facilitate longer term benefits for students via improved qualifications

7. How does the autonomy of universities relate to the role of QS and quality assurance?
   - Strengthen autonomy
   - Provides freedom to interpret QS + flexibility in non-specified areas
   - Supports quality systems within universities
   - Only establish minimum standards – much room for manoeuvre

8. How does the 'employability agenda' relate to QS and OS?
    • Links to both
    • Perhaps more significant for QS
    • Emphasis on transferable skills
    • Promotes more practical education inc. placements, work based learning ,etc.
    • Both about economic improvement, jobs, increased employment, etc

9. List the main advantages of OS - what are they for?
    • Multi functional
    • Advantages for different stakeholders
    • Describe work/job knowledge, skills and competences
    • Establish and raise skills standards
    • Identify key roles and responsibilities and tasks
    • Can identify safety standards + ethical/moral standards
    • Can define occupational characteristics – describe the occupation
    • Directly relate/supports QS

10. How should OS be created and validated? Describe the process.
    • Major role for employers, skills councils, professional bodies + HEI
    • Full stakeholder involvement and agreement (consensus?)
    • Practical research and testing phases – see BiH VET studies (multiple steps)
    • Based on good learning outcomes
    • Create a logical sequence of activities

11. What are the main difficulties in introducing OS?
    • Poor employer representation and structures
    • Employer ignorance + stakeholder reluctance
    • Lack of skills councils, sector councils, professional bodies
    • Requirement to train people for active involvement in processes, etc.
    • Undeveloped university-business relationships
    • See also question 5 answers

Assessment 2 (summative):

Individual (assessed) presentations by participants on elements of the training (see topic list below) followed by group question/answer session of the presenters, to clarify issues and understanding

INSTRUCTIONS:
• *You will be allocated one topic from the list below. It is permissible to refine the exact focus of your presentation - discuss and get this approved by the workshop leaders.*
• *Work in pairs for the preparation and presentation*
• *Allocate equal input time for each member of the pair*
• *Each pair will have a strict maximum of 10 minutes to make their presentation and then 5 minutes will be allocated for questions and clarifications from participants + workshop leaders*
• *You may use one PowerPoint if you think this is useful*

ASSESSMENT CRITERIA
• Clarity of arguments / information provided
• Relevance to question/topic
• Quality of presentation – presentation skills
• Knowledge and understanding of the topic – command of subject
• Ability to convincingly answer follow-up questions
• Teamwork – in pairs + to workshop
NB. All elements to be rated - pass or fail. All elements must gain a pass to achieve an overall pass.

PRESENTATION TOPICS:
1. Relationship of QS/OS to European HE reforms and future BiH self-certification
2. The role, functions and critical analysis of QS and OS
3. Relationship of QS/OS to quality assurance (internal and external)
4. The development and validation of QS/OS
5. Advantages of QS/OS
6. Criticisms of QS/OS and rebuttal arguments
7. QS/OS and curriculum development
8. Learning outcomes and curriculum development, QS/OS, teaching, learning and assessment, ECTS, and student-centred learning
9. The employability agenda and QS/OS
10. Identification of techniques and practical ways to overcome the institutional challenges of implementing QS/OS
11. QS/OS and institutional reform
12. The effective application of the draft training manual *'Manual for the further development and use of qualifications and occupational standards in Bosnia and Herzegovina'*

9.5. Training agenda

Qualifications and Occupational Standards Training Workshop Agenda

DAY 1:

TIME	ACTIVITY	LEARNING OUTCOMES
09:45-10:00	**The European higher education/VET modernisation context and the May 2015 EHEA Ministerial Conference:** • Qualifications frameworks (QF-EHEA and EQF) • Self-certification/referencing and BiH - challenges • The final approved *'Report of the structural reforms working group to the BFUG'*, 08.12.2014 • New European Standards and Guidelines 2015 • New ECTS Users' Guide 2015 • Questions/discussion	1 & 2
10:00-10:30	**The European higher education/VET modernisation context and the May 2015 EHEA Ministerial Conference (continued)**	1 & 2
11:00-12:30	**The BiH modernisation higher education/VET context:** • *'Strengthening Higher Education in BiH (SHE)'* projects I, II, III projects (2003-2011) • Current *'Strategic development of Higher Education and Qualification Standards in BiH 2013-2015'* project • Quick guide to the BiH Baseline Qualifications Framework plus the role of level descriptors • Introduction to the *'Action plan for the development and implementation of the Qualifications Framework in Bosnia Herzegovina for the period 2014-2020'* as adopted by the Council of Ministers on 11th February 2015 • Introduction to the draft '*Guidelines for further development and use of qualifications and occupational standards in BiH*' • Questions/discussion	3
14:00-15:30	**An introduction to Qualification Standards (QS) and Occupational Standards (OS) + their relationship to above** • Critical analysis of BiH 5 QS and 2 OS • Questions/discussion • Preparation for day 2.	3

DAY 2:

TIME	ACTIVITY	LEARNING OUTCOMES
09:00-10:30	**Qualifications Standards (QS):** • The QS toolkit - material and examples • What they are - uses and abuses • Status • Purposes • The BiH Template • Validation of QS - issues and challenges • Process of creation + main problems associated with their development • Positive aspects - identification of advantages • Critical analysis of BiH example QS (examples previously distributed) • Examination of foreign examples of QS • How to present QS to a sceptical audience • Questions/discussions	**4**
11:00-12:00 **14:00-15:30**	**Qualifications Standards (continued)** *Task 1:* Identify the main BiH-specific issues and challenges associated with the practical implementation of QS.	**4**
15:45-17:00	**Occupational Standards (OS):** • The OS toolkit - materials and examples • What they are - uses and abuses • Status • Purposes • The BiH Template • Validation of OS - issues and challenges • Process of creation + main problems associated with their development • Positive aspects - identification of advantages; • Critical analysis of BiH example OS (examples previously distributed) • BiH specific issues and challenges associated with their practical implementation • Examination of foreign examples of OS • How to present OS to a sceptical audience • Questions/discussions	**4**
17:00-17:30	**Occupational Standards (OS) (continued)** *Task 2: Identify the main BiH-specific issues and challenges associated with the practical implementation of OS.*	**4**
17:30-17:45	Wrap-up and preparations for day 3.	

DAY 3:

TIME	ACTIVITY	LEARNING OUTCOMES
09:00-10:00	**Assessment 1: short answer questions on QS, OS and the QF-BiH and European reform context.**	**1, 2 & 3**
10:00-10:30	**Curriculum development employing learning outcomes, QS, OS and external reference points (QF-BiH):** • Evaluation of the role of learning outcomes in EQF, QF-EHEA and QF-BiH reforms • The role of external reference points (national and international) • Familiarisation with the 2011 BiH *'Curriculum Development Good Practice Guide'* • New approaches toward curriculum development • Curriculum development stakeholder roles • Student-centred learning • The teaching, learning and assessment relationships • The 'employability' agenda, transferable skills and curriculum development • Curriculum development checklist of 38 questions	**5 & 6**
11:00-12:00	**Curriculum development employing learning outcomes, QS, OS and external reference points (continued)**	**5 & 6**
12:00-12:30	*Task 3: Linking learning outcomes to QS and OS.*	
14:00-15:30	**Workshop: Learning outcomes and the role of QS, OS at the institutional level impacting on HEI accreditation, curriculum design, development and evaluation:** • Good practice writing and evaluating learning outcomes (see You Tube videos) • Identification of poor learning outcomes at different qualifications framework levels • Learning outcomes at programme and component (unit/module level) • Learning outcomes and assessment and grading/marking criteria • European Credit Transfer and Accumulation Systems (ECTS) credit allocation and learning outcomes • Critical analysis of example learning outcomes at programme and component (unit/module level)	**6 & 7**
15:45-16:30	**Workshop: Learning outcomes and the role of QS, OS at the institutional level impacting on HEI accreditation, curriculum design, development and evaluation:**	**6 & 7**
16:30-17:15	*Task 4: Short exercise - evaluating appropriate learning outcomes at different qualifications framework levels.*	
17:15-17:45	Wrap-up and preparation for day 4.	

DAY 4:

TIME	ACTIVITY	LEARNING OUTCOMES
09:00-10:30	**The quality assurance dimension:** • The significance of the (2015) *'Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)'* • Internal and external quality assurance and QS/OS • The impact on higher education institutions (HEIs)	**4 & 8**
11:00-12:00	**The recognition dimension and QS/OS:** • International comparability • The ENIC-NARIC dimension and new approaches to recognition using learning outcomes and qualifications frameworks • The implications for Diploma Supplements	**4**
12:00-12:30	*Task 5: identification of good practice associated with HEIs' internal quality assurance and approaches to recognition using learning outcomes.*	
14:00-14:30	**The new 2015 *'ECTS Users' Guide'*:** • Credit systems, QS/OS and learning outcomes • ECTS issues and problems associated with QS/OS	**7**
14:30-15:30	**The modernisation of higher education institutions agenda in BiH and the role of trainers in the context of QS/OS:** • Re-thinking the institutional mission • Re-thinking the business-employer university relationship - practical policies • Re-thinking policies, structure and organisation; • Re-thinking appointments and promotions policy • Updating/developing an effective institutional teaching and learning policy	**8**
15:45-16:30	**The challenges facing staff trainers/mentoring in BiH:** • Identification of challenges • Overcoming the challenges	**1, 6 & 8**
16:30-17:45	*Task 6: Devise an effective institutional staff development strategy designed for the capacity building associated with QS/OS and associated reforms.*	

DAY 5:

TIME	ACTIVITY	LEARNING OUTCOMES
09:00-12:30	**Assessment 2: Individual (assessed) presentations by participants on the following elements of the training followed by group question/answer session of the individual presenter, to clarify issues and understanding. Topic to be selected from an approved list of questions associated with the following:** • Relationship of QS/OS to European HE reforms and future BiH self-certification • The role, functions and critical analysis of QS and OS • Relationship of QS/OS to quality assurance (internal and external) • The developmental and validation of QS/OS • Advantages of QS/OS • Criticisms of QS/OS and rebuttal arguments • QS/OS and curriculum development • Learning outcomes and curriculum development, QS/OS, teaching, learning and assessment, ECTS, and student-centred learning • The employability agenda and QS/OS • Identification of techniques and practical ways to overcome the institutional challenges of implementing QS/OS • QS/OS and institutional reform • The effective application of the draft training manual *'Guidelines for further development and use of qualifications and occupational standards in Bosnia and Herzegovina'*	**1 – 8**
11:00-12:30	**Assessment 2 (continued)**	
14:00-15:30	**Final wrap-up plenary session:** • Module feedback questionnaire • Participant feedback (verbal) - ways to improve the draft QS/OS Guidelines and training module • Future developments + ongoing trainer support • Functioning of the BiH network of trainers.	**1 - 8**
15:45-17:00	**Final wrap-up plenary session (continued)**	
17:00	**End of training**	

9.6. List of Trainers

BiH Trainers for development and use of Qualifications and Occupational Standards in BiH

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